



 RUSH UNIVERSITY

# University Catalog

2020-2021

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CHICAGO 1972

The Rush University Catalog is published as a guide for the faculty and students of Rush University. The University reserves the right to add, amend, delete or deviate from any specifications herein at any time and to apply such changes to registered and accepted students. Policies as stated in the catalog supersede policies in departmental student handbooks. Students are responsible for reading the catalog and acquainting themselves with the University policies and regulations to which they are required to adhere. Additionally, students are responsible for knowing the degree requirements relevant to their majors and for enrolling in the courses satisfying those requirements.

Rush University believes the information contained herein is accurate as of Aug. 28, 2020.



# University Catalog 2020-2021

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## About Rush

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## Welcome to Rush University



Rush University is dedicated to providing the highest quality health sciences education and advancing scientific knowledge in health and health care. Together, our four colleges — Rush Medical College, Rush University College of Nursing, the College of Health Sciences and the Graduate College — are educating the next generation of health care leaders and preparing them to transform health care.

Because Rush University is fully integrated with a thriving health system, our more than 2,700 students are offered an exceptional health sciences education while being trained to provide the highest quality patient care and conduct innovative research. Rush University System for Health attracts outstanding

scientists, physicians, nurses and health professionals who want to teach in an environment that values active, hands-on learning, and celebrates scientific discovery and innovation.

Through practical and relevant training at Rush University Medical Center, one of the nation's leading academic medical centers, students prepare for the challenges they will face in their chosen field. They also learn the importance of collaboration with health care professionals across all disciplines. At Rush, students begin interprofessional education at the very start of their academic program. Interprofessional collaboration leads to creative solutions, higher quality health care and better outcomes.

I am glad you have chosen Rush University. Your education and your success are very important to me, and to our faculty and administrators. If at any time you have a concern or a suggestion, feel free to contact your dean or myself. All of us are here to support you.

Thank you for choosing Rush.

**Sherine E. Gabriel, MD, MSc**

President and the James A. Campbell, MD, Distinguished Service Professor, Rush University  
Chief Academic Officer, Rush University System for Health

## Rush University Medical Center Mission, Vision and Values

### Mission

The mission of Rush is to improve the health of the individuals and diverse communities we serve through the integration of outstanding patient care, education, research and community partnerships.

### Vision

Rush will be the leading academic health system in the region and nationally recognized for transforming health care.

### Core Values

#### I CARE

Innovation

Collaboration

Accountability

Respect

Excellence

These five values, known as our I CARE values, convey the philosophy behind every decision Rush employees make. Rush employees also commit themselves to executing these values with compassion. This translates into a dedication — shared by all members of the Rush community — to providing the highest quality patient care.

## History of Rush University Medical Center

Rush University Medical Center is one of Chicago's oldest health care organizations. Its heritage extends back to 1837, when Rush Medical College was established. St. Luke's Hospital, founded in 1864, and Presbyterian Hospital, founded in 1883, merged in 1956 to form Presbyterian-St. Luke's Hospital. The subsequent incorporation of these pioneer institutions in 1969 created Rush-Presbyterian-St. Luke's Medical Center, which was renamed Rush University Medical Center in 2003.

Rush is an academic health system comprising Rush University Medical Center, Rush Copley Medical Center and Rush Oak Park Hospital.

## Renowned Patient Care

Rush University Medical Center encompasses a 675-bed hospital serving adults and children, including the Johnston R. Bowman Health Center, which provides medical and rehabilitative care to older adults and people with short- and long-term disabilities.

It includes Rush's 376-bed Tower hospital building, which opened in 2012 as part of the Medical Center's major campus renovation. Rush's commitment to sustainability innovation earned the Tower LEED Gold certification. It is the largest new construction health care project in the world to be LEED Gold certified. Rush's renovation also includes Rush's Orthopedic Building, which opened in 2010.

A unique combination of research and patient care has earned Rush national rankings in seven specialty areas in *U.S. News & World Report's* 2018-19 America's Best Hospitals issue, among other recognitions of our quality of care and accreditations.

For the first time in its history, Rush University Medical Center has earned a top spot on *U.S. News & World Report's* annual Best Hospitals Honor Roll. This year, Rush University Medical Center holds the 17th spot among the nearly 3,000 U.S. hospitals evaluated, with 11 Rush programs ranked among the nation's best. Fewer than 5% of U.S. hospitals receive high enough scores to rank nationally in even one specialty.

Our nurses are at the forefront of our efforts to provide quality care, receiving Magnet status four times for making outstanding nursing care the standard at the Medical Center. Rush was the first hospital in Illinois serving adults and children to receive Magnet status, the highest honor in nursing.

And some of the world's best athletes trust themselves to the hands of our physicians. Rush is proud to be the preferred hospital for the Chicago Bulls and the Chicago White Sox.

## Educating Future Health Care Providers

Rush University is home to one of the first medical colleges in the Midwest and one of the nation's top-ranked nursing colleges, as well as graduate programs in allied health, health systems management and biomedical research. In addition, the Medical Center offers many highly selective residency and fellowship programs in medical and surgical specialties and subspecialties. Rush's unique practitioner-teacher model for health sciences education and research gives students the opportunity to learn from world-renowned instructors who practice what they teach.

## Committed to Community

In addition to patient care, education and research, Rush maintains a strong commitment to the community. Many students, faculty and staff at Rush generously donate their time and skills both within and outside of our campus. Their efforts include numerous health outreach projects in which Rush collaborates with neighborhood clinics, churches, schools and other organizations to provide health screenings and vital health information for underserved children and adults.

Our education and research endeavors, community service programs and relationships with other hospitals are dedicated to enhancing excellence in patient care for the diverse communities of the Chicago area — now and in the future.

## Rush University Mission, Vision and Values

### Mission

Rush University provides outstanding health sciences education and conducts impactful research in a culture of inclusion, focused on the promotion and preservation of the health and well-being of our diverse communities.

### Vision

The Rush learning community will be the leading health sciences university committed to transforming health care through innovative research and education.

### Core Values

As the academic component of Rush University Medical Center, the University shares the Medical Center's core values: innovation, collaboration, accountability, respect and excellence. The I CARE values guide the efforts of Rush University students, faculty, researchers and staff.

## History of Rush University

Rush University is the academic component of Rush University Medical Center. Founded in 1972, the University has expanded from one college and fewer than 100 students to four colleges and more than 2,700 students. It includes Rush Medical College, Rush University College of Nursing, the College of Health Sciences and the Graduate College.

**Rush Medical College** is named for Benjamin Rush, a physician from Pennsylvania, and signer of the Declaration of Independence. Rush Medical College was chartered in 1837 and opened officially on Dec. 4, 1843, with 22 students enrolled in a 16-week course. During the first century of operation, more than 10,000 physicians received their training at Rush Medical College.

Rush Medical College was affiliated with the University of Chicago from 1898 until 1942, when the medical college temporarily suspended its educational program, though it continued its corporate existence. Its faculty continued undergraduate and graduate teaching of medicine and the biological sciences as members of the faculty of the University of Illinois. The charter of the medical college was reactivated in 1969, when it became part of the Medical Center. Rush Medical College reopened in 1971 with a class of 66 first-year students and 33 third-year students. First-year class size reached its projected maximum of 120 in 1976.

**Rush University College of Nursing** represents a combined heritage dating back to the late 19th century when its first antecedent, the St. Luke's Hospital School of Nursing, opened in 1885 to offer diploma education to nurses. In 1903, the Presbyterian Hospital School of Nursing accepted its first students. From 1956 to 1968, nurses were taught at the merged Presbyterian-St. Luke's Hospital School of Nursing. Before the establishment of the College of Nursing in 1972, more than 7,000 nurses had graduated from these three schools.

**The College of Health Sciences**, established in 1975, traces its origins to the School of Medical Technology sponsored by Presbyterian-St. Luke's Hospital from 1959 to 1972. This school was the second-largest of its kind in the city of Chicago. During its operation, it provided a one-year professional internship program to more than 200 baccalaureate students in medical technology. Today the College of Health Sciences offers doctoral programs in audiology and health sciences, 10 programs at the master's level, and bachelor's programs in health sciences, imaging sciences and vascular ultrasound technology.

**The Graduate College** was established as a separate academic unit in January 1981, having previously been organized as the Graduate School within the College of Health Sciences. The Graduate College is responsible for educational efforts in the basic sciences and offers three master's degree programs and one doctoral degree program.

## The Seal of Rush University

The seal of Rush University is a shield, a classic Greek symbol of preservation and protection, and also a medieval British emblem used for identification. It recognizes the University's overarching commitment to educating health professionals who preserve life and protect patients. Its two colors, green and gold, merge the tradition of the past with the custom of the present: Gold was the single historical color of Rush Medical College, and green is used for the modern Medical Center.



The motto, "ministrare per scientiam," translated from Latin, means to "minister (care for or serve) through scientific knowledge." The Board of Trustees adopted this in 1993 to reflect the commitment to educate caring professionals whose practice is based in knowledge. The shadow in the background is the anchor cross, a symbol of hope and steadfastness, which became the emblem of the merged Presbyterian and St. Luke's hospitals in 1957 and the foundation that created the vision for Rush University. Superimposed on top is the stylized version of the anchor cross that was adopted in 1971 upon the merger of Rush Medical College and Presbyterian-St. Luke's Hospital. The final elements are Chicago, the city that is home to the University, and the date of the University's founding, 1972. The Rush University Board of Overseers adopted the seal in 1999.

## Student Characteristics

Statistics below are based on fall 2019 enrollment figures.

Fall 2018 Enrollment	Men	Women	Total
Rush Medical College	290	263	553
College of Nursing	156	1,078	1,234
College of Health Sciences	156	591	747
The Graduate College	66	95	161
Non-Degree Seeking	9	51	60
<b>Grand Total</b>			<b>2,755</b>

Students by Race and Ethnicity	Total
American Indian or Alaska Native	3
Asian	245
Black or African American	203
Hispanic	322
Native Hawaiian or Other Pacific Islanders	3
White	1,681
Two or More Races	51
Unknown	247
<b>Total</b>	<b>2,755</b>

Student Financial Aid Data	%
Title IV Aid Recipients (total student body):	67%
Pell Grant Recipients (undergraduates only):	33%



## University Offices

### Office of the Provost



**Susan L. Freeman, MD, MS**

*Provost*

The Robert C. and Naomi T. Borwell  
Presidential Chair  
Senior Vice President, Rush  
University System for Health

The provost is the chief operating officer of the University, committed to advancing our mission through outstanding health sciences education and impactful research in a culture of inclusion, health promotion and diversity, while upholding the University core values of innovation, collaboration, accountability, respect and excellence.

Responsible for strategic planning and execution, the provost provides

leadership for core University functions and creates pathways for achieving goals for the academy. One of these goals is the financial well-being of the University, which is tied into the role of the chief finance and business officer, responsible not only for the financial stability of the organization but also ensuring the availability of resources to achieve the mission. The provost works with the finance officer to craft strategic business alliances to enhance the opportunities for learning available to our students.

In addition to the CBFO, the provost oversees four vice provosts who are in charge of student affairs, academic affairs, faculty affairs and research.

The vice provost of student affairs is the chief student affairs officer and oversees the student experience. This includes leadership for the administration, development, assessment and enhancement of student services, consistent with the University's mission and goals. The vice provost of student affairs is responsible for the following areas: student life activities, counseling, enrollment management, student diversity, records and registration, student financial aid, international students, housing, disability services, title IX, health insurance and university facilities. The student affairs office is designed to help you navigate through the complexities of being a student and will always have your success in mind.

The vice provost for academic affairs supports the academic programs of Rush University and assures that the University is accredited by the Higher Learning Commission and other accreditation bodies that oversee and regulate our academic programs. The vice provost for academic affairs works with the provost and other campus leaders in providing leadership for colleges, academic departments and academic degree programs. Academic affairs advances the University's academic priorities, supports interprofessional and cross-college educational initiatives, coordinates development and assessment of academic programs and curricula, identifies and implements effective teaching strategies and technologies, and supports faculty with assessment of student learning outcomes. In addition to assuring institutional effectiveness, the vice provost of academic affairs oversees the University library, the Center for Academic Excellence, the Center for Teaching Excellence and Innovation, the Simulation Center, Interprofessional Education and the anatomy lab.

The vice provost for faculty affairs is responsible for supporting the high quality of the faculty so that every opportunity is available to our students for a superb learning experience. Faculty affairs offers a full range of support for faculty by providing faculty development and mentoring, faculty recruitment, onboarding, promotions and retention, while advancing diversity. In addition to faculty management, the vice provost of faculty affairs oversees Global Health and the Center for Innovative LifeLong Learning (CILL), a new center at Rush developed to provide seamless continuing education for all health disciplines, and enable the many learning modalities and topics needed for licensing and license renewals. Familiarity with CILL will help maintain your commitment to lifelong learning and your connection to Rush after you graduate and join the ranks of Rush alumni.

The vice provost for research is responsible for the oversight and integrity of all research performed, reported and published from Rush University. The vice provost for research serves as the organizational officer, linking the research enterprise and University to NIH. The vice provost oversees laboratory research, clinical trials and translational research, the Office of Research Affairs, grants administration, team science, community research and large collaborative grant efforts. The strong research administration at Rush provides students with limitless possibilities for success in research-related health care fields and affords opportunities to explore research as a career path.

### Office of the Registrar

The Office of the Registrar supports the academic mission of the University by facilitating the transition of students from matriculation to degree completion; creating, interpreting and enforcing academic and administrative policies and procedures; overseeing the Family Educational Rights and Privacy Act of 1974 (FERPA); scheduling all classroom space in the Armour Academic Center and academic testing in the Triangle Office Building; fulfilling transcript and credentialing/licensing requests; and providing accessible, reliable, responsive and courteous personal services and support that meet the diverse needs of the University's students, faculty, staff, administration and alumni. More information about the Office of the Registrar is available at [www.rushu.rush.edu/registrar](http://www.rushu.rush.edu/registrar).

### Alumni Relations

The Office of Alumni Relations is located in the Rush East Building, Suite 300, at 1201 W. Harrison St. Though the legacy of a Rush education dates back to 1837, Rush University is a relatively young institution. Since the University's inception in 1972, it has conferred more than 20,000 degrees in the health professions. The Office of Alumni Relations provides channels for Rush Medical College, the College of Nursing, the College of Health Sciences, the Graduate College and our predecessor school alumni as well as former Medical Center house staff to stay connected to Rush as follows:

- Remain informed of current developments at the University and Medical Center
- Develop an active interest in and involvement with their alma mater
- Maintain contact with fellow alumni and faculty
- Take advantage of continuing education opportunities offered through Rush University
- Respond positively through both financial and philosophical support
- Promote and perpetuate the high standards of excellence in patient care, education and scientific advancement consistent with the objectives of Rush University Medical Center

At this time, the following formally organized active alumni associations exist for Rush University graduates:

- The Rush Medical College Alumni Association
- The Rush-Presbyterian-St. Luke's Nurses Alumni Association
- Rush University Health Systems Management Alumni Association (HSMAA)

For more information concerning Rush University alumni associations, programs and events, contact the Office of Alumni Relations at (312) 942-7199 or [alumni@rush.edu](mailto:alumni@rush.edu), or visit the alumni webpage at [www.rushu.rush.edu/alumni](http://www.rushu.rush.edu/alumni).

### Office of Institutional Effectiveness (OIE)

Rush University's Office of Institutional Effectiveness (OIE) provides leadership and support in the area of institutional research, accreditation, academic planning, assessment and regulatory mandates.

The OIE fulfills its mission in the following ways:

- Provides comprehensive information to support institutional planning, policy formation, decision-making and evaluation of effectiveness
- Coordinates responses to external accountability mandates and a wide range of internal and external requests for information about the university
- Provides guidance and coordination support for campus-wide and unit-level assessment of academic programs and administrative processes to support the university's quality improvement efforts
- Guides and facilitates the process of reaffirmation of accreditation and substantive change reporting
- Provides evidence of institutional effectiveness

## Accreditation, Authorization and Licenses

### Rush University

#### Higher Learning Commission

230 S. LaSalle St., Suite 7-500  
Chicago, IL 60604  
(800) 621-7440  
www.hlcommission.org

#### Illinois Board of Higher Education

1 N. Old State Capitol Plaza, Suite 333  
Springfield, IL 62701  
(217) 782-2551  
www.ibhe.org

*Illinois Board of Higher Education has authorized all degree programs offered through Rush University.*

### Rush Medical College

#### Medicine, MD

#### Liaison Committee on Medical Education

655 K St. NW, Suite 100  
Washington, DC 20001  
(202) 828-0596  
www.lcme.org

### College of Nursing

#### Nursing (MNS, DNP, Post-graduate certificate)

655 K St. NW, Suite 750  
Washington, DC 20001  
(202) 887-6791  
www.aacn.nche.edu/ccne-accreditation

#### Nurse Anesthesia, DNP

#### Council on Accreditation of Nurse Anesthesia Educational Programs

222 S. Prospect Ave.  
Park Ridge, IL 60068  
(847) 655-1160  
home.coa.us.com

### College of Health Sciences

#### Audiology (AuD); Speech-Language Pathology (MS)

#### The Council on Academic Accreditation in Audiology and Speech-Language Pathology

American Speech-Language-Hearing Association  
2200 Research Blvd., Suite 310  
Rockville, MD 20850  
(800) 498-2071  
caa.asha.org

#### Blood Bank Technology (certificate)

#### Commission on Accreditation of Allied Health Education Programs

25400 US Highway 19 North, Suite 158  
Clearwater, FL 33763  
(727) 210-2350  
(727) 210-2354  
www.caahep.org

#### Dietetic Internship; Clinical Nutrition (MS)

#### Accreditation Council for Education in Nutrition and Dietetics

120 S. Riverside Plaza, Suite 2190  
Chicago, IL 60606  
(312) 899-0040 ext. 5400  
www.eatright.org

#### Health Systems Management (MS)

#### Commission on Accreditation of Health Care Management Education

Health Systems Management (MS) Commission on Accreditation of Health Care Management Education  
6110 Executive Blvd., Suite 614  
Rockville, MD 20852  
(301) 298-1820  
www.cahme.org

#### Medical Laboratory Science (MS)

#### National Accrediting Agency for Clinical Laboratory Sciences

5600 N. River Road, Suite 720  
Rosemont, IL 60018  
(773) 714-8880  
www.naacls.org

#### Occupational Therapy (MS & OTD)

#### Accreditation Council for Occupational Therapy Education of the American Occupational Therapy Association

6116 Executive Boulevard, Suite 200,  
North Bethesda, MD 20852-4929  
(301) 652-2682 or (301) 652-AOTA  
www.acoteonline.org

#### Perfusion Technology (MS)

#### Accreditation Committee - Perfusion Education

552 West Jamison Place  
Littleton, CO 80120  
(303) 794-6283  
www.ac-pe.org

#### Physician Assistant (MS)

#### Accreditation Review Commission on Education for the Physician Assistant

12000 Findley Road, Suite 275  
Johns Creek, GA 30097  
(770) 476-1224  
www.arc-pa.org

#### Respiratory Care (MS)

#### Commission on Accreditation for Respiratory Care

1248 Harwood Road  
Bedford, TX 76021  
(817) 283-2835  
www.coarc.com

#### Religion, Health and Human Values

#### (MA and Certificate CPE)

#### Association for Clinical Pastoral Education

One West Court Square, Suite 325  
Decatur, GA 30030  
(404) 320-1472  
www.acpe.edu

#### Vascular Ultrasound (BS)

#### Joint Review Committee on Education in Diagnostic Medical Sonography

6021 University Blvd., Suite 500  
Ellicott City, MD 21043  
(443) 973-3251  
www.jrcdms.org

### Graduate Medical Education

#### Graduate Medical Education

#### Accreditation Council of Graduate Medical Education

401 N. Michigan Ave., Suite 2000  
Chicago, IL 60611  
(312) 755-5000  
www.acgme.org

### Continuing Education

#### Continuing Education (Medical)

#### Accreditation Council for Continuing Medical Education

401 N. Michigan Ave., Suite 1850  
Chicago, IL 60611  
(312) 527-9200  
www.accme.org

#### Continuing Education (Nursing)

#### American Nurses Credentialing Center

American Nurses Association  
8515 Georgia Ave., Suite 400  
Silver Spring, MD 20910  
(800) 284-2378  
www.nursingworld.org/ancc

#### Continuing Education (Social Work, Physical Therapy, Psychology)

#### Illinois Department of Financial and Professional Regulation

100 W. Randolph St., Ninth Floor  
Chicago, IL 60601  
(888) 473-4858  
www.idfpr.com

#### Continuing Education (Pharmacy)

#### Accreditation Council for Pharmacy Education

135 S. LaSalle Street, Suite 4100  
Chicago, IL 60603  
(312) 664-3575  
www.acpe-accredit.org

### Research

#### Human Subject Research

#### Association for the Accreditation of Human Research Protection Programs

3720 S. Flower St., Third Floor  
Los Angeles, CA 90089  
(213) 821-1154  
opr.usc.edu/policies-and-procedures/aahrpp

#### U.S. Food and Drug Administration

10903 New Hampshire Ave.  
Silver Spring, MD 20993  
(888) 463-6332  
www.fda.gov

#### Office for Human Research Protections

1101 Wootton Parkway, Suite 200  
Rockville, MD 20852  
(240) 453-6900  
www.hhs.gov/ohrp

#### Office for Civil Rights

U.S. Department of Health and Human Services  
233 N. Michigan Ave., Suite 240  
Chicago, IL 60601  
(800) 368-1019  
www.hhs.gov/ocr/index.html

**Animal Subject Research**  
**U.S. Department of Agriculture**  
1400 Independence Ave., S.W.  
Washington, DC 20250  
(202) 720-2791  
www.usda.gov

**Office of Laboratory Animal Welfare**  
RKL 1, Suite 360, MSC 7982  
6705 Rockledge Drive  
Bethesda, MD 20892  
(301) 496-7163  
olaw.nih.gov

**Association for Assessment and Accreditation of Laboratory Animal Care**  
5205 Chairman's Court, Suite 300  
Frederick, MD 21703  
(301) 696-9626  
www.aaalac.org

## Authorization

The Illinois Board of Higher Education has authorized all degree programs offered through Rush University.

Illinois Board of Higher Education  
1 N. Old State Capital Plaza, Suite 333  
Springfield, IL 62701-1377  
(217) 782-2551  
(217) 782-8548 (Fax)  
www.ibhe.state.il.us

Rush University participates in the State Authorization Reciprocity Agreement (SARA). SARA is overseen by a National Council and administered by four regional education compacts (Midwestern Higher Education Compact, New England Board of Higher Education, Southern Regional Education Board and Western Interstate Commission for Higher Education)

## Licenses

State of Illinois  
Department of Public Health  
Cook County Board of Health

## Rush University Medical Center Memberships

*Rush University Medical Center belongs to the following organizations:*

Association of American Medical Colleges  
American Association of Colleges of Nursing  
Federation of Independent Illinois Colleges and Universities  
Association of Schools of Allied Health Professions  
Association of University Programs in Health Administration  
National League for Nursing  
Association for Health Services Research  
American Hospital Association  
Illinois Hospital Association  
Voluntary Hospitals of America  
Metropolitan Chicago Health Care Council  
Blue Cross/Blue Shield Health Care Service Corp.  
Council of Graduate Schools  
Midwestern Association of Graduate Schools  
Illinois Association of Graduate Schools  
Association for Clinical Pastoral Education  
Association of Bioethics Program Directors  
Council of Academic Programs in Communication Disorders and Sciences  
Interuniversity Consortium for Political and Social Science  
Physician Assistant Education Association  
Illinois Academy of Physician Assistants  
American Academy of Physician Assistants

## Rush University Affiliated Colleges and Universities

*The following colleges and universities have programs that are affiliated with one or more academic program at Rush University:*

Benedictine University, Lisle, Illinois  
Carleton College, Northfield, Minnesota  
Claflin University, Orangeburg, South Carolina  
Concordia University, River Forest, Illinois  
Cornell College, Mount Vernon, Indiana  
Dominican University, River Forest, Illinois  
Eureka College, Eureka, Illinois  
Fisk University, Nashville, Tennessee  
Illinois College, Jacksonville, Illinois  
Knox College, Galesburg, Illinois  
Lake Forest College, Lake Forest, Illinois  
Lawrence University, Appleton, Wisconsin  
Lewis University, Romeoville, Illinois  
Monmouth College, Monmouth, Illinois  
North Central College, Naperville, Illinois  
Northeastern Illinois University, Chicago, Illinois  
Ripon College, Ripon, Wisconsin  
Spelman College, Atlanta, Georgia  
St. Norbet College, De Pere, Wisconsin  
Wheaton College, Wheaton, Illinois  
Xavier University Of Louisiana, New Orleans, Louisiana

## Hazardous Exposure Procedures

Exposure Incident Definition: Eye, mouth, mucous membrane, non-intact skin contact or parenteral exposure to blood or potentially infectious or hazardous materials that result from the performance of a duty related to a student's educational program.

## Hazardous Exposure Procedure at Rush University Medical Center

1. Wash injured area with soap and water. Use water only for the eyes, nose or mouth.
2. Immediately report the incident to your preceptor, supervisor and/or course instructor. Do not complete the employee injury report.
3. Immediately call, and then report to, Employee and Corporate Health Services, or ECHS, during regular hours (Monday - Friday, 7:30 a.m. to 4 p.m.), Room 475, fourth floor of the Atrium, 1650 W. Harrison St., (312) 942-5878 for blood/body fluid exposures only. People who are exposed to hazardous materials or other injuries should report to the Emergency Department, or ED, and follow up with a health care provider. Medical students should follow up with Lifetime Medical Associates.
4. If ECHS is closed, immediately report to the ED, first floor of the Tower, 1620 W. Harrison St., (312) 947-0100. Please bring your student ID or indicate that you are a student and not an employee. If a student is seen in the ED, they must report to ECHS the next business day. Medical students should follow up with Lifetime Medical Associates.
5. Supply the ECHS or ED nurse or physician with the following information on the source: name, date of birth, medical record number, known medical diseases (e.g. hepatitis B, HIV) and patient room number. All information is recorded confidentially in the Blood/Body Fluid Exposure Record.
6. If the incident occurs in the OR, have personnel draw two red top tubes on source, label them with source information and take them to the ECHS or ED. Students will be counseled or treated as deemed appropriate by ECHS or ED personnel.
7. Follow up with ECHS as directed for follow-up lab work and treatment as indicated. Only medical students will follow -up with Lifetime Medical Associates (LMA).
8. If you are not on Rush's main campus, follow the protocol at your facility. If directed to the Rush ED, bring source patient information (No. 4) and source blood in two red top tubes with source information. Email RU.Report\_Exposures@rush.edu with the exposed student's name, college, course, date, time and details of exposure for follow-up and billing. Follow-up care should be received at ECHS or Lifetime Medical Associates.

### Phone Numbers Students May Need:

#### Rush University Counseling Center

(312) 942-3687

#### Rush University Medical Center Campus Security

(312) 942-5678

#### Rush University Medical Center Emergency Room

(312) 942-0100

#### Rush University Medical Center Employee and Corporate Health Services

(312) 942-5878

#### Rush Hotline

(877) 787-4009

#### Office of Medical Student Programs

(312) 942-6915

#### Lifetime Medical Associates

(312) 942-8000

### Crisis Lines:

#### Chicago Police Department

911

#### National Suicide Hotline

(800) 273-8255

#### YWCA Rape Crisis Hotline

(888) 293-2080

#### Alcoholics Anonymous 24-Hour Hotline

(312) 346-1475

#### Narcotics Anonymous 24-Hour Hotline

(708) 848-4884

#### Northwestern Memorial Hospital 24-Hour Hotline

(312) 926-8100

#### Domestic Violence Helpline (City of Chicago)

(877) 863-6338

#### Sarah's Inn Hotline (domestic violence)

(708) 386-4225

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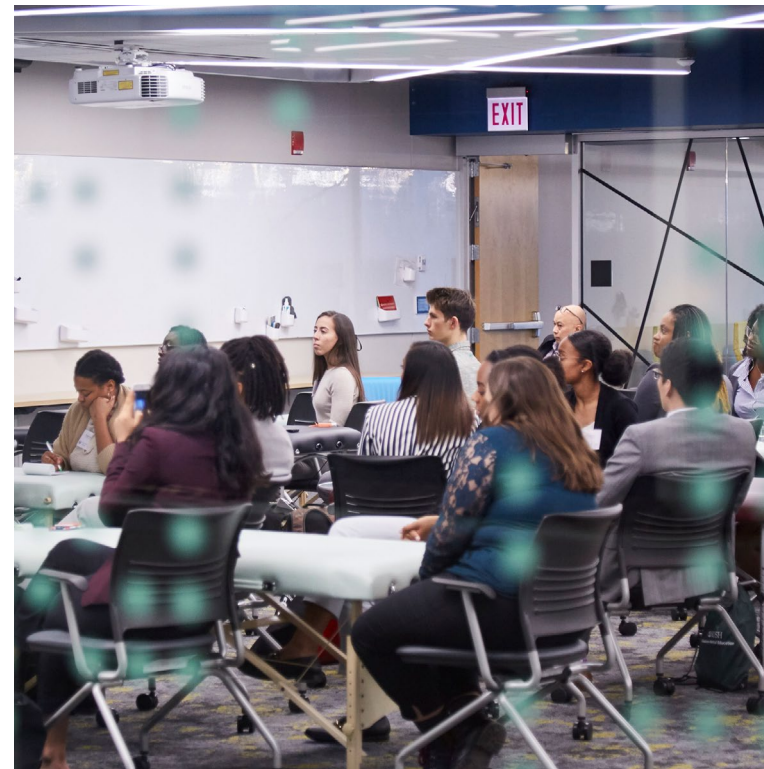
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& Student Resources**

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- Center for Academic Excellence
- Center for Clinical Wellness
- Center for Teaching Excellence and Innovation
- Fitness Center
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- Matthews Rush University Bookstore
- McCormick Educational Technology Center
- Media Services
- Office of General Education Resources
- Quick Copy Center
- Office of International Student Services
- Office of Student Accessibility Services
- Office of Student Diversity and Multicultural Affairs
- Office of Student Life and Engagement
- Student Activities and Programming
- Campus Housing
- Career Development
- Publications
- Student Lounge
- Student Lockers
- Student Organizations
- Voter Registration
- Rush Community Service Initiatives Program
- Rush Production Group
- Student Identification Cards
- Student Identity Access Management and Email Accounts
- University Facilities
- Worship Opportunities

## Campus Information

The main campus of Rush University and Rush University Medical Center is located on the Near West Side of Chicago — not far from downtown (the Loop). The area surrounding the campus is undergoing redevelopment. Of particular interest is the Chicago Technology Park, which incorporates biomedical research facilities and programs.

Townhomes and condominiums have been built in Garibaldi Park, just east of Rush's campus, and many new businesses are flourishing in the Taylor Street area. There are other health care facilities in the Illinois Medical District, including the University of Illinois at Chicago, the John H. Stroger, Jr. Hospital of Cook County and the Jesse Brown VA Medical Center.

Rush is centrally and conveniently located. The main campus now consists of 22 buildings, including facilities for achieving the goals of the Medical Center: patient care, education and research. The main campus also includes two indoor parking facilities.

Armour Academic Center is the hub of most student activities. The Library of Rush University Medical Center and the McCormick Educational Technology Center are located in the Armour Academic Center, along with classrooms, laboratories, academic computing, specialized facilities, the Educational Affairs suite, the Office of Student Life and Engagement, the Office of Diversity and Inclusion, the Rush University bookstore, a cafeteria, and the administrative offices of Rush Medical College, Rush University College of Nursing, the College of Health Sciences and the Graduate College.

## Medical Center and Facilities

Laboratories are located throughout the Medical Center complex but are principally found in Jelke South. Additional departmental laboratories are located in the Cohn Research Building and in the Tech 2000 building located at 2000 W. Harrison St. In addition to the Chicago campus, Rush University System for Health includes Rush Copley Medical Center in Aurora, Illinois, and Rush Oak Park Hospital, located in Oak Park, Illinois.

Directly across the Eisenhower Expressway from the main campus is the Triangle Office Building, which is home to Finance, Legal Affairs, Philanthropy, Marketing and Communications, the Data Center and other functions of Rush.

The Office of Student Life and Engagement distributes a campus map to new students and publishes the *Rush University Student Handbook*, which includes locations and telephone numbers of people, offices, departments and buildings of interest to students.

## Center for Academic Excellence

The Center for Academic Excellence is a new program at Rush University. It provides academic support services and connects students to key resources to help them maximize their academic potential. Services are free and available to all students enrolled at Rush University.

The center offers workshops and webinars to foster student success, with topics including study skills, test-taking strategies, and time management and procrastination. The center uses the web-based TutorTrac system to schedule and evaluate in-person or remote peer tutoring and writing tutoring sessions. In addition, the center assists students in navigating other support services at Rush.

The center's administrative services and staff will soon be housed within the Library of Rush University Medical Center (fifth floor of the Armour Academic Center). For more information, call (312) 563-1800, email [StudentSuccess@rush.edu](mailto:StudentSuccess@rush.edu) or visit [www.rushu.rush.edu/center-student-success](http://www.rushu.rush.edu/center-student-success).

## Center for Clinical Wellness

The Center for Clinical Wellness is a hub for all things wellness at Rush and is available to all current members of our community, including students, house staff, clinicians and non-clinical employees at Rush University Medical Center, Rush Oak Park Hospital and Rush Copley Medical Center. Made possible by a significant philanthropic gift, the center represents a new chapter in well-being for Rush University System for Health. Each finish, color and texture was selected with a scientifically proven rationale to improve the well-being of visitors, while creating an optimal healing environment.

The center, which provides a network of on-site and virtual tools as part of an overarching wellness eco-system — including free counseling, coaching and other services — addresses three primary goals: creation of a culture of wellness, increased support for mental health and the production of leading research through an emphasis on data and analytics. The center seeks innovative solutions to address burnout, improve resilience and enhance joy in work.

For additional specifics — including scheduling, location, hours and program offerings — please visit the Center for Clinical Wellness webpage at [insiderush.rush.edu/wellness](http://insiderush.rush.edu/wellness).

## Center for Teaching Excellence and Innovation

The Center for Teaching Excellence and Innovation, or CTEI (pronounced 'city'), works in partnership with faculty on instructional design and course development. Staff members and CTEI programs also expand the use of educational technologies and optimize the learning management system to enhance course goals. The center has a staff of instructional designers and instructional technologists to support all faculty who teach at Rush.

The center is committed to assisting faculty with their courses, from curriculum development through delivery, whether instruction is offered online, face-to-face, or a combination of online and face-to-face. CTEI staff support faculty through highly personalized one-on-one consultations, formal training for online teaching and regularly scheduled workshops.

The center is located on the ninth floor of the Armour Academic Center, Suite 919. Please email [CTEI@rush.edu](mailto:CTEI@rush.edu) or visit [www.rushu.rush.edu/CTEI](http://www.rushu.rush.edu/CTEI) to learn more about available resources or to request assistance with course design or delivery.

## Fitness Center

Whether you're trying to get in shape, lose weight, be more active or unwind after a busy day, the Rush Fitness Center is just what you're looking for. The Fitness Center offers group exercise classes and one-on-one personal training. In addition, the facility includes a variety of machines and equipment, a fitness studio, cardio and strength training, stretching areas, lockers rooms, showers and amenities.

For membership inquiries, please call (312) 947-2348. We're also on Facebook at [www.facebook.com/RUMCFitnesscenter](http://www.facebook.com/RUMCFitnesscenter).

## Library and Archives

### Library of Rush University Medical Center

The Library is a collaborative learning and research commons. Our engaged staff provides high-quality instruction, services, support and space for our diverse community, as

we align our work to the Rush mission: improve the health of the individuals and diverse communities we serve. The Library is located on the fifth floor of the Armour Academic Center. Visit [rushu.libguides.com](http://rushu.libguides.com) for more information.

The Library offers a comprehensive collection of print and online materials covering all areas of the health sciences. Online library resources include full-text journals, e-books and databases. The database collection features resources such as CINAHL, PubMed, Ovid, Scopus, Medline and PsycINFO. Other online resources include point-of-care reference tools, such as UpToDate and Clinical Key, which provide concise topic reviews, clinical guidelines, extensive drug information and full text for a wide range of medical textbooks and journals.

Students, faculty and staff at Rush University Medical Center can access online library resources from off-campus locations using their Rush NetID. For more information, please call (312) 942-5950, email [lib\\_ref@rush.edu](mailto:lib_ref@rush.edu) or visit [rushu.libguides.com/help/offcampus](http://rushu.libguides.com/help/offcampus).

If the Library does not have an item you need, it can be requested from another library via interlibrary loan or I-Share. Books, journal articles, proceedings, dissertations and audiovisual materials can all be requested from other institutions. Turnaround time and loan period depend upon the lending library. For details, call (312) 942-5950 or email [lib\\_ref@rush.edu](mailto:lib_ref@rush.edu).

Reference librarians provide personalized information services to all members of the Rush community and also are available to meet with distance education students online. Request assistance with a literature search or schedule individual or group instruction at your convenience to learn how best to use PubMed, evidence-based medical databases, RefWorks Citation Manager or any other Library resources. Call (312) 942-5950 or email [lib\\_ref@rush.edu](mailto:lib_ref@rush.edu) to make arrangements for individual or course-related instruction.

### Rush University Medical Center Archives

The Archives tells Rush's story through its collections — its esteemed and enduring history of education, research, patient care and community service. Dating back to the founding of Rush Medical College in 1837, the Archives identifies, preserves, organizes and enables access to valuable Rush records from our earliest years to current digital assets.

The Archives engages with the Rush community and the public. Rush University students can broaden their understanding of course materials by exploring Rush's past

contributions to health care. Students, faculty, staff and alumni are encouraged to contribute their experiences and materials to strengthen and diversify the collections for future researchers. Rush's archivist provides reference services, hosts historic tours, makes presentations, helps create exhibits, and assists with records consultations and acquisitions.

The Archives office is located in the basement of the Triangle Office Building at 1700 W. Van Buren St., Suite 086. Learn more about the history of Rush and explore our collections online: [rushu.libguides.com/rusharchives](http://rushu.libguides.com/rusharchives).

## Matthews Rush University Bookstore

The Matthews Rush University Bookstore, located on the ground level of the Armour Academic Center, is a health sciences bookstore serving the needs of students, faculty and staff at Rush University Medical Center. The bookstore stocks the required and recommended textbooks for courses offered at Rush University, as well as an assortment of reference and review books.

Special orders are handled by the bookstore and will generally be fulfilled in one to two weeks. The bookstore also supplies Rush insignia items, medical apparel and equipment, school supplies and stationary, convenience items, U.S. Postal Service stamps and miscellaneous gifts.

## McCormick Educational Technology Center

The McCormick Educational Technology Center, or METC, is a media, computer and educational support center. Its mission is to facilitate University teaching and learning through the use of media, computer software and instructional design assistance.

A large collection of media for student and faculty use is available at the METC. Tablets, laptops, projectors, video and audio recorders, and other accessories are also available to students for limited checkout. Most media and equipment may be reserved in advance.

The METC is home to three multimedia classrooms — Room 902 (capacity 10), Room 903 (capacity 40) and Room 908 (capacity 17) — and three media viewing rooms. Rush faculty can reserve multimedia classrooms through the Astra room scheduling system. Students can use viewing rooms for study and group discussion. Workstations in Room 917 (computer lab) are also available for students and residents.

Students with a valid Rush University ID have computer lab access on a first-come, first-served basis 24 hours a day, seven days a week. There are two printers in the METC. Software installed on workstations includes the Microsoft Office suite, web browsers, secure exam software, SPSS and various software requested by faculty for instruction.

In addition, the METC coordinates the Academic Testing Center, or ATC, located in the Triangle Office Building. The ATC accommodates up to 75 students for testing and includes a multipurpose waiting area that can function as a collaborative learning space. The ATC is also reserved through the Office of the Registrar.

METC staff are available to partner with faculty to enhance instruction. Staff also assist with locating, previewing, evaluating and acquiring commercially produced software and media for use within courses, and can offer collaborative support with audiovisual projects using products such as Blackboard Collaborate, Camtasia and Panopto.

METC staff also provide assessment support through the scanning and reporting of testing results to faculty through optical mark reader, or OMR, as well as test forms and online testing.

## Media Services

Media Services, located in the Armour Academic Center, provides a wide range of audiovisual support for classrooms, meeting rooms and auditoriums throughout the University and Medical Center. Additionally, Media Services provides recommendations to faculty, staff or students who are purchasing audiovisual equipment.

Please call (312) 563-2527 and press 1 at the prompt for classroom support in the Armour Academic Center. Please call (312) 942-4969 for Audiovisual assistance for the rest of the Medical Center. To schedule your event, please send your request to [Media\\_Services@rush.edu](mailto:Media_Services@rush.edu) five business days in advance.

## Office of General Education Resources

The Office of General Educational Resources offers a wide variety of services to Rush University students and faculty. Available services include Laboratory Services, the Emergency Cardiac Care Program and the Quick Copy Center. The office is located in the Multidisciplinary Laboratory area on the seventh floor of the Armour Academic Center, Room 720.

Lab space is available Monday through Friday from 8 a.m. to 4:30 p.m. but must be reserved by faculty. Students who need special laboratory instruments or services for education or research projects should discuss their needs in advance with the staff. Please call (312) 942-6791 if you have any questions.

## Quick Copy Center

Located on the seventh floor of Armour Academic Center, Room 780, the Quick Copy Center duplicates materials for educational purposes as well as general needs. A full range of services are offered, including front-and-back copying, three-hole punched copies, booklets and multiple binding options, colored copying and a variety of large format posters and banners.

Personal work of one or more copies can be accommodated for faculty and students at a reasonable fee. Quick Copy Center is open Monday through Friday from 8 a.m. to 4:30 p.m.

## Office of International Student Services

International Student Services, housed within the Office of the Registrar and located in Suite 440 of the Armour Academic Center, provides services for international students who are planning to study at Rush and need authorization from Department of Homeland Security's Student & Exchange Visitor Program, or SEVP, to do so.

International Student Services serves students in the following ways:

- Represents Rush within the Student and Exchange Visitors Information System regarding the attendance of international students
- Helps prospective students navigate issues concerning international admission
- Issues I-20 documents for F-1 students to assure compliance with established governmental policies and procedures
- Consults with current and potential students, academic and administrative offices, staff and faculty regarding nonimmigrant student issues
- Orients new students to the Rush community in collaboration with the Office of Student Life and Engagement
- Helps international students be an integral part of the diversity and culture of the Rush community

In addition, the International Student Services office is available to serve the needs of prospective international students and alumni. Please visit Rush's International Student Services webpage or call (312) 942-2030 for additional information.

## Office of Student Accessibility Services

In keeping with its goal to promote diversity among its student population, Rush University is committed to attracting and educating students who will help to make the population of health care professionals reflective of the national population, including individuals with disabilities. In addition, Rush University is committed to ensuring equal access to its facilities, programs and services is available to students with disabilities.

To be eligible for accommodations, a student must have a documented disability, as defined by the ADA and Section 504 of the Rehabilitation Act of 1973. Students are encouraged to apply to the Office of Student Accessibility Services as soon as possible to discuss reasonable accommodations for their specific academic programs.

To learn more about accommodations at Rush University, please visit [www.rushu.rush.edu/office-student-accessibility-services](http://www.rushu.rush.edu/office-student-accessibility-services) or contact:

Marie Lusk, MBA, MSW, LSW  
Director, Office of Student Accessibility Services  
600 S. Paulina St. AAC 901  
Chicago, IL. 60612  
(312) 942-5237  
[Marie\\_Lusk@rush.edu](mailto:Marie_Lusk@rush.edu)

## Office of Student Diversity and Multicultural Affairs

Diversity, equity and inclusion are critical to our mission at Rush University—to provide outstanding health sciences education in a climate of inclusion.

The Office of Student Diversity and Multicultural Affairs, or SDMA, therefore strives to create an inclusive environment and learning community where students, faculty, and staff of all backgrounds feel welcome and supported, having opportunities to share their personal experiences.

Accordingly, SDMA collaborates with students, faculty, staff, each of Rush's four colleges and University stakeholders to incorporate diversity and multicultural principles within the campus culture. These aims are undergirded by the goal and vision of the office:



## Goal

Shape and sustain an inclusive and multicultural campus environment for all students at Rush University.

## Vision

Rush University will serve as a leader in creating and fostering an inclusive and multicultural campus environment in which students, faculty and staff from all backgrounds embody and respect attitudes, values and diverse perspectives in all areas of their work.

To achieve the goal and vision of SDMA, there is a commitment to the following:

**Student Professional Development:** Provide opportunities for students to engage in diversity and inclusion leadership opportunities and professional development activities to enhance their diversity, inclusion and multicultural awareness.

**Education and Training:** Offer ongoing trainings, webinars, workshops, lecture series and events to promote diversity and inclusion awareness, and leadership for students and the greater campus community.

**Supporting Academic Success:** Assist in developing co-curricular programming that build capacity to navigate diversity and inclusion issues and that complement the learning environment and foster academic achievement.

**Campus Climate:** Implement a systematic, continuous assessment of campus climate for students and action plans to enhance and strengthen a welcoming, diverse and inclusive student environment.

SDMA is located in the Armour Academic Center, Room 984G. For additional information, please call (312) 942-0725 or email [student\\_diversity@rush.edu](mailto:student_diversity@rush.edu).

## Office of Student Life and Engagement

The mission of the Office of Student Life and Engagement is to provide services and opportunities that will enhance each student's academic experience and connection with Rush University. The Student Life and Engagement staff works closely with students, faculty and administration to identify student needs, and design and implement programs and policies to meet those needs.

The professional staff serves as advisers to student organizations; provides career services to students in each academic discipline; develops and implements University

orientation for new students; assists with the development and implementation of commencement events; oversees Rush University-sponsored housing; and sponsors educational, multicultural and social activities for all students.

Office of Student Life and Engagement  
Armour Academic Center  
600 S. Paulina St., Suite 984  
Chicago, IL 60612  
Phone: (312) 942-6302  
Fax: (312) 942-9283  
[student\\_life@rush.edu](mailto:student_life@rush.edu)  
[www.rushu.rush.edu/student-life-and-engagement](http://www.rushu.rush.edu/student-life-and-engagement)

## Student Activities and Programming

The Office of Student Life and Engagement sponsors programs that are open to all Rush University students, faculty and staff. The primary objective of these programs is to enhance the cocurricular life of the Rush student community. In the past, the office has sponsored a variety of events, including Welcome Back Week, career workshops and a Current Issues in Health Care series, as well as Fall Into Rush (student organization fair), Constitution Day and Student Appreciation Week.

In addition, the office encourages exploration of Chicago's many cultural, educational and social resources by regularly offering discounted museum, theatre, sports and movie tickets to students. Student Life and Engagement staff welcome input and assistance from students in planning and implementing events. Students wishing to become involved are encouraged to contact the Office of Student Life and Engagement at (312) 942-6302 or [student\\_life@rush.edu](mailto:student_life@rush.edu).

## Campus Housing

Rush University provides a limited block of apartments at Tailor Lofts Student Apartments (315 S. Peoria St., Chicago, IL 60607) to address current student housing needs while the University undergoes a new master facility plan. Tailor Lofts Student Apartments are located one mile east of Rush's campus, just two stops away on the CTA's Blue Line train.

The amenities at Tailor Lofts Student Apartments include, but are not limited to, the following:

- 24-hour security presence on first-floor entrance
- Wi-Fi throughout the entire building
- 24-hour Mac computer center with printing capabilities

- Laundry center and recycling facilities on every floor
- Kitchens in every unit (including microwave, stove and full-size refrigerator)

To ensure additional convenience, registered Rush students residing at Tailor Lofts Student Apartments have their housing costs, in addition to their tuition, billed through the University.

Rush has worked with Tailor Lofts Student Apartments to negotiate special rates for Rush students, so these conveniently located and competitively priced student apartments do go quickly. Interested Rush students should contact Tailor Lofts to begin the application process.

For more information please visit [www.tailorlofts.info](http://www.tailorlofts.info).

## Brokers

Rush University also works with two brokerage companies to provide additional assistance to students, free of charge, with locating and securing other off-campus housing. Both companies work with a variety of properties in the Chicago area and have been awarded for their great customer service. Be sure to mention that you are a Rush student.

### Downtown Apartment Company

[www.downtownloop.com](http://www.downtownloop.com)  
[rush@downtownloop.com](mailto:rush@downtownloop.com)

### The Apartment People

[www.apartmentpeople.com](http://www.apartmentpeople.com)

## Off-Campus Student Housing Guide

Additional information about off-campus student housing, Chicago neighborhoods, and transportation has been compiled in a guide that can be accessed by visiting the Student Life and Engagement housing webpage, via email at [student\\_life@rush.edu](mailto:student_life@rush.edu) or by telephone at (312) 942-6302.

## Career Development

The Office of Student Life and Engagement assists students who are preparing for job searches, including internship/externship, full-time positions and residency application processes with resumes, curriculum vitae, cover letters, personal statements and interviewing techniques. Monthly career workshops are offered, and a variety of career resources are available in the office for student use, including workbooks, handouts and guidebooks.

Many resources are also available on the Rush University Portal. Students wishing to make a one-on-one appointment (video appointments are available for distance learners) for career assistance should contact the Office of Student Life and Engagement at [student\\_life@rush.edu](mailto:student_life@rush.edu) or (312) 942-6302.

Students are also individually assigned academic advisers from their associated colleges who are knowledgeable about the student's educational program. These advisers provide assistance in curriculum selection, academic progression, and professional and career development.

## Publications

The Office of Student Life and Engagement oversees the publication of student-related materials, such as the Rush University Student Handbook and the Online Picture Book. Both the Student Handbook and the Online Picture Book are accessible on the Rush University Portal.

## Student Lounge

The Student Lounge, located on the north end of the ninth floor of the Armour Academic Center (Room 992), is equipped with couches, a flat-screen television, an email workstation, tables and chairs, a multifunction printer/copy machine and a kitchen (refrigerators and microwave ovens). All students are invited and encouraged to use the facilities of the lounge. A student ID proxy card mechanism located in the west corridor by the back door allows students 24-hour access to the lounge via Room 984.

## Student Lockers

During orientation, Student Life and Engagement will assign lockers for the storage of coats, books and other miscellaneous articles. Students who keep a change of clothing in their lockers should use the restrooms as changing rooms.

Lockers are located throughout the Armour Academic Center, and most lockers are shared with another student. Be advised that Rush University assumes no responsibility for the loss of personal property from lockers. If any difficulties arise with a locker, contact the Office of Student Life and Engagement, located in the Armour Academic Center, Room 984.

## Student Organizations

The Office of Student Life and Engagement recognizes the interests and goals of each student organization through administrative and limited financial support. Students who wish to establish a new organization are encouraged to stop by the office and speak with a staff member.

Currently, there are more than 35 active organizations, including the RU Student Senate, American Medical Student Association, the Graduate College Student Council, National Student Speech Language Hearing Association, Rush Medical College Student Council, Rush Muslim Students' Association, RU Student Nurses Association and the Student Occupational Therapy Association. A full listing and descriptions of all approved organizations can be found on the Student Life and Engagement involvement webpage.

## Voter Registration

Voter registration materials are available through the Office of Student Life and Engagement, located in Armour Academic Center, Room 984. Voter registration can also be completed online at [www.cookcountyclerk.com/agency/register-vote](http://www.cookcountyclerk.com/agency/register-vote). Voter registration materials allow students to vote in local, state and federal elections.

## Rush Community Service Initiatives Program

The mission of the Rush Community Service Initiatives Program, or RCSIP, is to provide community-based volunteer experiences for Rush students. These experiences enhance our students' ability to work in interprofessional teams, develop patient relationships, care for diverse populations and provide targeted services based on community need.

RCSIP achieves its mission through the following:

- Aligning volunteer experiences with the findings from the Rush Community Health Needs Assessment
- Developing community programs that align with Rush's community implementation plan
- Providing appropriate support and training for student volunteers
- Accessing the outcomes of community programs
- Evaluating the effects of community service experiences on the personal learning and development of the students

For additional information please contact:

Sharon Gates  
Senior Director, Community Engagement  
(312) 942-3670  
[Sharon\\_Gates@rush.edu](mailto:Sharon_Gates@rush.edu)

## Rush Production Group

Rush Production Group is an award-winning multimedia department specializing in professional photography, videography, motion graphics and podcast production. In tandem with Rush Marketing and Communications, the Production Group works to effectively visualize and execute the new Rush University System for Health brand. Their photographs and diverse videos can be seen on the Medical Center and Rush University websites, e-newsletters such as Rush News and Inside Health, social media posts and on the University campus monitors. Their photographers handle headshots for all Rush University Medical Center and Rush Oak Park medical staff, as well as Rush University faculty.

Visual content is created for consumer marketing and publicity; photos and videos are utilized for patient education and testimonials, events, people profiles and staff recruitment. In addition, content is created for Rush University college department curriculums, events, student profiles and student recruitment.

The Production Group is also closely involved in publicizing the myriad Anchor Mission outreach programs being undertaken by Rush. It is also producing a new podcast called The Rush Cast. In addition to serving the needs of the Medical Center, Rush University and Rush Oak Park Hospital, the Production Group is expanding its services to Rush Copley Medical Center and other sites throughout Rush University System for Health. The group does not have the resources to videotape classroom lectures or most university speaking events in the Searle Conference Center. For those seeking class recording, please call the METC at (312) 942-6799. For recording in a Searle meeting room, call Omar Martinez at (312) 942-5000.

You can make headshot appointments online at [booknow.appointment-plus.com/yq264gyx](http://booknow.appointment-plus.com/yq264gyx).

If you have a request for a non-headshot photo or a video, please download and complete the Questionnaire for Photo/Video Proposals in the Document Library on Inside Rush and email it to [RushProductionGroup@rush.edu](mailto:RushProductionGroup@rush.edu). For additional questions, call (312) 942-8278.

## Student Identification Cards

Rush students are required to wear their student ID card at all times while on campus. Students not wearing a valid student ID card may be asked to leave the University or Medical Center and related clinical sites. A valid student ID card is needed to access and use the library, laboratories, bookstore and student lounge, and is required for admission to some school events.

The student ID card is valid only while the student is enrolled at Rush University and is immediately deactivated upon graduation, withdrawal or dismissal from the University. Students must return their ID card to the Office of the Registrar upon separation from the University.

New students who attend a formal orientation program will be issued their ID card during the orientation. Otherwise, new students can request an ID card from the Rush Security Office starting the Friday before the term of matriculation.

The Armour Academic Center building opens at 5:30 a.m. and is locked at 7 p.m., Monday through Friday. On Saturday, the building opens at 8 a.m. and is locked at 1:30 p.m. The building is closed on Sundays and holidays. The opening and closing times may change if there is a special event in the building or a special request is made. Visitors may enter Rush through the main visitor entrance in the Atrium Building and request a visitor pass.

In order to make it easier for students to enter the Armour Academic Center after the building has been locked at night, and to utilize new and extended-hour study spaces, there is a card reader on the ground floor of the Armour Academic Center near the bookstore. Rush student, faculty and employee ID cards are accepted by the card reader.

The Rush Security Office is open for ID card replacement on the following days:

Monday	1-4 p.m.
Tuesday	9 a.m. - noon
Wednesday	7:30-10:30 a.m.
Thursday	1-3 p.m.
Friday	7:30-10:30 a.m.

## Student Identity Access Management and Email Accounts

Rush University creates Rush access and email accounts for all admitted degree-, certificate- and non-degree seeking students prior to their term of matriculation.

### Accounts

Account users are assigned a unique username, which is associated with only one individual with a unique password. Users should update their passwords at [resetyournetworkid.rush.edu](http://resetyournetworkid.rush.edu). A generic sign-on used by groups of individuals is not allowed. Sharing a sign-on and password or the unauthorized access to another person's computer account is not permitted and can lead to disciplinary action up to, and including, dismissal.

Every Rush-affiliated user is responsible for every transaction originating from their computer account. Accounts that are not used for nine months may be deactivated by Information Services without notice.

Anyone engaging in unauthorized use, disclosure, alteration or destruction of data is subject to disciplinary action. Computer accounts may not be used in any manner that would be illegal or violate the following:

- Rush University Medical Center's Code of Conduct Policy
- Any Rush policy addressing privacy or confidentiality, or the use or disclosure of patient, staff, physician, student or other data

### Emails

Students are expected to check their email account regularly since Rush University considers email an official means of communication. Often, students receive important news and deadlines via the campus email system. Students should also use their Rush email account to communicate with faculty and staff rather than using a personal email account.

If a student has a problem with their email account, they should contact Information Services at (312) 563-2527 or [3CLAS@rush.edu](mailto:3CLAS@rush.edu).

Graduates of Rush University will have access to their Rush email accounts for six months following their degree conferral. Students who voluntarily end their affiliation with the University prior to graduation maintain access for the remainder of the term in which the separation occurred. Students who are dismissed or administratively withdrawn are not guaranteed to maintain access for any period of time.

Students who remain employed by the Rush University System for Health following separation from the University will continue to have access to their email accounts.

Rush University Medical Center has the right to assign, reassign or terminate any individual's access to electronic communications, information systems or networks, and take disciplinary actions — up to and including dismissal — in response to any negligent or deliberate misuse thereof. Email belongs to the recipient. A user's mailbox is treated in the same manner as any other file belonging to that user.

Information proprietary to Rush University Medical Center may not be shared outside the organization without the approval of management. Patients' (HIPAA) protected information may qualify as a medical record and is considered confidential. Therefore, email related to patient care, treatment, therapy or testing should be incorporated into the patient's medical record or be encrypted. Rush University Medical Center is not responsible for the content of emails received.

Examples of actions that may be subject to disciplinary action include the following:

- Sharing account information, including user name and password
- Attempting to gain access to another user's password, user name or email account
- Attempting to read, delete, copy or modify the email of other users
- Posting email messages with sexually explicit images or language that may be construed as harassment, or disparagement of others based on a person's race, color, sexual orientation, gender identity and/or expression, religion, national origin, ancestry, age, marital or parental status, disability as defined by Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, Americans with Disabilities Act Amendments Act of 2008, veteran's status, pregnancy or any other category protected by federal or state law or county or city ordinance
- Spamming

## University Facilities

University Facilities, located on the seventh floor of the Armour Academic Center (Room 720), provides a variety of services to the patrons and users of the Armour Academic Center, including building maintenance and scheduling repairs.

Additionally, University Facilities analyzes and allocates space, accommodates lab and classroom setup, oversees the Housekeeping group (DFS) and day-to-day classroom operations (3-CLAS). For questions, please email [University\\_Facilities@rush.edu](mailto:University_Facilities@rush.edu) or call (312) 942-8631.

## Worship Opportunities

The Department of Religion, Health and Human Values provides weekly opportunities for worship in the J. Hall Taylor Memorial Chapel, located on the first floor of the Kellogg building near elevator C, as well as special services on faith-group holidays. A meditation room, available at all times as a refuge for the spirit, is located in the fourth floor Atrium Lobby.

A directory of churches in the area is available by calling the Department of Religion, Health and Human Values at (312) 942-5571. Chaplains are available for consultation about professional and personal issues.



## Rush University Academic & University Policies

### Academic Policies

- Academic Honesty
- University Student Code of Conduct
- Student Complaint Policy
- Rush University Honor Code
- Inappropriate Degree Usage
- Continuous Enrollment/Active Student Status
- Credit by Proficiency
- Academic Credit
- Grade-Point Average
- Grade Report
- Graduation and Commencement
- Grading and Numbering System
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## Academic Policies

### Academic Honesty

Rush University students and faculty belong to an academic community with high scholarly standards. As essential as academic honesty is to the trust that is fundamental to the educational process, academic dishonesty violates one of the most basic ethical principles of an academic community and will result in sanctions imposed under the University's disciplinary system.

Examples of conduct that would subject a student to disciplinary action include but are not limited to the following: all forms of academic dishonesty including but not limited to cheating; plagiarism; collusion; gaining or seeking unfair advantage in relation to any work submitted; helping others to gain an unfair advantage; removing examination materials from a secure examination area; the unauthorized downloading or copying of examinations that are given online; fabricating assigned academic work, including clinical assessments and presenting them as authentic; facilitating academic dishonesty; and unauthorized examination behavior.

- **Academic Misconduct** refers to any academic behavior that is in violation of the policy stated below.
- **Plagiarism** refers to any attempt by students to use the work, words or ideas of others without proper attribution, or any attempt to pass off the work, words or ideas of others as their own. Such acts are considered plagiarism whether they occur intentionally. Acts of plagiarism include but are not limited to the following:
  - Presenting any phrase or extracts, verbatim, without using quotation marks and without any reference to the author
  - Paraphrasing all or part of an author's work and presenting it without any, or with inadequate, reference to the author
  - Copying or paraphrasing all or part of another student's work or otherwise presenting another student's work as their own
- **Collusion** is an agreement or cooperation in order to cheat or deceive for a fraudulent purpose. Collusion applies to students (past, present and future) who intentionally cooperate in order to gain an unfair advantage in the gaining of an award, qualification or grade
- **Cheating** is using unauthorized materials, including electronic devices, or obtaining unauthorized help from another person in any work submitted for academic credit
- **Fabrication** is inventing information or citations in an academic or clinical exercise

- **Facilitating academic dishonesty** is providing unauthorized material or information to another person
- **Unauthorized examination behavior** is, for example, conversing with another person, passing or receiving material to or from another person, temporarily leaving an examination site to visit an unauthorized site or without permission, or manipulating the physical or electronic testing environment to unfair advantage. These examples are not inclusive of all possible unauthorized examination behaviors

Disciplinary actions will be imposed by the program/college, including but not limited to warning, probation, suspension or expulsion from the University on those members of the learning community who violate the Academic Honesty Policy.

### University Student Code of Conduct

Rush University provides outstanding health sciences education and conducts impactful research in a culture of inclusion, focused on the promotion and preservation of the health and well-being of our diverse communities.

All students enrolled at Rush University are expected to uphold the I CARE values of Innovation, Collaboration, Accountability, Respect and Excellence.

The Rush University Student Code of Conduct sets the standards for expected professional behavior within the University and the Medical Center. Commitment to this Code is a shared responsibility of all faculty, staff and students within the Rush University community to ensure the highest standards of behavior — whether in the classroom, the laboratory, or in the clinical setting — and to ensure that education obtained at Rush provides a sound foundation for each student's future success as an academic, scientific or health care professional.

The Student Code of Conduct provides the framework for how students should conduct themselves as members of the academic learning community. At Rush University, we value and support freedom of expression in a manner that is civil and respectful to others.

Examples of conduct that would subject a student to disciplinary action include but are not limited to the following:

- Obstruction or disruption of teaching, research, administration, clinical practice and community outreach or other University or Medical Center activities
- Falsification of student records, transcripts or financial aid forms or applications
- Theft of, or damage to, University or Medical Center

property or the property of a member of the University or Medical Center community

- Threatened or physical abuse of any person, or action that threatens or endangers the safety of others
- Misrepresentation, falsification, alteration or misuse of University or Medical Center documents, records or identification, or research data
- Unauthorized use or entry of University or Medical Center facilities
- Conviction of a crime deemed serious enough to render the student unfit to pursue their profession
- Conduct that is inconsistent with the ethical code of the profession the student is preparing to enter
- Unlawful use or possession of controlled substances on the University or Medical Center campus
- Unauthorized possession or concealment of firearms or other weapons on the University or Medical Center premises at any time
- Attempting to gain access to another's email or computer account, username or password
- Knowingly setting off false fire, safety or security alarm
- An accusation of student and/or faculty academic dishonesty or misconduct made in bad faith

### Student Code of Conduct Violation Enforcement

Any violations of this Student Code of Conduct or suspicion of student or academic misconduct should be reported to the student's college for further review in accordance with the procedures specified by the college. Each college will be expected to set standards for addressing Student Code of Conduct violations and cases of misconduct in a fair and consistent manner that best fits their respective student population. Adherence to the Student Code of Conduct is required upon matriculation. The Student Code of Conduct may also be enforced for off-campus actions when the student is representing themselves as a member of the University.

**Good Standing** - A student who has upheld the guidelines of the Student Code of Conduct and has not been found in violation of the policy resulting in either probation, suspension or expulsion.

### Student Conduct Sanctions

In determining appropriate sanctions when violations of the Student Code of Conduct occur, the college will use

the current case as well as any past disciplinary infractions that were upheld. Disciplinary sanctions will be determined by reviewing the statements and interest of the complainant, the respondent and the impact that the infraction may have on the University community. The college will take into consideration the severity of the complaint, the safety of the respondent, University community and any other relevant factors when imposing sanction. The following list of sanctions is not considered an exhaustive list, but a guide to follow when determining the appropriate sanction for the violation.

**Warning** - A written notification that a violation of the Student Code of Conduct occurred and that any further responsible finding of misconduct may result in more severe disciplinary action. A warning is noted for administrative purposes and is not considered a part of the student's disciplinary record. In addition, a warning does not adversely affect a student's standing.

**Probation** - A written notification of reprimand that the matter is serious and in violation of the Student Code of Conduct. Probation is for a designated period of time and may include more severe sanctions, if found responsible for additional violations of the Student Code of Conduct, including suspension or expulsion from the college. Notification of probation is considered a change in good standing status with the college/University and the student(s) may be restricted from participating in other college or University activities.

**Loss of privileges** - Denial of the use of certain college facilities or the right to participate in certain activities, events, programs or to exercise certain privileges for a designated period of time.

**Restitution** - A student may be required to make payment to an individual, the college or the University related to the misconduct for damage, destruction, defacement, theft or unauthorized use of property.

**No Contact Restrictions** - Are those set by the college administrator, University administrator and director of Security that the party is restricted from having contact whether direct or indirect with a designated party. These restrictions may include indirect or direct contact such as email, texting, U.S. mail or any other contact via a third party.

**Educational Requirements/Referrals** - The college reserves the right to impose counseling or substance assessments or other required educational sanctions.

**Suspension** - The separation of a student from the college for a specified period of time, after which the student is eligible to return. The suspension letter will include all of the conditions that must be met before a student is reconsidered for readmission.

Students who are on suspension may not participate in any college and/or University sponsored activities both on campus and offsite that are owned or operated by Rush University and Rush University Medical Center.

**Expulsion** - Expulsion is the permanent separation of the student from the college and their academic program and all educational activities sanctioned by Rush University.

### Student Complaint Policy

Rush University embraces a philosophy of respect and accountability as supported by the I CARE values (Innovation, Collaboration, Accountability, Respect and Excellence). Rooted in these I CARE values, the Student Complaint Policies and Procedures are meant to balance a supportive and equitable process to assist students with submitting complaints. According to the Higher Learning Commission Institutional Records of Student Complaints (HLC, 2018), *“An institution shall make available an account of the student complaints it has received, its processing of those complaints, and how that processing comports with the institution’s policies and procedures on the handling of grievances or complaints.”*

To this end, the University strives to provide a seamless complaint process experience by making available to the student body a convenient online complaint submission process and a toll-free hotline phone number through the NAVEX Global Student Complaint Portal\* (hereafter “Student Complaint Portal”). The Student Complaint Portal and Hotline offers students a confidential as well as an anonymous mechanism to submit their complaints.

The University’s Student Complaint Policies and Procedures should:

1. Provide clear instructions on how to submit a formal student complaint
2. Distinguish the various types of student complaints, (i.e., examples of academic versus non-academic complaints)
3. Provide a list of external agencies to report student complaints

*\*NAVEX Global is a third-party hosted resource with secured servers and is not hosted by Rush University.*

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Rush University endeavors to provide an environment where student concerns are addressed and resolved in a manner that fosters both respect and equality. The University

encourages students to seek informal and formal procedures to allow students the flexibility to adjudicate their complaints, depending on the nature or seriousness of the complaint(s). No retaliation or reprisal shall be tolerated against a student for submitting, in good faith, a complaint either on an informal or formal basis.

All student complaint submissions will be kept confidential to the extent possible to provide thorough investigations, maintain campus safety and to ensure compliance with federal, state or local policies. Submission of complaints through the Student Complaint Portal are not meant to override any existing policies or procedures such as grade appeals, student professionalism code of conduct, Title IX, Discrimination and Harassment or any policy established by law or the university. The Student Complaint Portal is designed to work interdependently with existing student policies and procedures. Students are encouraged to file their complaint as soon as possible to ensure that all practical information is collected and available to resolve and improve the student’s experience.

### Student Complaint Portal: Process of filing a complaint

1. When a student files a complaint through the Student Complaint Portal or through the Student Complaint toll-free call center, the student will receive a unique user name and are asked to choose a password. Please see link to the Student Complaint Portal.
2. Students can return to the Student Complaint Portal again either by internet or telephone and access the original report to add more detail or answer questions posed by a university representative to further help resolve any open issues.
3. Once a complaint is filed through the Student Complaint Portal, the University will review or refer the complaint to determine the appropriate follow-up. At all times, the complaint will be kept confidential to the extent possible to allow for proper investigation. Only individuals with legitimate reasons will have access to the filed complaint.
4. If the student complaint is required to be referred to a specific contact person or process (i.e., Title IX or Grade Appeals), the student will be notified that the complaint has been referred to the appropriate area for further review and the complaint will be facilitated through that specific process. However, the student complaint ticket will remain open until the complaint has been finalized and closed.
5. If a decision is not rendered after progressing through the appropriate steps, leadership of the specific area will be

notified for additional review unless an existing policy dictates a different course of action. Students also have the right to file a formal complaint with external accrediting or regulating agencies affiliated with Rush University if they believe that this matter was not resolved in earnest. Links to these accrediting and regulatory agencies are listed in this policy.

6. A submission of a formal student complaint can be anonymous or non-anonymous. Anonymous complaints will be investigated to the degree that the institution has enough information to proceed with an investigation.
7. All non-anonymous complaints should contain the following information:
  - The student complainant should include their name, student identification number and contact information, including telephone number and email address, on the form.
8. All complaints should contain the following information:
  - The name of the alleged student, employee, faculty, department, etc., involved in the complaint
  - A detailed written statement that describes the nature of the complaint, including the date, day, approximate time and location of the occurrence.
  - The date of submission of the complaint will be documented in the Student Complaint Portal.

### Informal Resolution

Students should begin the informal process by addressing their complaint directly with the staff, faculty or other students involved with the complaint. (Note: This requirement does not apply to alleged cases of harassment, violence, sexual misconduct, discrimination or situations that are governed by the University Academic Honesty Policy).

### Formal Resolution

In the event the student is not able to resolve their complaint through informal means, the student should file a formal written complaint using the Student Complaint Portal or by reporting their complaint through the Hotline. The University will review all complaints submitted through the Student Complaint Portal.

*\*Academic Complaints (non-exhaustive)*

### Harassment and Discrimination

Rush University promotes and maintains an environment that emphasizes the dignity and worth of every member of its community, free of unlawful discrimination, including

the prevention of harassment and sexual misconduct. Rush University’s prohibits sex discrimination, sexual harassment and sexual misconduct involving students. Students should report these type of incidents to the Title IX Coordinator, and follow the procedures in the Prohibition Against Sex Discrimination, Sexual Harassment and Sexual Misconduct Involving Students Policy.

Nancee B. Hofheimer  
Title IX Coordinator  
Rush University Medical Center  
(312) 942-2104

### Disruptive Conduct/Behavior Complaints Against Staff, Faculty & Other Students

The Code of Conduct sets the standards for expected professional behavior within the University and the Medical Center. Commitment to this Code is a shared responsibility of all faculty, staff and students within the Rush University community to ensure the highest standards of behavior — whether in the classroom, the laboratory, or in the clinical setting — and that education obtained at Rush provides a sound foundation for each student’s future success as an academic, scientific or health care professional. Violations of these standards are subject serious and disciplinary sanctions. Students witnessing this type of behavior are encouraged to file a complaint via the Student Complaint Portal.

Rush University makes every effort to review and resolve all student complaints that are reported in accordance with policies and procedures. There may be occasions under certain circumstances where the student believes that further action is required and that additional external review is needed to resolve their complaint. Listed below are external agencies that the student may contact for additional assistance. For other state authorization agencies please refer to the links listed below.

### Rush University Honor Code

The Rush University Honor Code is as follows:

*I pledge that my academic, research and/or clinical work will be of the highest integrity. I shall neither give nor receive unauthorized aid; I shall not represent the work of others as my own; I shall not engage in scientific misconduct, and I shall treat all persons with the greatest respect and dignity, just as the ethical codes of Rush University Medical Center and my future profession demand.*

*I recognize that behaviors that impede learning or undermine academic, research and clinical evaluation - including*

*but not limited to falsification, fabrication and plagiarism - are inconsistent with Rush University values and must be reported.*

### Implementation of the Honor Code

This Rush University Honor Code (from now on referred to as the Code) sets the standards for expected professional behavior within the University and the Medical Center. Commitment to this Code is a shared responsibility of all faculty, staff and students within the Rush University community to ensure the highest standards of behavior — whether in the classroom, the laboratory or in the clinical setting — and to ensure that education obtained at Rush provides a sound foundation for each student's future success as an academic, scientific, or health care professional.

### Code Enforcement

Annually, all students have the opportunity to attest to their commitment of the Code during the completion of annual mandatory trainings within the learning management system. Any violations of this Code or suspicion of student or academic misconduct should be reported to the student's college for further review in accordance with the procedures specified by that college. Each college will be expected to set standards for addressing Honor Code violations and cases of misconduct in a fair and consistent manner that best fits their respective student population. Students refusing to sign the Code attestation must submit a letter to their dean's office explaining why. Adherence to the Code is required for matriculation, whether or not the document has been signed. The Code may also be enforced for off-campus actions when the student is representing themselves as a member of the University.

### Inappropriate Degree Usage

A student may not indicate they have earned a specific degree or certificate from Rush University until the following have been fulfilled:

- All degree or certificate requirements have been successfully completed
- Completed Degree Approval and Intent to Graduate forms have been submitted to the Office of the Registrar
- The official date of graduation for a particular term has been reached
- The degree or certificate has been officially conferred by the Office of the Registrar

A student who disregards this policy will be referred to the committee that addresses professional ethics violations for that student's program or college.

### Continuous Enrollment/Active Student Status

In order to maintain an active status, Rush University requires continuous enrollment in the majority of its academic programs from the time a student matriculates through a student's graduation. Exemptions for the summer term only include Health Systems Management and Clinical Research majors. Students who are not officially enrolled each term or have not submitted a Petition for Leave of Absence or Voluntary Withdrawal form risk being administratively withdrawn from the University by the Office of the Registrar.

A student enrolled in a noncredit residency or academic enrichment program prior to receipt of a degree must be registered for their program's Continuous Enrollment course to retain active student status.

Any degree- or certificate-seeking student not enrolling in a new course but needing to replace an outstanding incomplete grade must register for their program's Continuous Enrollment course until the grade is satisfied.

A student who is auditing a course and is not allowed in other courses during the same term must register for their program's Continuous Enrollment course to be charged appropriately.

### Credit by Proficiency

A student who passes a proficiency examination at Rush University will earn academic credit toward the degree. Programs have the discretion to offer credit by proficiency (e.g., standardized examinations, such as ACT Proficiency Examination Program (PEP) Challenge or Advanced Placement (AP) exams) and/or achieved prior learning (such as continuing education units). Rush Medical College does not offer credit by proficiency.

Credit awarded by proficiency and/or achieved prior learning is based on documented equivalence with courses offered by the program. The minimum standards and format for demonstrating proficiency are determined by program faculty. Formats for demonstrating proficiency may include departmentally-developed examinations, licensure/certification exams, portfolios and competency demonstrations.

Credit awarded by proficiency and/or achieved prior learning will equal the credit value of the course(s) as listed in the Rush University Catalog under which the student matriculated. Information that is posted on the transcript for approved credit is the prefix, number and title of the course, the credits awarded and a K grade.

Credit awarded by proficiency will appear on the transcript in the appropriate term the credit was earned. Credit for achieved prior learning will appear on the transcript in the student's term of matriculation. Credit earned by these mechanisms will not be used in calculating the student's grade-point average.

The student's program reserves the right to assess a fee or partial tuition based on what the student would have been charged.

### Academic Credit

Academic credit is awarded to a student upon the successful completion of an approved instructional course or by the demonstration of competencies, proficiencies, or fulfillment of learning outcomes equivalent to that provided by an approved instructional course.

One unit of academic credit is the measure of the total time commitment a typical student is expected to devote to learning per week of study.

Total time devoted to learning includes but is not limited to: classroom or faculty instruction in either a synchronous or asynchronous mode; time devoted to individual conferences with instructors; reading and completion of learning activities and assignments; posting in online discussion folders; performance demonstrations; examinations; work associated with completion of capstone assignments, thesis, or Policy Statement:

Academic credit is awarded to a student upon the successful completion of an approved instructional course or by the demonstration of competencies, proficiencies, or fulfillment of learning outcomes equivalent to that provided by an approved instructional course.

One unit of academic credit is the measure of the total time commitment a typical student is expected to devote to learning per week of study.

Total time devoted to learning includes but is not limited to: classroom or faculty instruction in either a synchronous or asynchronous mode; time devoted to individual conferences with instructors; reading and completion of learning activities and assignments; posting in online discussion folders; performance demonstrations; examinations; work associated with completion of capstone assignments, thesis, or dissertations; laboratory work; clinical practice; or any other activity required of the student.

One hour of credit is an amount of work represented in intended learning outcomes and verified by evidence of

student achievement that reasonably approximates not less than one hour classroom or direct faculty instruction and a minimum of two hours of out of class student work each week for approximately 15 weeks for one semester or one trimester hour of credit or the equivalent of at least 37.5 hours of work for one semester or one trimester hour of credit. In this context, an hour of work is defined as 50 minutes.

### Exceptions: Course credit hours are not calculated for Rush Medical College.

#### Rush Medical College (RMC):

Rush Medical College uses weeks of instruction to measure student credit, which can be converted to credit hours using the criteria below.

The RMC medical program is accredited by the Liaison Committee on Medical Education (LCME), an accrediting program review body for medical programs in the United States and Canada. LCME requires all accredited medical education programs leading to the Doctor of Medicine (MD) to include a minimum of 130 weeks of instruction. RMC's curriculum requirement of 164 hours of instruction over four years exceed those as outlined in the LCME Standards of Accreditation of Medical Education Programs leading to the MD degree. The conversion for instructional weeks to credit hours is as follows:

Courses in the first two years of the Rush Medical College curriculum are a uniform structure for educational experiences and contact hours. These contact hours comprise small group learning experiences, laboratories, simulated and real patient encounters. The RMC curriculum is presented in a flipped methodology with a minimum requirement of 2 hours of outside-of-class preparation for each hour of classroom instruction.

In the pre-clerkship curriculum, the average contact time for students each week is approximately 14 hours. Based on a 16 week calendar (8 weeks in the summer for M1) and a class time of 50 minutes, the equivalency of one pre-clerkship week is equivalent to one credit hour.

Year 1 = 40 full-time weeks (equivalent to 40 credit hours)

Year 2 = 32 full-time weeks (equivalent to 32 credit hours)

Total = 72 credit hours

In year three and four of the clinical experience, contact hours increase for clerkship and electives. Students earn the equivalent of one semester credit hour for each 40 – 70 contact hours of clinical experiences.

Year 3 = 48 full-time weeks (equivalent to 48 credit hours)

Year 4 = 44 full-time weeks (equivalent to 44 credit hours)

Total = 92 credit hours

### Grade-Point Average

Transfer credits from institutions outside of Rush University are not included in the grade-point average, or GPA, calculation. Transfer credits internal to Rush University are included in the GPA calculation. Separate GPAs are calculated for a student's undergraduate and graduate records. The GPA is calculated using all grades in courses that could count toward the program. The GPA is reset from 0.00 when a student successfully completes a program and matriculates into a new program at the graduate or professional level. Transcripts show the GPA for each term in which grade points are earned and show a cumulative GPA for all work taken at Rush University for each program degree level.

When a course is repeated, only the most recent attempt is computed in the GPA, though all grades will display on the transcript.

No grade points are assigned for work taken on a pass/no-pass basis, and therefore such work is not computed in the GPA. A GPA is not reported for Rush Medical College students.

Undergraduate students who are required to enroll in courses that typically are taught at the graduate level will have these courses count toward their undergraduate programs of study; thus, the credits and grade points will be calculated as part of the undergraduate transcript.

### Grade Report

Students can access their grade report/unofficial transcript via the Rush University Portal. Grade reports are not mailed to students. Copies of a student's grade report are unofficial and intended for the student's personal use and should not be accepted by another college/university in lieu of an official transcript.

### Graduation and Commencement

Only Rush University students who are candidates for a degree may participate in the commencement ceremony. Certificate candidates are ineligible to participate in commencement. Although Rush University has established a degree conferral date for each term, the University has only one commencement ceremony. **Commencement** is the official ceremony honoring the graduates of the academic year.

**Graduation** is the official date on which the student's degree is conferred.

All degree seeking students are invited to participate in the commencement ceremony if they graduated in the fall or spring term immediately preceding the current academic year's ceremony.

**Students who are not required to complete a thesis or dissertation** may participate in the current academic year's commencement if they anticipate graduating at the end of the summer term that immediately follows the ceremony.

**Students completing a thesis** must be prepared to defend, per their program director, by Week 12 of the spring term in order to participate in the current academic year's ceremony. Those students who will defend after this period or during the summer term after commencement are invited to participate in the following year's ceremony.

**Students completing a dissertation** must have successfully defended during Week 11 of the spring term and submitted a final copy of their dissertation to the Rush University Medical Center Library or Rush University Center for Academic Excellence during Week 13 of the spring term in order to participate in the current academic year's ceremony. Those students completing their dissertations during the summer term after commencement are invited to participate in the following year's ceremony.

PhD students completing a dissertation must provide the title of their work to the Office of the Registrar by the published deadline in order to have that title included in the commencement program.

Publication of a student's name, academic credentials and dissertation/thesis title in the commencement program does not indicate that a degree has been officially conferred by Rush University.

Students must be registered for the term in which they graduate.

All students, including certificate seekers, who anticipate graduating **must submit the Intent to Graduate form to the Office of the Registrar, via the Rush University Portal, by the published deadline or risk delayed graduation.**

College program directors/coordinators are required to complete and submit the degree approval forms to the Office of the Registrar by the published deadline for non-thesis/dissertation students or risk delayed graduation of students. College program directors/coordinators are required to initiate the degree approval forms for thesis/dissertation

### Grading and Numbering System

Grade	Points	Description
A	4.0	Excellent
B	3.0	Good
C	2.0	Satisfactory for undergraduates, but may not be acceptable at the graduate level.
D	1.0	Minimal pass for some undergraduate programs, but may not be acceptable at graduate level; not used at the graduate level by the College of Nursing, the Graduate College or the Department of Health Systems Management.
F	0	Failure
P	0	Passing
N	0	No Pass
HP	0	High Pass (only used by Rush Medical College for third- and fourth-year clinical courses)
H	0	Honors (only used by Rush Medical College for third- and fourth-year clinical courses; discontinued for first-year basic science courses in 2017 and for second-year basic science courses in 2018)
DE	0	Pre-clerkship deferred grade for medical students who do not yet meet the knowledge and performance components standards after the first attempt.
W	0	Withdrawal in weeks two through 13 of a term; also used by Rush Medical College when circumstances beyond students' control prevents completion of course requirements regardless of withdrawal date during the term.
K	0	Credit earned through proficiency examination or achieved prior learning.
T	0	Credit accepted in transfer from another college or university.
CIP/IP	0	Course in progress or grade not yet reported.
I	0	Incomplete
CC	0	Course continues into the next term. Grade received at end of series is grade for entire course.
AU	0	Audit
XIP	0	Mandatory training course completion is in progress
XX	0	Participation in an ungraded course or residency
XC	0	Satisfactory completion of mandatory training course
XN	0	Administrative enrollment error. Student removed from mandatory training course.
XS	0	Student separated from the University prior to completing the mandatory training course.

students. Thesis/dissertation students will retrieve remaining degree approval form signatures and submit the forms to the Office of the Registrar by the published deadline or risk delayed graduation.

The student's submission of the Intent to Graduate form signals that the student is ready to graduate; allows, only for purposes of the ceremony, the release of directory information restrictions enacted by the student through their signature on the Directory Information Restriction form; permits release of the student's name and address to the external photography vendor with whom Rush contracts and to have the vendor place photographs of the student on its website;

permits the University to publish the student's picture in a picture composite; for medical students, permits publication of the student's name, photograph, prior degrees and universities/colleges attended in the Rush Medical College yearbook; permits Rush University to print and/or announce the following:

- Student's name as indicated on the Intent to Graduate form
- Honors or awards received
- Previous colleges/universities attended
- Prior degrees earned

The Degree Approval form must be submitted after all academic degree requirements are completed. These include the following:

- All program prerequisites, including general education requirements
- All courses required in the major program of study and completion of required cumulative credit hours
- Residency requirements
- Dissertation/thesis/project defense (if required)
- Submission of the dissertation/thesis to the Rush University Center for Academic Excellence (if applicable)
- Achievement of the minimum cumulative GPA of 2.0 for undergraduate and 3.0 for graduate students (not applicable to Rush Medical College)

### Awarding of Degrees

Rush University degrees are dated the last day of the term in which the degree requirements are completed. Degree requirements must be fully met before the next term officially begins; otherwise, the student will be required to register for the subsequent term and will graduate at the end of that term. The student's transcript, diploma and other notification of degree conferrals will be held until a student's financial obligation has been met. Outstanding financial obligations have no effect on the awarding of degrees.

### Latin Honors

Candidates for the Bachelor of Science degree who have demonstrated academic excellence are honored at commencement by the Rush University faculty. Those earning a 3.40 to 3.59 cumulative grade-point average at Rush are awarded the Bachelor of Science degree cum laude; 3.60 to 3.79, magna cum laude; 3.80 to 4.00, summa cum laude. Only Rush University courses are calculated into the GPA. Latin honors appear on the student's transcript and diploma and are typically announced during graduation exercises, including the commencement ceremony and at college/departmental convocation/awards ceremonies. Latin honors also appear in the commencement ceremony program. Here, eligibility is as of the end of the fall term; prospective spring and summer graduates have their honors recalculated prior to their respective degree conferral dates.

### Thesis/Dissertation/Scholarly Project Requirements for Graduation

Doctor of Philosophy (PhD) candidates must complete a dissertation. The Doctor of Nursing Practice (DNP) program requires completion of a scholarly project. Some Master of

Science (MS) programs, including Clinical Research and Integrated Biomedical Sciences, require a thesis to meet degree requirements. The thesis is optional for Clinical Nutrition and Speech-Language Pathology students.

Each thesis/dissertation/scholarly project must be original and cannot have been used to meet the requirement of any other degree, either at Rush University or any other university.

Each student will have a committee whose role is to ensure that the student's thesis, dissertation or scholarly project is of high quality and meets the standards of the program and the University for originality, contribution to the field and scholarly presentation.

Review of a thesis/dissertation/scholarly project will follow the sequence of steps as described by each college, including the prescribed preparation manual for each degree.

Students must give a public presentation of the knowledge developed through the thesis, dissertation or scholarly project process to the academic community. Public presentation must precede the final approval by the student's thesis, dissertation, or scholarly project's committee.

A copy of the thesis or dissertation must be approved by the Center for Academic Excellence for conformance to publishing requirements and copyright compliance. Scholarly projects are not reviewed by the library.

### Health and Immunization Requirements

All students present on the Rush University Medical Center campus at least once annually from Oct. 1 to March 31 must be compliant with the influenza immunization program as defined by the Rush Infection Prevention and Control Department.

Program-specific health and immunization requirements are determined by each college and/or academic program:

- Students are notified at the time of admission by the college or program of the health and immunization requirements for matriculation into the University.
- Students must comply with annual health and immunization requirements.
- Students who do not submit the proper proof of fulfilled health and immunization requirements by the designated deadline will be prohibited from registering for the next term and may be disengaged from the program until these requirements are met. Late registration fees may apply.

- Students should be aware that clinical sites outside of Rush may have additional immunization requirements.

Students with medical and/or religious exemptions will be required to adhere to state and hospital policies concerning infection control.

### Incomplete Grades

The grade of incomplete (I) is given only when circumstances beyond the student's control prevent completion of course requirements and the student has received permission to defer completion of these unmet course requirements.

Students must be enrolled during the term in which course requirements are completed. Students enrolling only to complete requirements for a course in which a grade of incomplete was given must register for their program's Continuous Enrollment course for zero credit hours. Upon completion of the course requirements, the incomplete grade will be replaced by the final grade earned in the course.

A student receiving an incomplete grade in a course may not begin another course for which the incomplete course is a prerequisite. A student who fails to remove the incomplete grade within the specified time period will receive a final grade of F or N in the course. It is the student's responsibility to pursue the completion of an incomplete grade

Students in the College of Nursing, College of Health Sciences, the Graduate College and students-at-large typically must complete the unmet course requirements within one term after the term in which the incomplete grade was assigned, and not to exceed one calendar year, unless an extension is approved. Students in the College of Nursing may not register for new courses if they have two or more incomplete grades.

Rush Medical College students will be informed by the course instructor and the Office of Medical Student Programs regarding the specific time frame in which an incomplete grade must be resolved.

Additional college-specific policies may apply.

### Pass/No Pass Grading Option

Designated letter grade courses may be taken as pass/no pass based on approval by the course or program director. The pass/no-pass option is college- and course-specific, as is the proportion of courses that can be taken as pass/no pass. The decision to take a course for a pass/no-pass grade cannot be changed after the first Friday of a term.

### Repeated Courses

Some courses, such as research and clinical, may be repeated. These are usually indicated in the course description. All grades and grade points are counted in the GPA for these courses. For all other courses that are repeated, only the most recent grade is counted in the GPA. Both the original course and the repeated course appear on the student's transcript. Rush Medical College offers remediation opportunities for some courses; these attempts are reflected on the student's transcript, along with the original course.

### Room Reservations

The Office of the Registrar is responsible for assigning academic space, including classrooms, collaborative learning spaces, small-group/conference rooms, lecture halls, auditoriums, ballrooms, and testing labs, in the Armour Academic Center and Triangle Office Building. Space is limited and first priority is given to course-related activities.

To obtain space, the date and times of student events must first be approved by the Office of Student Life and Engagement and be sponsored by the organization's faculty advisor or the Office of Student Life and Engagement.

### Students-at-Large

Individuals who have not formally matriculated to a degree or certificate program, but who wish to enroll in a course, may apply to do so by completing the Student-at-Large application within the RUApplying Portal. Completing the application does not guarantee admission as a student-at-large. Each college determines which student-at-large applications are accepted or denied. Students applying to take graduate level courses must provide an official transcript from an accredited institution showing that they have earned a baccalaureate degree. Graduates of foreign institutions must have their transcripts evaluated by an approved evaluator of foreign transcripts (e.g., ECE and WES) and have an equivalent of a baccalaureate degree. Representatives from each college will contact their applicants directly to communicate a decision. The Office of the Registrar will administratively register all SAL applicants approved by their respective colleges.

Rush Medical College and clinical courses from all colleges are not available to students-at-large.

A final, transcribed grade will be assigned to any course taken as a student-at-large. Prospective students are responsible for being academically prepared for requested courses.

Current degree- and certificate-seeking students have enrollment priority over students-at-large. Students-at-large may



be removed from courses if degree- or certificate-seeking students need to enroll in them. Refunds will be issued if payment has already occurred.

A student may accumulate no more than 12 credit hours of academic credit as a student-at-large. These hours may be taken within one term or over a period of time. Registration as a student-at-large that results in more than the allowable number of hours in the student-at-large status can only be authorized by the dean or designee of the college offering the course(s).

Credit earned as a student-at-large will not necessarily apply toward a Rush degree or certificate program. If a SAL wishes to be admitted to a degree or certificate program, they must complete the formal application process.

Any incomplete (I) grade earned as a student-at-large will revert to a permanent failing grade (F or N) unless completed by the end of the next academic term. It is the student's responsibility to pursue the completion of an incomplete grade.

Each college determines the student-at-large application window for their courses being offered in a given term. Late applications will only be accepted if authorized by the dean or designee of the college offering the course(s).

If admitted and enrolled as a student-at-large, payment is due to the Office of Student Financial Affairs via the Rush University Portal by the end of the first week of classes of each term.

Rush employees seeking to use internal educational assistance benefits (EAB) should apply for tuition assistance by the Human Resources-designated deadline.

Students cannot be admitted to a Rush University degree or certificate program if they have a current probationary event as a student-at-large. Students who have already been admitted when a probationary event occurs will have their admission rescinded or be dismissed from the program. In order to be considered for admission, an applicant must be considered in good academic standing.

### Accounts Transcripts from Previous Institutions

As a part of the admission application process, Rush University requires final and official transcripts from all accredited institutions of higher education that a student attended, whether or not a degree was earned.

Rush University requires an independent evaluation of foreign credentials and transcripts, such as by ECE and WES, when a student completed coursework or a degree outside of the U.S. or Canada. Non-medical school graduates and

attendees from foreign institutions require course-by-course U.S. equivalency reports. Evaluations of other types will not be accepted. Applicants should not submit foreign transcripts in lieu of a foreign credential evaluation. International medical school graduates and attendees can provide proof of certification from the Educational Commission for Foreign Medical Graduates (ECFMG) in lieu of a course-by-course evaluation.

Individuals who apply using a Centralized Application Service, or CAS, should submit their final and official transcripts and/or foreign credential evaluations directly to the CAS.

Individuals who are taking prerequisite or other coursework not listed on their CAS application need to submit their final and official transcripts to the Rush University Office of the Registrar. NursingCAS applicants should submit all final transcripts directly to the CAS system.

Individuals who applied via CAS and did not have their degree conferred at the time of application must submit their final, official transcript, along with degree conferral information, to the Rush University Office of the Registrar. NursingCAS applicants should submit all final transcripts directly to the CAS system.

Non-CAS applicants must submit their official, final documents directly to the Rush University Office of the Registrar.

### Rush University Transcripts

Copies of academic transcripts can be obtained at no cost to students. The transcript is released only with written consent of the student or as consistent with legal requirements. Transcripts will not be released if the student has an outstanding financial obligation to the University.

Students may complete a transcript request form, which is available on the Office of the Registrar's webpage or by writing to the Office of the Registrar, Rush University, 600 S. Paulina St., Suite 440, Chicago, IL 60612. Students can also fax requests to (312) 942-2310. The letter or fax must include the handwritten signature of the student.

Copies of transcripts issued to students will be stamped in red ink as "Issued to Student." All transcripts bear the signature of the Rush University Registrar. Unofficial transcripts are not produced by the Office of the Registrar.

Transcript requests made by Rush Medical College students to support residency applications should be made to the Office of Medical Student Programs rather than to the Office of the Registrar. A Medical Student Performance Evaluation (MSPE) letter is included with these requests.

## Transfer Credit

### General Policies

Rush University will not accept transfer credit from non-accredited institutions. Only letter-graded courses are eligible for evaluation as transfer credit; pass/no-pass courses will not be considered.

An official transcript from the college or university where courses were taken must be available in the student's file to verify the course level and grade. Transcripts from foreign institutions must comply with the Transcripts from Previous Institutions policy.

Undergraduate-level courses cannot be transferred to meet the requirements of a course taught at the graduate level at Rush. Transfer credits can only be applied to satisfy the degree requirements of one program. Once applied, they cannot be used a second time for a new degree program. Previously earned program credits at Rush University may only be used to satisfy the requirements of another program if they are at the same level (e.g., graduate) and if they meet the current curricular standards.

The number of credits granted for a given course cannot exceed the number awarded for the course on the transcript of the school where the course was taken or the number earned for the corresponding course at Rush University. Credits earned on the quarter system will be converted into semester credits where applicable. A quarter credit is equal to two-thirds of a semester credit (e.g. three quarter-system credits equals two semester credits).

Course information from originating institutions, including grades, is not recorded on the student's transcript. The Rush University transcript will note the internal course equivalency, the number of credits accepted as transfer and a grade of T. The number of transfer credits is added to the student's cumulative total credits. However, transfer credits are not calculated in a student's grade-point average, GPA, calculation.

### Undergraduate-Level Policies

Rush University may accept up to 90 quarter hours or 60 semester hours of credit toward general education and other lower-level, undergraduate course requirements. General-education transfer credits are noted on student's Rush transcripts as blocks; one-to-one equivalencies are not presented.

Undergraduate courses must be completed with a C or better to be awarded credit.

## Graduate-Level Policies

Graduate-level transfer credit is subject to the approval of the major advisor, program or division director, or designated college administrator based on an evaluation of quality and equivalence. No more than one-third of the total number of required credits may be granted to a graduate-level student as transfer credit for work done at another graduate institution.

Graduate courses must be completed with a B or better to be awarded transfer credit.

## Enrollment

### Enrollment Status Definitions

Students working toward a degree or certificate and who are enrolled at least half-time may be eligible for student financial assistance. These students may also be eligible to have their federal educational loans deferred. Students are considered full-time or half-time each term based on the below credit criteria. Rush University students must be registered for one of the enrollment statuses below during any academic term to maintain an active student status. Students who are enrolled in externships or clinical work for less than nine credit hours may be considered enrolled full-time for credit hour purposes regardless of the amount of clinical work that is expected per credit hour.

	Full-time	Half-time
Rush Medical College students	All enrolled students are considered full-time	
Graduate students	9 credits	4.5 credits
Undergraduate students	12 credits	6 credits
Select student populations (dissertation-, thesis- or externship-completing students)	2 credits	1 credit

### Full-Time Status for Select Populations

PhD, professional doctorate, and master's students completing dissertations, externships or theses, respectively, may be considered full-time if they meet the following conditions each term:

- Register for nine or more graduate-level credit hours
- Or register for a minimum of two credit hours of dissertation, externship or thesis coursework

Students may register for additional courses as needed or that are required by their programs. However, if registering for less than nine credit hours, the term's enrollment must include a minimum of two credit hours in dissertation, externship, or thesis coursework to be considered full-time.

Students may register for additional courses as needed or as required by their programs. However, if registering for less than nine credit hours, the term's enrollment must include a minimum of two credit hours in dissertation, externship or thesis coursework to be considered full-time.

Individual graduate programs may set guidelines on research enrollments, including which academic milestones should be passed before enrollment in dissertation or thesis hours are permitted. Once students successfully defend their dissertation or thesis, no further research enrollments are necessary. Each student will be allowed one term of continuous enrollment to finalize all work related to the defense of their dissertation or thesis. During this term, the student should apply for graduation, and graduation should not be deferred beyond this point.

*Students with questions about their financial aid eligibility and enrollment status should contact the Office of Student Financial Aid.*

## Registration

### Adding/Dropping Courses

The first Friday of the term is the last day a course can be added through the Rush University Portal without instructor approval. A course dropped during the first week of the term will not appear on the student's transcript. After that date, one of the following applies:

- Course(s) dropped in weeks two through 13 of a term will be issued a grade of W for the course.
- Course(s) dropped after week 13 of a term will be issued a final grade for the coursework completed.
- No course may be dropped after the last day of classes or after a final evaluation of the student has been delivered. No withdrawals are allowed during the final examination period.

Rush Medical College students who want to change their clinical schedules must contact the Office of Medical Student Programs at least four weeks before the start of the scheduled rotation.

For additional information concerning tuition refunds, please refer to Financial Affairs: Tuition Refund Policy.

### Auditing a Course

A student wishing to attend a course without completing all the requirements for credit must register to audit the course with permission of the course and program directors. If space in class is limited, continuing and new students have priority.

Registration in a course cannot be changed from audit to credit or credit to audit after the first week of the term. A student who has audited a course may not apply for credit for that course at a later time.

Fees associated with auditing a course are listed in the Tuition and Fee Schedule.

Auditing of clinical courses is prohibited.

Auditing of courses with a laboratory component may be permitted with program director approval.

An auditing student:

- May participate in class discussion only at the invitation of the course director
- Is prohibited from taking examinations
- Is expected to attend class

An audited course will appear on the student's transcript with the designation of AU upon successful completion; credit hours are not assigned. If the student does not attend the class, a grade of W will be assigned.

Rush Medical College (RMC) does not allow students to audit RMC courses except with the permission of the Committee on Student Evaluation and Promotion (COSEP).

### Course Schedule

The course schedule is available on the Rush University Portal typically one week before the registration period begins. The Office of the Registrar will generally send an email announcement to students' Rush University email accounts regarding availability of the course schedule; new students will also receive this notification to their personal email accounts. Registration dates and deadlines are published in the academic calendar.

Changes to the course schedule, including updates to meeting times, instructors, classrooms and added/closed/canceled courses will be updated on the Rush University Portal.

### Independent Study

To register for an independent study course, the student's program coordinator, advisor, or program director will approve the proposed course and its objectives. The request

to create the independent study course should be sent to University Scheduling and include the instructor/course director, course title, course description, number of credit hours and grading system.

Once the course is created, the Office of the Registrar will contact the student's college to inform of the status of the course and the student's registration status.

Nursing students complete an independent study contract form, which is available on the Office of the Registrar's webpage. The form is used to identify the objectives of the study and a plan to meet those objectives is described. This form should be completed and approved by the preceptor, department chair and the program director no later than the first day of the term in which the independent study is to be taken. The student's preceptor keeps the contract.

Health Systems Management students also complete a separate independent study form, which is available in the Department of Health Systems Management.

### Registration Process

Classes are filled according to the following priority order:

1. Continuing students
2. New students
3. Students-at-large

It is the responsibility of new and continuing students in programs not participating in batch registration to register using the Rush University Portal each term during the designated registration period. Late fees may be applied to students who register or who are batch registered during the late registration period.

To register for any given term, no student can have a registration hold (i.e., missing transcripts, missing/out-of-date immunizations, insurance waivers, financial holds). If the hold is removed before the end of the registration period, the student can register without penalty. If the hold is not removed by the end of the registration period, the student will need to complete an add/drop form with the Office of the Registrar as soon as the hold is resolved; a late registration fee may be assessed.

Registration is complete only when tuition and other charges for the term are paid or satisfactory arrangements for payment are made. Tuition is always due on the first day of the term.

Students who register for a class and subsequently decide to withdraw without completing an add/drop, leave of

absence or voluntary withdrawal form will receive a failing grade (F or N) for that course.

### Batch/Administrative Registration

Some programs participate in batch, or administrative, registration. Students in these programs do not register themselves for classes in the Rush University Portal or utilize the add/drop form to make registration changes. Students should consult the portal to confirm the accuracy of their registrations.

## Withdrawal and Leave of Absence

### Administrative Withdrawal

Administrative withdrawal refers to a student's permanent, University-initiated departure from the University without the expectation of the student's return.

Rush University requires continuous enrollment in most of its programs from the time a student matriculates through a student's graduation. Students are required to either be registered each term or on an approved leave of absence. If the student has decided to withdraw from Rush, voluntary withdrawal paperwork must be submitted to the Office of the Registrar before the voluntary withdrawal will become official.

A student who is not registered, on an approved leave of absence or who has not submitted paperwork to voluntarily withdraw will be administratively withdrawn from the University at the end of the term in which the student stopped attending. The administrative withdrawal is posted to the student's transcript. Students wishing to return to Rush in the future need to apply for readmission.

### Voluntary Withdrawal

Voluntary withdrawal refers to a student-initiated, permanent departure from the University without expectation of the student's return.

After matriculation to Rush University, a student may not arbitrarily cease registration. All students are required to maintain continuous enrollment or risk administrative withdrawal due to unexplained nonregistration.

Any student withdrawing from the University must give formal notification by completing a petition for withdrawal or leave of absence form, which requires the student to obtain specific signatures. The Office of the Registrar is the designated office that a student must notify if withdrawing from the University. The petition for withdrawal or leave

of absence form may be obtained from the Office of the Registrar or online. The date when the student begins the withdrawal process is the official date used in processing the form.

Withdrawal forms submitted during the current term for the next term or during a break period will use the day after the end of the current term as the official withdrawal date that will be used for processing the form.

A student may not withdraw from classes during the last three weeks of any term. A student who submits a voluntary withdrawal form during the last three weeks of the term will receive grades in the registered courses.

Official withdrawal from the University entitles a student to a tuition refund from the first through the fifth weeks of the term. No other fees are refundable. The lower refund percentage is valid beginning the next Monday at midnight.

### Leave of Absence

After matriculation to Rush University, a student may not arbitrarily cease registration without notice. All students are required to maintain continuous enrollment or risk administrative withdrawal after one unregistered term. A leave of absence, or LOA, is approved and granted for the term for which the LOA is desired or as otherwise approved by the college.

It is the student's responsibility to communicate directly with their college regarding the disposition of the request for the LOA. Students who request a LOA may be displaced into a subsequent cohort, required to take a revised program of study upon return to the University or be delayed in their progression through the program based on availability of courses or clinical placements, or both.

Students may be eligible for an LOA only after they have completed and submitting to the Office of the Registrar the petition for leave of absence required by each college. Failure to complete and submit the petition for leave of absence form will make the student ineligible for any refunds and obligated for the full term's insurance charges. The date that the student begins the process of applying for an LOA is the official date that will be used in processing the form.

The day after the end of the current term will be the official date used in processing an LOA form submitted during the current term for the next term or during a break period.

For all approved LOAs, the last date of actual class attendance will be the date of record for calculating financial aid disbursements and returns.

A student who initiates a petition for leave of absence form after the first week of the term will receive a withdrawal grade on the transcript for any coursework.

No classes may be withdrawn during the last three weeks of any term. A student who initiates a petition for leave of absence form on or after the Monday beginning the last three weeks of the term will receive grades in the registered courses and will be subject to an academic progression review based on the assigned grades.

Each degree has a time limit for completion that includes LOA time. The decision to include the LOA in calculating the time limits for completion of the degree is within the discretion of each college. The maximum time that will be approved for a single LOA is 12 consecutive months. Each college may have a maximum length of accumulated LOA.

### Returning From a Leave of Absence

Students are responsible for registering themselves for the term in which return from an approved LOA. This registration must occur during the designated priority registration period. Registration outside of this period will result in a late registration fee. Students are responsible to consult with their adviser or program director regarding required courses for the term of re-entry. Rush Medical College students should consult with the appropriate assistant dean to determine required courses. Students must satisfy the conditions of the LOA before re-entering and must comply with all policies, requirements and course sequences in effect at the time of re-entry.

A request to extend an LOA requires a new clearance form submission. A request to extend an LOA requires only the signatures of the student's program director, adviser or designated administrator of the college. The completed form must be submitted to the Office of the Registrar no later than the first Friday of the term for which the extension is requested.

Students who cannot return and who do not have an LOA extension approved must withdraw from the institution. Students who don't return from their LOA on the originally approved date risk administrative withdrawal.

## Student Records

### Name, Address and Phone Number Changes

Rush University requires that student academic records exist under the student's legal name.

The Office of the Registrar maintains the current official listing of student names and addresses for Rush University.

It is each student's responsibility to keep the Office of the Registrar informed of changes.

Name changes require, at the time of the request, official documentation verifying the new name. Examples of official documentation verifying a new name include the following: Social Security Card, government-issued ID (passport, driver's license or state-issued photo ID) or court order.

### Privacy and Confidentiality of Student Records and FERPA

Rush University takes seriously its commitment to protect the privacy of its students and their education records. In addition to upholding the Family Educational Rights and Privacy Act of 1974, or FERPA, Rush University has taken further steps to protect privacy by extending similar benefits afforded to enrolled students under FERPA to individuals who are applying for admission. If a specific privacy or confidentiality question is not answered in this text, please contact the Office of the Registrar.

Nothing in this policy may be construed to prohibit the University from disclosing information provided to the institution under the Violent Crime Control and Law Enforcement Act concerning sex offenders who are required to register.

### Family Educational Rights and Privacy Act of 1974 (FERPA)

FERPA is a federal law designed to protect the privacy of students' educational records. Educational records are those that contain information or documentation directly related to a student that is recorded in any way, including records produced by handwriting, computer, email, audio, video, etc. Educational records contain information directly related to a student and are maintained by Rush University or any party acting on its behalf.

FERPA protects the privacy of students' educational records by setting strict instructions and limitations governing the release of information about students. Though FERPA contains exceptions for the release of directory information without a student's prior written consent, students have the right to request that even directory information be withheld from disclosure to third parties.

Given the restrictions of FERPA, faculty and staff should assume all students must provide written consent that follows the format specified in FERPA before any educational records may be released to anyone other than the student. Without written consent, information cannot be released to any third party, including students' parents, relatives and friends. Particularly sensitive information includes students' Social Security numbers, race or ethnicity, gender,

nationality, academic performance, disciplinary records, financial aid information and grades.

### Privacy During the Admissions Process

Rush University has chosen to take additional steps to protect a person's privacy by extending to individuals who are applying for admission similar benefits afforded to enrolled students. This privacy protection covers all applicants and their application materials throughout the admissions process.

The application process exists between the applicant and a Rush University admissions office; therefore, any communication about candidates and their application status to parties beyond these entities is not acceptable unless school officials has a legitimate educational interest to know this information in order to fulfill their professional responsibilities. All those involved in the admissions process (e.g., admissions committee members, interviewers, admissions staff) must adhere to these guidelines.

### Directory Information

Rush University may establish categories of information known as directory information and release this information without student consent, upon request. Rush University designates the following personally identifiable information contained in a student's educational record as directory information:

- Student's full name
- Address (local and permanent)
- Telephone number (local and permanent)
- Rush pager number (relevant to third- and fourth-year Rush Medical College students only)
- Rush email address
- Major and minor field(s) of study, including the college, division, department and/or program in which the student is enrolled
- Student's classification (e.g., junior, senior) or by number referring to such
- Dates of attendance and graduation, and degrees received
- Date and place of birth
- Photograph or other electronic images\*
- Honors and awards received
- Previous colleges/universities attended
- Degrees earned at previous colleges/universities
- Rush Medical College postgraduate appointment (program, institution and state)

Students may restrict the release of their directory information by completing and submitting the directory information restrictions form available on the Office of the Registrar's webpage.

The decision to restrict directory information will apply to all requests from third parties (other than those who already have legal access to these data elements), including prospective employers. A student must formally rescind a restriction of directory information by submitting a subsequent directory information restrictions form.

\* *Rush University records both visually and audibly many campus events and daily activities, such as classes, commencement, convocations, student events and other public occasions. These images, as well as other information about students, are published (e.g., print media; Rush website) regularly as part of the University's coverage of campus life and portrayal of the University to a variety of audiences. The University's policy is to restrict the use of any photograph/electronic image to the representation, marketing or promotion of Rush activities only.*

### Annual Notification of Student Rights Under FERPA

Rush University notifies students annually of their rights under FERPA with respect to their educational records. These rights include the following:

1. **The right to inspect and review the student's educational records within 45 days of the day the University receives a request for access. If an educational record contains information about other students as well, the requesting student may inspect and review only their specific information.**

Students should submit written requests that identify the record(s) they wish to inspect to the University registrar, dean, head of the academic department or another appropriate official. The University official will make arrangements for access and notify the student of the time and place for record inspection. If the records are not maintained by the University official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.

The University may deny a request for copies of educational records when the requestor refuses to furnish proper identification and/or information required by the University.

2. **The right to request amendment to an educational record the student believes is inaccurate.**

Students may ask the University to amend a record they believe is inaccurate. They should write the University official responsible for the record, clearly identify the part of the record they want changed, specify why it is inaccurate and provide the accurate information. If the University decides not to amend the record as requested by the student, the University will notify the student of the decision and advise the student of their right to a hearing regarding the amendment request. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

3. **The right to consent to disclosure of personally identifiable information contained in the education record, except to the extent that FERPA authorizes disclosure without consent.**

One exception, which permits disclosure without consent, is disclosure to school officials with legitimate educational interests. A school official is a person employed by the University in an administrative, supervisory, academic, research or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the University has contracted (such as an attorney, auditor or collection agent); a person serving on the Board of Trustees; or a student serving on an official committee (such as a disciplinary or grievance committee or assisting another school official in performing tasks). A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill a professional responsibility

4. **The right to file a complaint with the U.S. Department of Education concerning alleged failures by Rush University to comply with the requirements of FERPA.**

The following is the name and address of the office that administers FERPA:

Family Policy Compliance Office  
U.S. Department of Education  
400 Maryland Ave. SW  
Washington, DC 20202

### Commencement/Graduation Activities

Completion of the intent to graduate form signals a student is ready to graduate. By completing the form, the student is giving permission to the University to print the following information in any Rush graduation program and/or announce this information at any Rush graduation

ceremony: the student's name as indicated on the intent to graduate form, any honors or awards received, the Rush degree and major the student is earning, previous colleges/universities attended and degrees earned at those previous colleges/universities.

If a directory information restrictions form was previously submitted, the student's submission of the intent to graduate form temporarily releases — for graduation ceremony/program purposes only — the directory information restrictions enacted by the student so that the information can be published in any Rush graduation program and/or announced at any Rush graduation ceremony.

In addition, the student's submission permits Rush University to release the student's name and address to the external photography vendor with whom Rush contracts and to have the vendor place graduation photographs of the student on its website. The student's submission also allows the University to publish the student's photo in a picture composite and the student's image in a commencement ceremony DVD that is created and distributed. The recording of the graduation ceremony could also appear on the Rush University website and/or social media sites, including but not limited to YouTube and Facebook. Finally, if the student is a medical student, the student's signature permits publication of the student's name, photograph, previous degrees earned and other information in the Rush Medical College yearbook.

If there are questions about how the information will be used for graduation or commencement purposes, please speak with the Office of the Registrar before submitting the intent to graduate form.

### Educational Records

Rush University does not maintain educational records in one central office. Educational records are maintained in the Office of the Registrar and in the respective college and department offices. Other educational records are maintained in the Office of Student Financial Aid (financial aid information, student employment), Office of Student Financial Affairs (financial account payment information), Office of International Student Services and other offices. Questions regarding individual student records should be directed to the appropriate location.

Rush University will not issue copies of transcripts received from other institutions to anyone, including the student.

### Deceased Student Records

Rush University may, upon the death of a student, release the student's educational records to a third party. This is done at the sole discretion of Rush University.

### Mailing Lists

Rush University does not release student directory information in mailing lists, except to comply with the federal Solomon Amendment.

### Additional Questions

The Office of the Registrar is the compliance office for FERPA for Rush University. If there are additional questions, please contact the Office of the Registrar:

600 S. Paulina St., Suite 440  
Chicago, IL 60612

(312) 942-5681  
registrars\_office@rush.edu

## Institutional Policies

### Drug and Alcohol Free Workplace

Rush University and Rush University Medical Center (hereinafter, collectively referred to as Rush) comply with the requirements of the Drug-Free Schools and Communities Act (DFSCA), and the Drug-Free Workplace Act, and our policy implements those requirements. In accordance with the laws, Rush will review its compliance efforts on a biennial basis to measure effectiveness and to ensure that the standards of conduct and conduct sanctions are appropriate and have been consistently enforced.

Violations of the Drug and Alcohol Free Campus policy include, but are not limited to, unauthorized use, possession or sale of drugs, alcohol or other controlled substances on Rush premises, including the smoking or vaping of cannabis.

This information is distributed annually on every first Monday of October, and it is provided on an ongoing basis during student, faculty and staff orientations and meetings. Distribution occurs in a variety of ways including, but not limited to, U.S. mail, electronic transmission, within registration and/or orientation materials, as a Leap Online module, on Blackboard and/or by personal distribution during classes or meetings.

## Tobacco-Free Work Environment

Rush University Medical Center supports the surgeon general's report on use of tobacco products as a major cause of preventable death. Tobacco use has been documented to contribute significantly to health problems for those who engage in the practice and those who are subjected to an environment where tobacco smoke is present.

Rush University Medical Center, to be consistent with its mission, seeks to promote the health, safety and quality of life of all members of the Rush community. To that end, Rush is a smoke- and tobacco-free campus. Tobacco products that are prohibited include, but are not limited to, cigarettes, cigars, pipes, e-cigarettes, vaping devices, all forms of smokeless tobacco and other products made primarily with tobacco.

1. In accordance with these standards, Rush prohibits smoking, vaping or the use of tobacco products by anyone — including employees, patients, visitors, physicians, students, faculty, volunteers and contractors — on the Rush campuses.
2. Regarding premises outside of the Rush campuses, smoking, vaping or the use of tobacco products is prohibited in all buildings or on grounds owned, leased or controlled by Rush wherever located, including adjacent public sidewalks and adjoining properties. This policy may be limited by the policies of the landlord or third-party tenants of such premises.
3. Smoking, vaping or tobacco use is prohibited in Rush owned, leased or controlled vehicles wherever located.
4. Smoking, vaping or tobacco use is prohibited within 15 feet of all Rush shuttle bus stops, immediately adjacent to Rush campuses.
5. Signs indicating Rush is a tobacco-free environment are posted at each entrance.
6. Potential new hires will be informed of the tobacco-free work environment at the time of employment application.
7. Current tobacco use will be asked at time of health screening. Those with a positive history will be given referral information for smoking cessation.
8. The tobacco-free work environment and policy will be reviewed at new employee orientation.
9. While this policy does not require employees to quit tobacco use, Rush supports and encourages all efforts by employees to quit tobacco use.

10. Rush offers smoking cessation and coping programs to employees and encourages them to participate. For more information, please contact ChooseHealth@rush.edu or (312) 942-7479.
11. It is the responsibility of all Rush staff, faculty, students and employees to ensure compliance with this policy. Enforcement of this policy is a shared responsibility of all Rush personnel.
12. Employees violating this policy will be subject to disciplinary action (see Human Resources Policy and Procedures - Code of Conduct).

## Diversity, Equal Opportunity and Inclusion

For over three decades, the Rush approach to equal opportunity, diversity and inclusion has not wavered. Our approach is that these are essential components of the best employment, educational and health care practices and must be furthered. This is a continuation of a policy that emanated from the hospital charters of 1865 and 1883 and the documents governing the establishment of Rush University in 1972.

In certain instances, the implementation of this policy and our goals in this area require the use of affirmative initiatives. At Rush, these initiatives are focused on strong recruitment, development and retention efforts — not on quotas — and these recruitment and programming efforts will be continued, consistent with federal, state and municipal guidelines.

Rush is committed to attracting students who will enable the student body to achieve the educational benefits of diversity and to providing services to all students, faculty and employees on a nondiscriminatory, equitable basis.

Discrimination or harassment against any member of the Rush community because of race, color, religion, national origin, creed, age, ancestry, disability as defined by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, gender, gender identity and/or expression, marital or parental status, national origin, pregnancy, sexual orientation, veteran status or any other category or categories protected by federal or state law or local ordinance that excludes an individual from participation, denies the individual the benefits of, treats the individual differently or otherwise adversely affects a term or condition of an individual's employment, education, living environment or participation in a Rush program or activity. This includes failing to provide reasonable accommodation consistent with state and federal law to persons with disabilities.

Inquiries regarding the policy should be directed to the equal opportunity officer by telephone at (312) 942-5239 or email at Institutional\_Equity@rush.edu.

Additional resources may be found within the following University offices:

Office of Student Diversity and Community Engagement  
Armour Academic Center  
600 S. Paulina St., Suite 984B  
Chicago, IL 60612  
(312) 942-0725

## Prohibition Against Harassment, Discrimination and Sexual Misconduct

### Introduction

Rush is committed to the principles of equal opportunity and promoting and maintaining an environment that emphasizes the dignity and worth of every member of its community. Rush strives to have an environment that is free from unlawful Sexual Harassment. Rush complies with Title IX of the Higher Education Amendments of 1972 and its implementing regulations, which prohibits Sexual Harassment that occurs within its education programs or activities. For purposes of this policy, Sexual Harassment includes Quid Pro Quo Sexual Harassment, Hostile Environment Sexual Harassment, Sexual Assault, Domestic Violence, Dating Violence, and Stalking.

Rush has a legal duty to prevent and redress Sexual Harassment that occurs within its education programs or activities, as well as a moral and ethical duty to do so. Indeed, such conduct is contrary to Rush's values, represents professionally and socially irresponsible behavior; and can damage the trust, influence and reputation of Rush and the medical profession. Moreover, because Rush's primary mission of furthering the public good relies on maintaining public trust and confidence, it is essential that every member of the Rush community share in the responsibility for meeting our community's conduct expectations. It is equally important that members of our community appreciate the impact Sexual Harassment that occurs within Rush's education programs or activities can have on our environment, and the potential for severe consequences for such behavior.

### Policy Statement

Rush strictly prohibits all forms of Sexual Harassment against any member of the Rush community, including but not limited to students, house staff, members of the faculty, all employees, volunteers, guests and vendors (the "Rush Community").

Members of the Rush Community who commit Sexual Harassment are subject to the full range of discipline including verbal reprimand; written reprimand; mandatory training, or counseling; mandatory monitoring; partial or full probation; partial or full suspension; permanent separation from the institution (that is, termination or dismissal); physical restriction from Rush property; cancellation of contracts; and any combination of the same.

Rush will provide persons who have experienced Sexual Harassment ongoing remedies as reasonably necessary to restore or preserve access to the Rush's Education Programs or Activities.

### Reporting and Response Procedures

This policy, the Prohibition against Sexual Harassment in Rush Programs and Activities (hereinafter "this Policy" or "the Policy"), is administered by the Title IX Coordinator and the Office of Institutional Equity (hereinafter "Office of Institutional Equity" or "OIE"). The Policy addresses Rush's obligations under relevant provisions of the implementing regulations of Title IX of the Higher Education Amendments of 1972 and the Violence Against Women Reauthorization Act of 2013 (also known as the Campus SaVE Act), the Preventing Sexual Violence in Higher Education Act, and other relevant laws. Rush values the fair, prompt and equitable inquiry into allegations that arise under this Policy. Sexual Harassment will not be tolerated.

It is central to the values of Rush that any member of the community who believes that they have witnessed or been the target of Sexual Harassment feel free to report their concerns for an appropriate response and investigation, without fear of retaliation or retribution. Rush will respond to reports, Formal Complaints, or information about incidents of Sexual Harassment by stopping the prohibited conduct, taking steps to prevent the recurrence of prohibited conduct, and addressing its effects on campus or in any Rush programs and activities regardless of location. Rush expects that all reports made under this Policy will be brought in good faith.

All reports and concerns about conduct that may violate this Policy (including retaliation for reports made pursuant to this Policy) should be filed with Rush's Title IX Coordinator or the Office of Institutional Equity: at Institutional\_Equity@Rush.edu. Confidential reports can also be made through the Rush Hotline at (877) 787-4009 or via the Rush web reporting tool at rush.ethicspoint.com. Anonymous reporters do not need to identify themselves, but are asked to provide enough information to enable an investigation. Upon receipt of a complaint, the equal opportunity officer will evaluate

the information received and determine what further actions should be taken. The policies can be found online at [rushu.rush.edu/sexual-harassment-and-assault-prevention](http://rushu.rush.edu/sexual-harassment-and-assault-prevention).

### Resources

For more information on the Rush policies against harassment, discrimination and sexual misconduct, contact:

Title IX Coordinator  
(312) 942-5239  
[Institutional\\_Equity@Rush.edu](mailto:Institutional_Equity@Rush.edu)

## University Student Refund Policy

### Purpose/Introduction/Background

The Student Refund Policy provides students an opportunity to formally withdraw prior to the start date of an academic term without being responsible for tuition. Students deciding to withdraw after the official start date of the term will be refunded according to the schedule shown below. Students are responsible for any tuition or fee balances due until such time they are formally notified by Rush University in writing of their withdrawal status.

Non-refundable guidelines:

- Refunds are not granted for course(s) where the student has received a grade.
- Refunds are not granted to students who are part of a current disciplinary hearing, have been suspended, dismissed, expelled or for other disciplinary reasons making them ineligible to further matriculate in their program of study.

Refunds will not be granted where Rush University has changed the delivery of course or program modality to ensure the safety and health of students (see policy and procedure sections).

### Policy Statement and Tuition Refund Schedule

Official voluntary withdrawal, leave of absence, military service or withdrawal from the University (excluding withdrawals as noted in the non-refundable guidelines) or from course(s) entitles a student to a refund of tuition according to the schedule below. \*Note: Rush University does not differentiate tuition rates for online or remote courses from courses that are offered onsite (see student refund procedures section for additional details).

Any student requesting a refund for course(s) or officially withdrawing from a program must initiate the process with their program director and submit the appropriate forms and documentation to the Office of the Registrar.

## Tuition Schedule

Timeframe	Percent of Refund
Withdrawal during the first week	100%
Withdrawal during the second week	80%
Withdrawal during the third week	60%
Withdrawal during the fourth week	40%
Withdrawal during the fifth week	20%
After the fifth week	0%

\*Weeks are based on calendar days

### Alternate Refund/Grading

This alternate refund/grading policy does not apply to Rush Medical College students.

Course Type	Percent of Refund
<b>Pure Compressed Weekend Course</b> (Friday/Saturday/Sunday without any pre-class or post-class work)	
Before first class meeting	100%
After the first class meeting	0%
<b>Two-Week Course</b>	
Before first class meeting	100%
Week 1	50%
Week 2	0%
<b>Five-Week Course</b>	
Before or during week 1	100%
Week 2	50%
Week 3 - 5	0%

\*Weeks are based on calendar days

## Procedures

### Student Refund Process

- Rush University will notify students of the status of their refund request in writing within 10 business days upon receipt of a refund request.
- A check or direct deposit for the refund amount, less any amount owed to the University for other charges, will be sent to the student.
- Refunds will be shown as credits on the student's account.
- Refund checks are typically processed within two weeks and mailed to the student's address listed in the official University Student Information System.

### Refund Appeals

- Students in good standing with the University may file a refund appeal. Students who are part of an ongoing disciplinary hearing, have been suspended, dismissed, expelled or have any other disciplinary reasons are ineligible to file a refund appeal.
- Students initiating a refund appeal because they were denied must appeal in writing to the University Refund Review Committee.
- All written refund appeals must be filed within 30 days of the denied refund request.
- All appeal decisions are final.

*\*In circumstances where Rush University courses or programs of study must be converted to a remote modality to protect the public health, safety or security for students, as long as all accreditation standards are met, no refunds will be issued in accordance with this student refund policy.*

### Cancellation of Classes

Students will receive a full refund for courses that are cancelled.

### Withdrawal for Active Military Service

Students called to active military service are entitled to receive a refund of tuition and any adjustments to financial aid.

### Nonattendance in Courses

Students are required to officially withdraw from courses by completing the Add/Drop Request on the Office of the Registrar webpage within the designated refund period. Failure to officially withdraw from courses does not entitle a student to a refund.

## Non-Academic Fees

### Student Health Insurance refunds

- Students who voluntarily withdraw or are dismissed from course(s) or from the University, and are enrolled in the student health insurance plan, you are responsible for 100 percent of the insurance charge posted on your student account for that term unless the student submits a waiver for that term during the health insurance open enrollment and waiver period (this option is valid only for non-Medical College students).
- Students who request a Leave of Absence, and wish to remain enrolled in the student health insurance plan throughout their Leave of Absence, will have the charges posted on the student account for the effective terms. Please see Rush University Student Health Insurance Policy for further details.

Rush Medical College's tuition and fees cover Student Health Insurance coverage during the period of active enrollment, therefore students are not eligible for any health insurance refunds nor are students required to pay any additional cost for insurance coverage. See Rush University Student Health Insurance Policy for further details.

### Tailor Lofts Student Apartments

Students are solely responsible for all Tailor Lofts Student Apartments leasing obligations (i.e., rent, utilities, etc.) for the term of the lease agreement. Regardless of voluntary or involuntary withdrawals, dismissals or extenuating circumstances, student will be responsible for all leasing responsibilities included in the Tailor Lofts lease agreement.

### Extenuating Circumstances

Request for refunds based on extenuating circumstances will be reviewed on a case-by-case basis. Verifiable documentation is required to substantiate the extenuating circumstance.

Students requesting a refund for extenuating circumstances should provide documentation and submit the **Petition for an Extenuating Circumstances Refund form** to the Office of the Registrar.

Examples of an acceptable extenuating circumstance

- Injury or illness that significantly impacted the student's ability to continue attending classes
- Military deployment/active duty
- Death of an immediate family member (parent, spouse, civil union partner, child, brother or sister)

Examples of documentation of an extenuating circumstance

- A signed statement from a licensed medical practitioner that documents the nature of the illness, including the beginning and ending period of the illness
- Active military orders that include the beginning and ending dates of deployment
- A copy of the official death certificate

#### **Active Military Service Withdrawal**

Students who are called to active duty should submit the Leave of Absence form, including the military leave papers with dates of military service, to the Office of the Registrar for processing.

#### **Assumption of Risk for Students**

Rush University (“Rush”), inclusive of the Colleges within, and its Clinical Partners provide opportunities for students enrolled in health sciences programs at Rush to engage in learning experiences and, as applicable, participate in on-campus and clinical experiences, including but not limited to clinical rotations (“Clinical Programs”). Students returning to campus, engaging in learning experiences and participating in Clinical Programs (referred to herein as “Students”) knowingly and voluntarily subject themselves to certain risks related to healthcare education.

In light of the novel coronavirus, COVID-19, Rush and its Clinical Partners are taking certain new precautions and ensuring that all Students are aware of the potential risks inherent to returning to campus, attending classes or other learning experiences and participation in Clinical Programs. Students voluntarily and willingly assume certain risks in returning to campus, attending classes and participating in and completing Clinical Programs, which are completed for their own benefit.

COVID-19 is a highly infectious, life-threatening disease declared by the World Health Organization to be a global pandemic. There is no current vaccine for COVID-19. COVID-19’s highly contagious nature means that contact with others or contact with surfaces that have been exposed to the virus can lead to infection. Additionally, individuals who may have been infected with COVID-19 may be asymptomatic for a period of time or may never become symptomatic at all. Because of its highly contagious and sometimes hidden nature, it is currently very difficult to control the spread of COVID-19 or to determine whether, where or how a specific individual may have been exposed to the disease. Aware of the foregoing, you are voluntarily returning to the campus of Rush and/or Clinical Partners.

There is a potential risk inherent in returning to campus, attending classes or other learning experiences and/or participating in Clinical Programs. Students may be exposed to and/or care for patients who are ill with infectious diseases, and as a result may be at heightened risk for contracting infectious diseases, including COVID-19. Students may also be exposed to infectious disease, including COVID-19, through exposure from other members of the Rush community, including students, faculty, staff and patients.

Students will be required to comply with any and all safety precautions and guidelines set forth by Rush, and for Students who are participating in Clinical Programs (referred to herein as “Student Participants”), and any additional safety precautions and guidelines set forth by Rush and/or the Clinical Partner at which the Student is completing a Clinical Program. Such precautions and guidelines may be updated at any time. In particular, Student Participants who are working with or around patients who have or may have COVID-19 (e.g., Student Participants who work in a “COVID-19 wing”), or who have been otherwise directed to do so by Rush or a Clinical Partner, are required to wear personal protective equipment (“PPE”). Student Participants are solely responsible for notifying the Clinical Partner and Rush (through the relevant program director or supervising faculty member) if PPE has not been provided. Student Participants are solely responsible for using PPE correctly and for following any other requirements set forth by Rush and/or Clinical Partners.

Student Participants are also required to comply with any best practices related to the provision of health care generally (e.g., hand-washing, mask wearing and social distancing), and related to the transmission of infectious diseases, including COVID-19, specifically, and are solely responsible for asking Rush and/or Clinical Partners for any further guidance necessary related to such best practices. PPE and other precautions cannot fully eliminate the risk of transmission of infectious disease. Student Participants are required to report to Rush and the Clinical Partner, if relevant, known or suspected exposure to COVID-19 and to report any symptoms of COVID-19 (e.g., acute respiratory illness; signs of a fever).

All Students are ultimately responsible for their own health. Rush stands ready to assist any Student, as requested, in complying with these requirements.

All Students must acknowledge these responsibilities and the inherent risks of returning to campus, engaging in learning experiences and attending class, and participating in Clinical Programs prior to resuming such participation.

**IN CONSIDERATION** of being given the opportunity to return to campus, engage in and attend class or other learning experiences, and/or complete Clinical Programs at Rush University and its Clinical Partners, you understand and acknowledge the following:

1. There is potential risk inherent in returning to campus, attending classes or other learning experiences and/or participating in Clinical Programs. I understand and acknowledge that I may be around and/or care for individuals that are ill and therefore may be exposed to diseases known or unknown, including but not limited to COVID-19. I am willing to assume that risk.
2. My return to campus and/or participation in the Clinical Program is to benefit my knowledge, experience and improve my abilities and therefore purely voluntary on my part.
3. I assume responsibility for complying with any safety guidelines set forth by Rush University (and the Colleges within), Rush University Medical Center, and/or a Clinical Partner, including as related to the use of personal protective equipment (“PPE”). I acknowledge that the use of PPE and other safety precautions, such as hand-washing, does not fully eliminate any risk inherent to returning to campus, attending classes or other learning experiences and participation in the Clinical Program. I acknowledge that I should not return to campus if I cannot comply with the safety guidelines set forth by Rush related to presence on campus and attendance in class, academic events or other learning opportunities. I acknowledge that if I am participating in a Clinical Program, I am responsible for informing both Rush University (through the relevant program director or supervising faculty member) and the Clinical Partner at which I am completing a Clinical Program if I lack the necessary PPE or cannot for any reason comply with safety precautions. I voluntarily assume this responsibility and the related risk.
4. If I believe I have been exposed to someone who tested positive for COVID-19 or experience symptoms associated with COVID-19, I understand that I should not come to campus, except to seek medical care, attend any classes or other academic events, or attend my Clinical Program. I understand that in the event I am injured or ill in relation to exposure to illness on campus, I am responsible for notifying the relevant program director or supervising faculty member at Rush University. I understand that in the event I am injured or ill in relation to the activities I engaged in during the Clinical Program, I am responsible

for notifying the relevant program director or supervising faculty member at Rush University. I further understand that I will be responsible for the costs associated with any such exposure, illness, or injury, to include any follow up care that might be needed. I voluntarily assume this responsibility.

5. I understand that Rush is planning a flexible model of instruction, including for Clinical Programs, and may provide fully online and/or remote instruction if necessary. Under this flexible model, Rush currently intends that instruction will be a hybrid of in-person and online modalities; however, the model is designed to pivot to a fully online/remote modality if necessary to help ensure health and safety of the Rush community, in line with recommendations from public health entities.

**I understand that compliance with the expectations set forth in this document is an educational responsibility with which I, as a student at Rush, and a professional responsibility with which I, as a future licensed health care worker, agree to abide. I am freely and voluntarily entering into this assumption of risk.**

## 2020-2021 Academic Calendar

### Term/Event

Fall 2020	
Classes Begin for <b>RMC</b> Students	Monday, Aug. 31, 2020
Last Day for Late Registration ( <b>RMC</b> )	Friday, Sept. 4, 2020
<i>Labor Day Holiday (No Classes)</i>	Monday, Sept. 7, 2020
Classes Begin for <b>CON, CHS and GC</b> Students	Tuesday, Sept. 8, 2020
Last Day for Late Registration	Friday, Sept. 11, 2020
<i>Thanksgiving Recess</i> <b>(No classes on these days)</b>	Thursday and Friday Nov. 26-27, 2020
Classes Resume at 8 a.m.	Monday, Nov. 30, 2020
Classes End ( <b>CON, CHS, GC</b> )	Saturday, Dec. 12, 2020
Final Exams ( <b>CON, CHS, GC</b> )	Monday - Saturday Dec. 14-19, 2020
Classes End and Final Exams ( <b>RMC</b> )	Monday - Saturday Dec. 9-14, 2019
End of Term All Students/Conferral of Fall Degrees	Saturday, Dec. 19, 2020
<i>Term Break</i> <b>(No classes during this period)</b>	<i>Sunday - Sunday</i> Dec. 20, 2020 - Jan. 3, 2021

Spring 2021	
Classes Begin for All Students	Monday, Jan. 4, 2021
Last Day for Late Registration	Friday, Jan. 8, 2021
<i>Martin Luther King Jr. Holiday</i>	Monday, Jan. 18, 2021
<i>Spring Break</i> <b>(No classes in session this week)</b>	Monday - Friday March 1-5, 2021
Classes Resume at 8 a.m.	Monday, March 8, 2021
Classes End ( <b>CON, CHS, GC</b> )	Saturday, April 17, 2021
Final Exams ( <b>CON, CHS, GC</b> )	Monday - Saturday April 19-24, 2021
Classes End & Final Exams ( <b>RMC</b> )	Monday - Saturday April 26 - May 1, 2021
<b>Spring Commencement</b>	<b>Saturday, May 1, 2021</b>
End of Term for All Students/Degree Conferral	Saturday, May 1, 2021
<i>Term Break</i> <b>(No classes during this period)</b>	<i>Sunday - Sunday</i> May 2-9, 2021

## 2020-2021 Academic Calendar

### Term/Event

Summer 2021	
Classes Begin for All Students	Monday, May 10, 2021
Last Day for Late Registration	Friday, May 14, 2021
<i>Memorial Day Holiday (No Classes)</i>	Monday, May 31, 2021
Classes End: Eight-Week Term ( <b>RMC-M1</b> )	Monday - Friday June 28 - July 2, 2021
<i>Fourth of July Holiday (No Classes)</i>	Monday, July 5, 2021
Classes End ( <b>CON, CHS, GC</b> )	Saturday, Aug. 14, 2021
Final Exam ( <b>CON, CHS, GC</b> )	Monday - Saturday Aug. 16-21, 2021
Classes End & Final Exam ( <b>RMC</b> )	Monday - Saturday Aug. 23-28, 2021
End of Term for All Students/Degree Conferral	Saturday, Aug. 28, 2021
<i>Term Break</i> <b>(No classes during this period)</b>	<i>Sunday - Sunday</i> Aug. 29 - Sept. 5, 2021

**Calendar dates are subject to change without notice.**





## Tuition and Financial Aid

### Office of Financial Affairs

- Financial Appeals
- Payment of Tuition and Fees
- Student Health Insurance
- Tuition Refund Policy
- Tuition Waivers
- Third-Party Billing

### Tuition and Fees

### Office of Student Financial Aid

- Financial Aid Process
- Financial Aid Determination
- Financial Aid Awards
- Veterans Benefits
- Satisfactory Academic Progress
- Financial Aid Warning
- Suspension of Financial Aid Eligibility
- Appealing Suspension of Financial Aid Eligibility
- Reinstatement of Financial Aid Eligibility

### Educational Assistance Benefits (Tuition)

- Employee Enhancement Program
- Internal Degree Program
- External Degree Reimbursement Program
- Internal Degree Program - Dependents

## Office of Financial Affairs

### Financial Appeals

If a student has a financial account concern and wishes to appeal the financial decision, a written appeal must be filed with the Office of Financial Affairs within two academic terms from the term in question in order for the appeal to be considered. The Office of Financial Affairs will investigate the situation and will consult with other offices as needed, including the Office of the Registrar, the Office of Student Financial Aid and the student's program.

A decision will be rendered within one month from the time the appeal was received, and the student will be notified in writing. If the decision is not in the favor of the student, the student may file a written appeal with the vice provost of Student Affairs. The decision of the vice provost, Student Affairs, is final.

### Payment of Tuition and Fees

The following is the payment policy for all Rush University students:

Charges should be viewed and payment for tuition, fees and on-campus housing can be completed through the Rush University Portal, the University's online system. Online payments can be made by credit, debit card or e-check. Students can also mail checks, money orders or cashier's checks to the Office of Financial Affairs or submit credit or debit card payments by calling the Office of Financial Affairs. There is a 2.5% processing fee for any credit or debit card payment. If full tuition payment cannot be made by the first Friday of the term, as listed in the academic calendar located in the Rush University Catalog, satisfactory arrangements for payment must be made with the Office of Financial Affairs. Any exception to this policy must be approved in writing by the vice provost, Student Affairs.

Students have the responsibility to complete one, or a combination of, the following courses of action on or before the first Friday of classes each term:

1. Pay total tuition, fees and on-campus housing charges for the term.
2. Complete a deferred payment plan contract. This plan requires the first payment and a \$15 service charge to be paid on or before the first Friday of the term. Additional payments are due every four weeks (up to four payments total). Contact the Office of Financial Affairs via email to set up a payment plan prior to the first day of class.

3. Use the pending financial aid payment option. All students who have financial aid pending will be allowed to defer payment of the portion of tuition and fees that is covered by the anticipated aid. In order to use this option, students must have taken all steps required of them to apply for the aid (e.g., the FAFSA application must have been completed and submitted to the Office of Student Financial Aid, along with the Projected Enrollment Form (if applicable to the student's program), loan entrance counseling, promissory notes and origination forms). In order to avoid a late-fee charge, students must make arrangements for payments of that portion of tuition and fees not covered with pending aid by completing Steps 1 or 2 above.

Failure to follow one of the steps above will result in a \$100 late fee. A \$50 late payment fee will be assessed for each missed payment to students who choose the deferred payment plan contract and fail to make a payment on the specified due dates.

At the end of the academic term, students who still have outstanding Rush University balances that are not covered by pending financial aid will:

- Receive a hold on their student account
- Not receive transcripts/diplomas
- Not be allowed to register for the following term

### Student Health Insurance

Rush University requires students to be covered by a health insurance plan in order to promote health and well-being while protecting the individual from undue financial hardship that a medical emergency could cause. Non-Rush Medical College students may opt out of the student health insurance by providing proof of existing coverage during their first term of enrollment (during the health insurance open enrollment and waiver period) and then every fall term thereafter. Students are required to take action during the Fall Open Enrollment and Waiver Period. All communication from the Office of Financial Affairs regarding student health insurance open enrollment and waiver periods are sent to Rush email addresses. Students are expected to check their Rush email account regularly and take action during those periods regarding submitting waivers or enrolling in the student health insurance.

Students who do not submit proof of alternate coverage will automatically be enrolled in the student health insurance plan and charged the premiums for the term. All students enrolled in degree programs are eligible for the student health insurance plan offered by Academic Health Plans and Blue Cross and Blue Shield of Illinois.

For the 2020-2021 school year, the cost of the student health insurance plan is approximately \$4,163 per academic year for single coverage. The total annual coverage amount is allocated and billed onto the student's account on a per-term basis. Coverage is also available for dependents at the rate of \$4,163 annually per dependent. The total annual coverage amount for dependents is also allocated and billed onto the student's account on a per-term basis. This plan allows students to choose a primary care physician from a large list of members of the preferred provider organization, or PPO, plan in the greater Chicago area. When using an in-network provider, there is an annual deductible of \$250 and coverage of 80 percent for most patient services, including hospitalization and surgery, as well as outpatient services such as office visits, laboratory and X-ray. Preventative care services are covered at 100 percent. When using a pharmacy in the Prime Therapeutics network, there is a \$20 co-pay for each generic prescription, a \$50 copay for each brand-name prescription and an \$80 copay for each non-preferred brand-name prescription.

### Student Insurance Plan Rates for the 2020-2021 Academic Year

Medical Insurance	Approximate Yearly Rate
Student	\$4,163
Each dependent	\$4,163

**Student accounts will be billed on a per-term basis for a prorated amount of the annual health insurance premiums. For example, the fall premiums will cover September through December and will be billed to your account at the beginning of the fall term.**

Plan details are available in the Office of Financial Affairs or online at [rush.myahpcare.com](http://rush.myahpcare.com)

### Rush Medical College Students

A small portion of fees for Rush Medical College students has been allocated to the Medical Student Health Service Program, which is supported by Lifetime Medical Associates. The Medical Student Health Service Program is designed to work seamlessly with Rush University Health Insurance to provide medical students with acute care. By using Rush University Health Insurance, medical students receive an enhanced level of service and minimal billing issues, with a \$20 fee per office visit. This will provide the type of student health service familiar to most students.

Additionally, all Rush Medical College students are covered under a blood and bodily fluids exposure rider. This works as a supplemental policy to any health insurance and covers treatment or medications necessary as the result of a needle stick, splash or potentially contagious disease exposure. Together with the basic Rush University Health Insurance policy, the rider will completely cover prophylactic medications or injections.

Rush Medical College students will be assessed a fee for vaccinations, immunizations and documentation. This fee covers any necessary blood tests, vaccinations or updates, as well as costs associated with maintaining the documentation of students' compliance and communicating that information to the Rush System hospitals and any non-Rush locations that may request certification of immunization and vaccination status.

### Tuition Refund Policy

The Student Refund Policy provides students an opportunity to formally withdraw prior to the start date of an academic term without being responsible for tuition. Students deciding to withdraw after the official start date of the term will be refunded according to the tuition schedule in the University Student Refund policy located in the Academic and University Polices section in this catalog. Students are responsible for any tuition or fee balances due until they are formally notified by Rush University in writing of their withdrawal status.

### Tuition Waivers

#### Rush Medical College Students Enrolling in Courses at the Graduate College

Rush Medical College students who take a leave of absence from their MD program may enroll in courses at the Graduate College as part of a formal MS or PhD program, or simply for additional knowledge. Medical students are exempt (tuition waiver) from the additional tuition costs associated with enrollment in these classes.

#### Doctoral Students in the Graduate College

The Graduate College offers a full tuition scholarship for students enrolled in a doctoral program in the basic sciences (anatomy and cell biology, biomechanics, biochemistry, immunology/microbiology, medical physics, molecular biophysics and physiology, neuroscience and pharmacology). The scholarship is only for tuition. Health insurance and other fees are the student's responsibility.

To receive this scholarship, students must maintain full-time status. A requirement of at least 12 hours per term is needed to be a full-time student. If a student fails to register for 12 hours each term, the scholarship is rescinded, and the student is responsible for paying the tuition. In addition, most students accepted by the Graduate College receive a stipend. The stipend awarded is a privilege and is contingent upon policies established by individual divisions. Stipends are processed by the Accounts Payable Department as received by the program.

#### Master of Science Students in the Graduate College

Students enrolled in master's programs in the basic sciences (anatomy and cell biology, biochemistry, biomechanics,

biotechnology, immunology/microbiology, medical physics, neuroscience and pharmacology) pay tuition and fees. Master's students are generally not eligible for tuition scholarships and are expected to be enrolled full-time (12 hours per term) unless special arrangements have been made.

#### Third-Party Billing

If the student will not be personally paying their account, it is their responsibility to forward any bills to the appropriate party as soon as possible.

## Tuition and Fee Schedule (2020-2021)

Tuition and fees for the 2020-2021 academic year are listed below. For estimates of other expenses, see the Office of Student Financial Aid webpage.

College of Nursing	
Graduate Programs	Per-Credit Rate
Pre-licensure Direct Entry MSN program for non-nurses (all fees are included)	\$1,035
Post-licensure MSN, DNP, PhD programs (all fees are included)	\$1,166

\*Students should expect an annual increase in these tuition rates.

The Graduate College	
Graduate Programs	Per-Credit Rate
Clinical Research (MS)	\$1,152
Graduate Programs	Per-Term Rate
Biotechnology (MS)	\$18,604
Integrated Biomedical Sciences (MS)	\$10,029
Integrated Biomedical Sciences (PhD)	\$11,085

College of Health Sciences	
Undergraduate Programs	Per-Credit Rate
Health Sciences (BS)	\$753
Imaging Sciences (BS)	\$876
Vascular Ultrasound (BS)	\$830
Graduate Programs	Per-Credit Rate
Audiology (AuD)	\$1,059
Clinical Laboratory Management (MS)	\$919
Clinical Nutrition (MS)	\$950
Health Sciences (PhD)	\$933
Health Systems Management (MS)	\$1,201
Medical Laboratory Science (MS)	\$836
Perfusion Technology (MS)	\$962
Specialist in Blood Bank (Cert.)	\$919
Respiratory Care (MS)	\$766
Speech-Language Pathology (MS)	\$1,137
Graduate Programs	Per-Term Rate
Physician Assistant (MS)	\$12,795/term
Occupational Therapy (OTD)	\$14,134/term

Students-at-large pay the per credit rates listed above

Full-Time Tuition Charges: Rush Medical College				
Program Year	Fall 2020	Spring 2021	Summer 2021	Total
M1	\$22,896	\$22,896	\$11,449	\$57,241
M2	\$27,432	\$27,432	\$18,288 (M3 start)	\$73,152
M3	\$18,288	\$18,288	\$18,288 (M4 start)	\$54,864
M4	\$18,288	\$18,288	-	\$36,576

Continuous Enrollment Fee: Rush Medical College				
Program Year	Fall 2020	Spring 2021	Summer 2021	Total
M1 EF	\$11,468	\$11,468	\$5,735	\$28,671
M2 EF	\$14,336	\$14,336	\$9,557 (M3 start)	\$38,229
M3 EF	\$9,557	\$9,557	\$9,557 (M4 start)	\$28,671
M4 EF	\$9,557	\$9,557	-	\$19,114

### Admissions Fee

A non-refundable application fee is required of all applicants to offset the expense of processing the application, evaluating credentials and maintaining a library of evaluation aids. This fee does not apply to any other charges such as tuition.

### Enrollment Deposit

The enrollment deposit fee holds a place for the student in the entering class. The deposit is non-refundable and is applied toward payment of the first term tuition with the exception of the College of Nursing. A \$250 enrollment deposit is required for students in the College of Health Sciences. Rush Medical College students are required to pay \$100 prior to matriculation. College of Nursing students and affiliated students must deposit \$350 prior to matriculation. The enrollment deposit for PhD in nursing students is \$350. The enrollment deposit for all basic sciences and biomedical research programs within the Graduate College is \$250.

### Late Registration Fee

Students must register during the official priority registration period. An additional \$50 late registration fee will be applied to the student's financial account if the student has not registered by the end of the day, one day prior to the start of the term.

Students who feel there are mitigating circumstances as to why the late registration fee should not be applied must first appeal to their advisor. If the advisor deems the information warrants repealing the late registration fee, the advisor must speak with the program director. If the program director concurs with the advisor, the program advisor will notify the Office of the Registrar in writing. The late fee will then be removed from the student's financial account by the Office of Financial Affairs.

### Continuous Enrollment Fee

Students enrolled in a noncredit residency or academic enrichment program prior to receipt of their degree must be registered for Continuous Enrollment in order to retain their student status. Any degree or certificate student not taking courses but needing to replace an outstanding incomplete grade must register for Continuous Enrollment until the grade is satisfied. This fee also applies to graduate students who have completed all courses but have not had their dissertation accepted.

Hospitalization or physician fees are not covered in this fee. Students auditing a course may be required to register for the continuous enrollment course (see Auditing a Course below).

### Returned Checks

A \$25 charge will be assessed each time a student gives the University a check that is returned by the bank marked "not sufficient funds," "payment stopped" or "account closed."

### Rush Medical College Students and Tuition Charges

Rush Medical College students are charged for a maximum of four years of full-time tuition. Medical students who need additional terms to complete degree requirements will be charged the continuous enrollment fee. Though it may be possible for a medical student to complete all degree requirements prior to the spring term of the fourth year, a full four years of tuition charges must be paid prior to graduation.

### Auditing a Course

Students who are registered in classes for credit and wish to audit a separate class or classes will not be charged for the audited course(s). If the student only wishes to audit one or more classes and will not be registered in any classes for credit for that term, the student must register in Continuous Enrollment and a charge of one credit hour will be assessed at the student's normal tuition rate. All requests related to auditing a course must be processed by the Office of the Registrar.

## Office of Student Financial Aid

### Financial Aid Process

Instructions for accessing financial aid information on the Rush University website are emailed to all newly accepted students prior to enrollment. The Student Financial Aid webpage contains in-depth information on policies, procedures and financial aid awarding methodology.

Students starting in a term other than fall should submit financial aid application materials at least two months prior to their start date. Students must be enrolled at least half-time 4.5 credit hours for graduate/professional Students and 6 credit hours for undergraduate students and must be in a degree program or an approved certificate program to receive financial aid. To receive assistance, all appropriate forms and materials must be on file.

Students should expect to receive the majority of assistance in the form of loans. Because of limited institutional funding, financial aid packages will likely contain loans that accrue interest while the student is in school. For Rush Medical College students and College of Nursing students in the Generalist Entry Master's program, need-based grant and scholarship assistance is available through the Office of Student Financial Aid; funds are limited.

All Rush Medical College applicants who will be under 30 years old prior to the start of their program must provide parent data on the FAFSA (Free Application for Federal Student Aid) at <https://studentaid.gov> and meet the institutional criteria for eligibility. Visit the Office of Student Financial Aid webpage for details: [www.rushu.rush.edu/office-student-financial-aid](http://www.rushu.rush.edu/office-student-financial-aid).

Undergraduate students who have not earned a bachelor's degree may be eligible to receive grant assistance through federal and state need-based programs. Employment through the Federal Work-Study program may be possible throughout Rush University Medical Center and its affiliates. Federal Work-Study will be awarded as part of the financial aid package. It is the student's responsibility to secure employment. The Office of Student Financial Aid is available to assist students with locating jobs within the Medical Center and will update financial aid packages accordingly.

### Financial Aid Determination

Financial aid packages at Rush University are provided to assist students to pay for the cost of education. Financial need is the basic criterion for awarding of funds, and the student must complete a FAFSA (Free Application for Federal Student Aid) at [studentaid.gov](http://studentaid.gov) each year to determine need and eligibility. Students and family members will be expected to contribute toward educational expenses. The level of the expected contribution is determined by using a standard set of criteria to determine eligibility from information provided on the FAFSA form.

Submission of parent information for consideration of need-based institutional grants, scholarships and loans is required for Rush Medical College students and any dependent undergraduate students. Complete information about this policy can be found on the Office of Student Financial Aid webpage. Student financial aid counselors are available to consult and assist students and parents (with the student's authorization) about financial aid packages, and awards and services for a Rush University education. Students and authorized parents are encouraged to make use of these services.

### Financial Aid Awards

After evaluating student and family resources in addition to assistance from outside the University, the Office of Student Financial Aid will award students the federal, state and institutional funds they qualify for each academic year. In order to distribute available funds in the most equitable manner, the Office of Student Financial Aid establishes a formula that designates the sequence in which funds are awarded to students, as well as the maximum amount awarded under each program.

The formula provides for a specific amount of loans and employment before students are considered for grants. These formulas are applied consistently during any given year among all students at a given class level and in a given college, pending availability of funds. The formulas may be adjusted annually due to differences in the availability of funds from year to year and changes in eligibility requirements.

### Veterans Benefits

Rush University participates in federal veterans education benefits.

### Post-9/11 GI Bill

The Post-9/11 GI Bill provides tuition, fees, books/supplies and housing assistance to eligible veterans. Tuition and fees are paid directly to Rush by the United States Department of Veterans Affairs (VA). Tuition and fees assistance is capped at the national maximum of \$24,476.79 per academic year (Aug. 1, 2019 - July 31, 2020). Benefit rates vary based on the veteran's circumstances. Some veterans may be able to transfer their benefits to a dependent.

### Yellow Ribbon Program

Starting in the 2012-13 academic year, certain colleges at Rush University participate in the Yellow Ribbon Program. Veterans entitled to the maximum benefit rate are eligible to apply for additional tuition and fee amounts if their costs exceed the \$24,476.79 cap. The amount of additional assistance available and the number of students able to be supported is limited and varies by college.

Funds are awarded on a first-come, first-served basis. Students who have received Yellow Ribbon assistance will have preference for these funds in future academic years. Details are available on the VA's Yellow Ribbon Program information webpage.

### Montgomery GI Bill-Active Duty (MGIB-AD Chapter 30)

### Montgomery GI Bill-Selected Reserve (MGIB-SR Chapter 1606)

### Reserve Educational Assistance Program (REAP Chapter 1607)

### Veterans Educational Assistance Program (VEAP Chapter 32)

### Survivors and Dependents Assistance (DEA Chapter 35)

If a student qualifies for participation in more than one veterans education benefits program, the VA website provides a comparison tool to help determine which benefits might be appropriate.

Veterans interested in using their benefits at Rush for the first time should conduct the following:

1. Apply for benefits through the VA: If the veteran has never used their veterans benefits at an institution before, this step must be completed.
2. Submit form 22-1995 or form 22-5495 (as appropriate) online. If the veteran has used veterans education benefits before but is a first-time benefits user at Rush University, the appropriate form must be submitted.
3. Provide a copy of their eligibility letter from the VA (as well as any change of program forms from step two above) to the Office of Student Financial Aid before benefits can be certified with the VA.

All documents can be mailed, faxed, or scanned and emailed to the Office of Student Financial Aid. Please be sure to indicate name and student ID number (or Social Security number) on all documents.

More information about education benefits offered by the VA is available at [www.benefits.va.gov/gibill](http://www.benefits.va.gov/gibill).

### VA Pending Payment

Beginning Aug. 1, 2019, Rush University will not take any of the four following actions toward any student using VA Post-9/11 G.I. Bill (Ch. 33) or Vocational Rehabilitation and Employment (Ch. 31) benefits while their payment from the VA is pending to the educational institution:

- Prevent their enrollment
- Assess a late penalty fee

- Require they secure alternative or additional funding
- Deny their access to any resources (access to classes, libraries, or other institutional facilities) available to other students who have satisfied their tuition and fee bills to the institution

However, to qualify for this provision, such students may be required to produce the following:

- The VA's certificate of eligibility by the first day of class
- Written request to be certified
- Additional information needed to properly certify the enrollment as described in other institutional policies (see our VA school certifying official for all requirements).

### Satisfactory Academic Progress

The Higher Education Act of 1965, as amended by Congress, mandates institutions of higher education to establish minimum standards of satisfactory progress for students receiving federal financial aid. These standards apply to all federal Title IV aid programs, including the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, Federal Perkins Loan, Federal Stafford Loan, Federal PLUS Loan and Federal College Work-Study programs.

Accordingly, the Department of Education regulations require that Rush University's Office of Student Financial Aid monitor the academic progress of all financial aid recipients toward the completion of their degree. This process is called Satisfactory Academic Progress, or SAP.

This SAP policy is enforced in conjunction with all other institutional policies and procedures, including the academic progressions policies of Rush University's colleges and academic programs. For undergraduate and graduate students, the below criteria are checked at the end of each term. For medical students, the below criteria are checked annually at the end of spring term.

The Office of Student Financial Aid will factor in rounding up to two digits (66.67%) when calculating a student's eligibility for meeting the minimum pace of completion requirements.

### Enforcement

The Office of Student Financial Aid has the primary responsibility in enforcing the SAP policy. The Office of the Registrar and other Rush University offices that maintain student information relevant to the SAP policy shall provide such information, as requested by the Office of Student Financial Aid.

### SAP Requirements

SAP requirements vary by academic level (undergraduate, graduate and medical students). Please refer to the appropriate section to find the requirements that fit your academic program.

#### UNDERGRADUATE STUDENTS

SAP for undergraduate students is monitored using three factors: maximum time frame measurement, pace of completion and cumulative grade-point average, or GPA. SAP is measured at the end of each academic term once final grades are submitted.

#### Maximum Time Frame Measurement

Students may attempt up to 150% of the credits it normally takes to complete the program. The total allowable attempted hours are calculated by multiplying the hours required to complete the degree at Rush (including the general education courses required prior to entry in the program) by 1.5 and rounding down to the nearest whole number. For example, for a program that requires 107 credit hours to receive a degree at Rush (including the general education courses required prior to entry in the program), a student may attempt up to 160 hours.

#### Pace of Completion (POC)

Students must successfully complete at least 66.667% of the courses they attempt. This will be measured cumulatively over the course of the student's program. For the purpose of this measurement, all of the following are applicable:

- Successful completion is defined as a grade of A, B or C for a letter grade course, or a grade of P for a course that is pass/fail or pass/no pass. These courses are counted in both the attempted and completed hours totals.
- All other grades, including incomplete grades, are counted in the attempted hours total but not in the completed hours total. If an incomplete grade is later converted to a grade that is considered to be a successfully completed grade, the pace of completion percentage can be recalculated. It is the student's responsibility to notify the Office of Student Financial Aid when an incomplete grade has been converted.
- Students who drop courses but remain enrolled at the University will not have those dropped courses counted in the attempted hours total if they are dropped prior to the census date. Dropped courses after the census date will be counted in the attempted hours total.
- Repeated courses are counted as attempted hours during all attempts.

- Transfer credits (including the general education courses required prior to entry in the program) that count toward the student's current academic program count as both attempted and completed hours. Students who change majors at the same degree level will only have hours that were previously attempted counted in their cumulative totals if they are applicable to the new academic program.

#### Cumulative Grade-Point Average

Undergraduate students must maintain a minimum cumulative GPA of 2.0. Students who have a term GPA of less than 1.0 after their first term at Rush will be immediately placed on financial aid suspension.

#### GRADUATE STUDENTS

SAP for graduate students is monitored using three factors: maximum time frame measurement, pace of completion and cumulative GPA. SAP is measured at the end of each academic term once final grades are submitted.

#### Maximum Time Frame Measurement

Students may attempt up to 150% of the credits it normally takes to complete their program. The total allowable attempted hours are calculated by multiplying the hours required to complete the degree at Rush by 1.5 and rounding down to the nearest whole number. For example, a student may attempt up to 169 hours for a program that requires 113 credit hours to receive a degree at Rush.

Please note: Non-degree certificate programs are approved by the U.S. Department of Education for financial assistance at a specific number of credit hours. Regardless of a student's actual plan of study, maximum time frame is calculated using the number of hours for which the program was approved with the U.S. Department of Education.

#### Pace of Completion (POC)

Students must successfully complete at least 66.667% of the courses they attempt. This will be measured cumulatively over the course of the student's program. For the purpose of this measurement, all of the following are applicable:

- Successful completion is defined as a grade of A or B for a letter grade course, or a grade of P for a course that is pass/fail or pass/no pass. These courses are counted in both the attempted and completed hours totals.
- All other grades, including incomplete grades, are counted in the attempted hours total, but not in the completed hours total. If an incomplete grade is later converted to a grade that is considered to be a successfully completed grade, the pace of completion percentage can

be recalculated. It is the student's responsibility to notify the Office of Student Financial Aid when an incomplete grade has been converted.

- Students who drop courses prior to the close of the published add/drop period each term will not have those dropped courses counted in the total attempted hours.. Dropped courses after the close of the published add/drop period will be counted in the total attempted hours.
- Repeated courses are counted as attempted hours during all attempts.
- Transfer credits that count toward the student's current academic program count as both attempted and completed hours.
- Students who change majors at the same degree level will only have hours that were previously attempted counted in their cumulative totals if they are applicable to the new academic program.

#### Cumulative Grade-Point Average

Graduate students must maintain a minimum cumulative GPA of 3.0. Students who have a GPA of less than 2.0 after their first term at Rush will be immediately placed on financial aid suspension.

#### RUSH MEDICAL COLLEGE STUDENTS

SAP for Rush Medical College students is monitored using three factors: maximum time frame measurement, pace of completion and grade requirements. SAP is measured at the end of each academic year once final grades are in and at the time of awarding.

#### Maximum Time Frame Measurement

The normal time frame for completion of required coursework for the MD degree is four academic years. Due to academic or personal difficulties, a student may require additional time. In such situations, the Rush Medical College Committee on Student Evaluation and Promotion (COSEP) may establish a schedule for the student that departs from the norm and may require repeating a year of study. For the purposes of this financial aid policy, no more than three cohort years may be devoted to the first- and second-year curriculum and no more than three cohort years may be devoted to the third- and fourth-year curriculum, for a maximum time frame of six cohort years. Summer enrollment, if required, is considered part of the academic year for the purposes of this measure. Terms under an approved LOA do not count in this measure.

#### Pace of Completion (POC)

1. First-year students must complete at least 66.667% of their first-year curriculum with a grade of Pass (P), High Pass (HP), or Honors (H) during the cohort year. This includes repeated courses.
2. Second-year students must complete at least 66.667% of their second-year curriculum with a grade of Pass (P), High Pass (HP), or Honors (H) during the cohort year. This includes repeated courses.
3. Third-year students must complete at least 66.667% of the clerkships they attempt with a grade of Pass (P), High Pass (HP), or Honors (H) during the cohort year.

#### Grade Requirements

Rush Medical College academic progress is measured in terms of Honors, High Pass, Pass and Fail grades. A student must complete each required course/clerkship with a grade of Pass or better in order to graduate. A student who fails a course must retake it and earn a grade of at least Pass. A student who receives an Incomplete in a course must complete the course and earn at least a Pass.

#### Financial Aid Warning

Undergraduate and graduate students are allowed a financial aid warning period. Professional students enrolled at Rush Medical College are not allowed a financial aid warning period.

Undergraduate or graduate students who fail to meet the requirements of this satisfactory academic progress policy will be placed on financial aid warning for one term. With the exception of undergraduate students who have a first-term GPA of less than 1.0 and graduate students who have a first-term GPA of less than 2.0. In this case, that student would immediately be placed on financial aid suspension. Students will be allowed to continue on financial assistance during the warning period. Students placed on financial aid warning will receive a notification through their Rush email account. The notification will include SAP requirements, steps necessary to meet SAP in the upcoming term and the consequences for failing to meet SAP requirements by the end of the warning period.

Students will be placed on financial aid suspension if they fail to meet the standards of this SAP policy after the one-term financial aid warning period.

#### Suspension of Financial Aid Eligibility

- Professional students enrolled at Rush Medical College who fail to meet the requirements of this SAP policy will be placed on financial aid suspension.
- Undergraduate students who have a first-term GPA of less than 1.0 and graduate students who have a first-term GPA of less than 2.0 will be placed on financial aid suspension.
- Students who still fail to meet the requirements of this policy after their single term on financial aid warning will be placed on financial aid suspension.

Students who are suspended from financial aid eligibility will be notified through their Rush email account.

#### Appealing Suspension of Financial Aid Eligibility

Under extenuating circumstances, a student may appeal the suspension of their financial aid eligibility. Appeals from other parties on behalf of the student will not be accepted. All appeals should be submitted to the Office of Student Financial Aid in writing or by email to [Financial\\_Aid@rush.edu](mailto:Financial_Aid@rush.edu). Each appeal should include the following items:

- Signed letter from the student indicating the reasons why the standards of this policy were not met and what has changed in the student's situation that will allow satisfactory progress during the next evaluation period
- An academic plan for the remainder of the student's studies
- Any supporting documentation the student feels would support the appeal (as appropriate)

The Office of Student Financial Aid will review the appeal and notify the student of the appeal review results. Students whose appeals are approved will be placed on a financial aid probationary period for one term or for an appropriate duration depending on the academic plan provided.

If applicable, the probationary period will be defined to include checkpoints that must be achieved in order for the student to remain eligible for financial assistance. Students failing to abide by the terms of their probationary period will be suspended from financial aid after the one-term probationary period or in the case of a multi-term probationary period upon failure to maintain the minimum requirements of the probationary period requirements.

The decision of the Office of Student Financial Aid is final, binding and not subject to further appeal.

#### Reinstatement of Financial Aid Eligibility

A student's eligibility for financial aid will be reinstated when the standards of the SAP policy as outlined above have been successfully met.

### Educational Assistance Benefits (Tuition)

As part of our commitment to employee development and education, Rush offers the following:

#### Employee Enhancement Program

- Reimburses employees up to \$1,000 for costs of professional development seminars, conferences, etc.
- Participants must be employed by Rush at least three months.

#### Internal Degree Program

- Prepays the tuition for up to nine credit hours per term for full-time Rush employees enrolled in a Rush University professional program (excluding medical school) and six credit hours for part-time employees
- Participants must be employed by Rush for six months for undergraduate coursework and one year for graduate-level coursework
- Participants must remain employed by Rush for at least one year after obtaining an undergraduate degree and at least six months after obtaining a graduate degree

#### External Degree Reimbursement Program

- Reimburses employees 100% of out of pocket tuition costs
- Full-time employees may submit up to \$5,000 in tuition per year
- Part-time employees may submit up to \$2,500 in tuition per year
- Participants must be employed by Rush six months for undergraduate coursework and one year for graduate coursework
- Participants must remain employed by Rush for one year after obtaining an undergraduate degree and six months after obtaining a graduate degree

### Internal Degree Program - Dependents

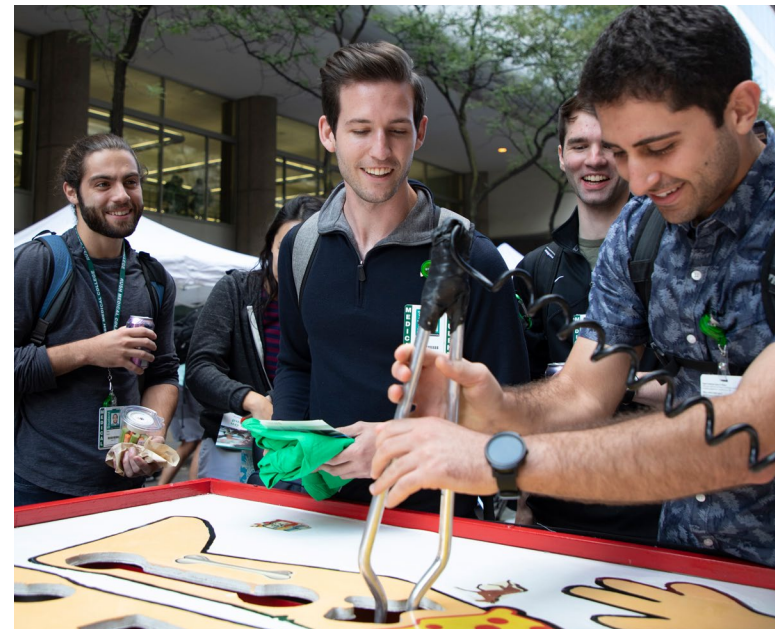
- Prepays the tuition for up to nine credit hours per term of Rush employees' spouses or dependents enrolled in a Rush University professional program (excluding medical school)
- Employees must be employed by Rush for six months for undergraduate course work and one year for graduate course work
- Employees must remain employed by Rush for at least one year after a dependent has obtained an undergraduate degree and for at least six months after a dependent has obtained a graduate degree

For more details about the programs and policies changes, visit Inside Rush at [insiderush.rush.edu](https://insiderush.rush.edu), click on "Human Resources," "Benefits" and then "Educational Assistance Benefits."



Rush University

Rush Medical College



## Welcome from the Dean



Welcome! As a student at Rush University, you have joined a historic institution that has contributed greatly to the development of medicine and health care. Rush is a caring institution that serves the needs of patients, students, faculty, staff and our community. Rush is committed to excellence in all that it does.

Chartered in 1837, Rush Medical College (RMC) has been a part of the Chicago landscape longer than any other health care institution. Times have changed since then, and medicine and health care have evolved. However, RMC's best traditions continue: hands-on learning, an unparalleled commitment to community service and experiences supported by outstanding role models. We continue to innovate and build the next generation medical college. RMC is a family of more than 2,600 faculty and staff, 550 medical students, and 750 residents and fellows.

Rush has produced skilled leaders in medicine and science, including thousands of excellent physicians. Explore the Rush University and Rush University Medical Center websites to discover the myriad of opportunities RMC offers in medical education, clinical care and biomedical research. Please let us know if we can help you in any way.

Badrinath R. Konety, MBBS, MBA  
Dean, Rush Medical College



## Mission

Through a supportive and dynamic learning community, Rush Medical College nurtures the development of empathic, proficient physicians dedicated to continuous learning, innovation, and excellence in clinical practice, education, research and service.

## Vision

Rush Medical College will be the global leader in student-centered, future-oriented medical education.

## Diversity and Inclusion Statement

Rush Medical College embraces the Rush University Medical Center Diversity Leadership Council vision for diversity and the Association of American Medical Colleges (AAMC) commitment to increasing diversity in medical schools. As a member of the AAMC, we are further guided by the AAMC's Group on Diversity and Inclusion definitions\*:

\*"Diversity as a core value embodies inclusiveness, mutual respect, and multiple perspectives and serves as a catalyst for change resulting in health equity." Recognizing the importance of addressing the issues related to those historically underrepresented in medicine and never losing sight of the ultimate goals of providing care to the underserved, promoting health equity and eliminating health disparities, Rush Medical College seeks to recruit, retain and develop a student body and physician workforce that will advance diversity across the entire professional spectrum of medical education.

\*\*"In this context, we are mindful of all aspects of human differences, such as socioeconomic status, race, ethnicity, language, nationality, sex, gender identity, sexual orientation, religion, geography, disability and age. Inclusion is a core element for successfully achieving diversity. Inclusion is achieved by nurturing the climate and culture of the institution through professional development, education, policy and practice. The objective is creating a climate that fosters belonging, respect and value for all and encourages engagement and connection throughout the institution and community."

Rush Medical College, appreciating that diversity and inclusion enhances the medical education environment and ultimately the overall health of our community, strives to create and support an environment where faculty, residents,

fellows, staff and medical students combine their differing backgrounds, diverse perspectives and unique skills as they work with peers to solve problems, enhance their ability to work with patients and develop new, effective ways to manage health, conduct research and deliver quality care. It is our goal to improve the health of the individuals and diverse communities we serve with a critical focus on the benefits of diversity in medicine and biomedical sciences. We believe this is an important factor in meeting our mission - not only by creating a diverse environment but also by influencing the potential for our students and physicians to succeed in our rapidly changing and diverse society.

Utilizing information provided by the Office of Integrated Medical Education and other data, Rush Medical College's Faculty Council is committed to implementing institutional policies, procedures, programs and initiatives designed to meet these stated diversity goals.

## Program Objectives

By graduation, a Rush Medical College student will achieve the RMC Program Objectives, which are key tasks essential to success as a physician. Our curriculum is designed to support these Program Objectives. The program objectives are key tasks that students will achieve by the time of graduation. They represent RMC's commitment to our students and are written as task statements deemed critical to becoming a successful physician. The program objectives inform curriculum development, as all session objectives are mapped to a course objective which is mapped to a program objective.

The RMC Program Objectives are organized around the following eight (8) roles that a physician plays and the foundational role of medical knowledge that supports them:

### Medical Knowledge:

Develop foundational knowledge in order to practice effective medicine. Understanding these foundations is critical to performing the various roles of a physician as delineated below.

- Apply the concepts of anatomy to medical practice
- Apply the concepts of biochemistry to medical practice
- Apply the concepts of embryology to medical practice
- Apply the concepts of genetics to medical practice
- Apply the concepts of histology to medical practice



- Apply the concepts of immunology to medical practice
- Apply the concepts of microbiology to medical practice
- Apply the concepts of pathology to medical practice
- Apply the concepts of pathophysiology to medical practice
- Apply the concepts of pharmacology to medical practice
- Apply the concepts of physiology to medical practice

### Advocate

Develop partnerships with patients and families to navigate the health care system to improve individual health outcomes. Promote public good through awareness of important health issues including disease prevention, health promotion, health protection and health equity.

- Recognize and respond to a patient's health needs by advocating for the patient within and beyond the clinical environment
- Recognize and respond to societal factors that impact the health communities and populations

### Collaborator

Pursue common goals with other professionals in the healthcare environment and community through relationships based on trust, respect, willingness to learn from others and effective communication.

- Work with colleagues to promote mutual understanding, manage differences and resolve conflicts
- Coordinate patient care through participation on intraprofessional and interprofessional teams.

### Communicator

Form strong therapeutic alliances with patients and their families by finding common ground, sharing information and managing care with the patient's needs, values and preferences in mind. Engage patients and families in their health care choices.

- Establish professional therapeutic relationships with patients and their families
- Engage patients and their families in developing and implementing treatment plans that reflect their needs and goals

### Educator

Demonstrate a lifelong commitment to continually enhancing practice. Implement an active, planned approach to fill gaps in knowledge, skills and attitudes required to deliver care. Educate peers, patients and families, the public, colleagues

and other health care professionals using methods appropriate for each audience.

- Establish self-directed learning practices to continually monitor for and address gaps in skills and knowledge throughout one's career
- Conduct an educational activity

### Leader

Engage others to implement high-quality, future-oriented and innovative health care practices.

- Contribute to the improvement of health care delivery in teams, organizations and systems
- Organize and lead a team to enhance success

### Practitioner

Apply medical knowledge, clinical skills and professional values in their provision of high-quality care. Collect and interpret information, make clinical decisions and carry out diagnostic and therapeutic interventions.

- Gather a history and perform a physical examination
- Create and prioritize a differential diagnosis
- Create and implement a treatment plan
- Summarize and share a clinical assessment and management plan

### Professional

Demonstrate a commitment to ethical practice, high personal standards of behavior, accountability to the profession, ongoing professional development and maintenance of personal well-being. Develop the identity of a physician.

- Act in accordance with the professional conduct, legal and ethical standards expected of the medical profession.
- Develop your professional identity as a physician
- Promote the emotional, physical and spiritual elements needed to maintain personal well-being in the service of one's self, colleagues and practice

### Scholar

Seek out and use scientific evidence to inform decision-making and develop the potential to contribute to original research.

- Retrieve, appraise, and apply valid evidence to answer a question about patient care
- Design a research study to address a gap in the medical literature

## Professionalism Statement and Standards

### Overview

"Professionalism is the basis of the medicine's contract with society." So begins the Preamble to the American Board of Internal Medicine's Physician Charter, a widely recognized and endorsed document detailing the roles and responsibilities of the modern physician in practice towards their patients, profession and society. It has been recognized for decades in American undergraduate medical education that not only does professionalism need to be modeled in the clinical setting, but taught and assessed throughout training, starting from entry to medical school. Developing and refining behaviors consistent with exemplary medical professionalism is an acquired skill, which requires teaching from the time of entry into medical school.

The expectations for trainees, whether in the undergraduate medical program or graduate medical program, are closely aligned. Furthermore, the expectations of students should be similar, but level-appropriate, to those for attending physicians with regards to medical professionalism and ethically sound behavior.

This document specifically defines (1) the value of professionalism in the Rush Medical College (RMC) curriculum, (2) professionalism standards for RMC students and (3) methods for reporting concerns about student professionalism.

### Professionalism in the RMC Curriculum

The Professional Role curriculum is designed to introduce students to both the fundamentals of medical professionalism and medical ethics, as well as provide guidance on both exemplary professional behavior and unprofessional student behavior. The teaching in the four-year curriculum is parallel to the routine professional expectations RMC has of students in both clinical practice, administrative responsibilities, and interpersonal interactions.

### Professionalism Standards for RMC Students

The following expectations are based on medical professionalism guidelines as set forth by the American Board of Internal Medicine Physician Charter. Students are expected to strive to model the highest standards of professionalism as members of the Rush community. Student professionalism is regularly assessed throughout the curriculum in end-of-course evaluations, including narrative evaluations. Students are expected to demonstrate professionalism in the following ways as outlined in the RMC Expectations for the Learning Environment:

### Classroom/Clinical Experiences:

- Being adequately prepared for learning activities in the classroom, laboratory, research and clinical settings
- Attending and participating in learning activities in an engaged, punctual and reliable manner
- Completing all course and administrative requirements as defined by the Office of Integrated Medical Education (OIME), course directors and faculty in a timely manner
- Dressing and conducting themselves appropriately to the activity in which they are participating, in a manner becoming of a member of the Rush community

### Feedback and Evaluation:

- Actively and appropriately seeking feedback to improve their own performance, and to accept constructive feedback openly and without hostility and accept responsibility for missteps
- Reflecting on their performance and educational experiences to inform their self-directed learning and study
- Recognizing personal limitations in knowledge, skills, and attitudes, and to seek help from faculty and peers as appropriate
- Providing constructive feedback and evaluation about the learning environment and educational experiences

### Interpersonal Behaviors:

- Treating faculty, residents, staff and fellow students with respect and collegiality, both in person and via social media and other digital platforms
- Resolving conflicts in an appropriate and professional manner

### Patient Care:

- Treating patients with kindness, compassion and respect, both in person and via social media and other digital platforms
- Respecting and preserving patient confidentiality as appropriate for patient care through the electronic health record and other digital platforms, and in person

### Personal Integrity and Academic Honesty:

- Adhering to the RMC Honor Code, Rush University Honor Code, and the Rush University Medical Center Code of Conduct
- Adhering to the ethical standards of our profession as described by the American Medical Association

- Acting as models of honesty and integrity at all times, in all interactions with patients, faculty and colleagues
- Addressing witnessed errors, rule violations and unprofessional behavior in a direct and respectful manner, including the reporting of such behaviors to the appropriate authority
- Refraining from use of illicit substances, in accordance with the law. Avoiding use of legal or prescribed substances to the point of impairment or dependency

### Methods for Reporting Professionalism Concerns

Various RMC personnel and committees work closely together in the evaluation and remediation of student professionalism concerns. Professionalism concerns can be reported in through the following mechanisms:

- **RMC Honor Code Council:** The Honor Code Council is a group of peer-elected medical students who review reports of potential Honor Code violations and recommends action as appropriate. As per the Honor Code Council Policies and Procedures, reports cannot be anonymous; they must contain the name of both the reporter and the student named in the violation. If an Honor Code violation is found to have occurred, or if the Council is unable to reach a conclusion, the report is passed directly to the Committee on Student Evaluation & Promotion (COSEP) for further evaluation and the final decision on action.
- **Special Committee on the RMC Environment (SCORE):** SCORE is another student-run organization which evaluates a wide range of reports regarding the learning environment. SCORE reporting can be anonymous, as per the SCORE Policies and Procedures, although submitters are encouraged to identify themselves to the committee. Occasionally, students submit reports of unprofessional behavior of other students to SCORE. If SCORE deems appropriate, these reports may be passed on to OIME for further evaluation and subsequently reported to COSEP.
- **RMC Early Concern Note (ECN):** Any faculty member may submit an Early Concern Note if he/she observes or learns of a minor professionalism lapse. ECNs are reported to the OIME and are reviewed by either the Assistant Dean of Preclerkship or the assistant dean of Clerkship Curriculum. The relevant dean will discuss the issue with the student. If the professionalism lapse is significant or is considered to be a part of a pattern of

behavior, it may be referred to COSEP for evaluation, as deemed appropriate by the relevant dean.

- **Student Evaluations:** Student professionalism is routinely assessed via clerkship director evaluations, narrative evaluations and student performance evaluations. If there are reports of unprofessional behavior on any of these evaluations, these reports will be evaluated and addressed in the same manner as ECNs.
- **Rush University Student Complaint Portal:** Any Rush University student can report complaints through the Rush University Student Complaint Portal. Rush University will review or refer the complaints submitted through this portal to determine the appropriate follow-up.
- In addition to the above methods, faculty, staff, and students are encouraged to report any concerns regarding professionalism to the relevant course/clerkship director or any OIME dean. Major lapses in professionalism should be **immediately** reported to any OIME dean.

### Conclusion

This document stands as a comprehensive overview of the role of professionalism in the Rush Medical College curriculum and in student assessment and promotions. This document will be reviewed and updated periodically by the professional role leader of Rush Medical College.

## Graduation Requirements (Class of 2024)

The following are prerequisites to the granting of the Doctor of Medicine, or MD, degree by Rush University for students graduating in 2024.

- The student must have successfully completed the medical college curriculum or its equivalent, in accordance with the requirements of the medical college and COSEP.
- The student must pass USMLE Step 1, USMLE Step 2 Clinical Knowledge and USMLE Step 2 Clinical Skills by deadlines set by OIME.
- The student must complete requirements for graduation within a maximum of 58 months of active enrollment (excluding leave of absence) beginning from the time of matriculation.
- As a part of any remediation plan, COSEP may require additional weeks of instruction depending upon the progress made by an RMC student.

- By Nov. 30 of the calendar year prior to the year of expected graduation, students must: (a) have passed all required M3 core clerkships and (b) be scheduled for all elective clerkship requirements.
- Approval for graduation by a vote from COSEP.

### Notification of Failure to Meet Graduation Requirements:

If the student is reasonably expected not to be able to fulfill the graduation requirements, OIME will notify the residency program director(s) where the student has matched. If the inability to graduate is determined prior to the Match, the student and OIME must notify the National Resident Matching Program (NRMP) that the student is withdrawing from the Match. The student must notify all of the programs to which he/she applied that he/she is withdrawing from the Match.

## Admissions Requirements

Applicants must meet the following minimum requirements to be considered for admission to the MD program:

- U.S. citizenship, permanent residency of the United States or Deferred Action for Childhood Arrival (DACA) status
- Completion of a bachelor's degree from a four-year college or university accredited in the United States or a Canadian-based institution
- Completion of the Medical College Admissions Test (MCAT)
- As applicable, for post-baccalaureate coursework: Submission of grades through AMCAS for at least 24 hours of post-baccalaureate coursework achieving a strong academic foundation in the basic sciences

Information on the admissions process can be found on the Rush Medical College admissions webpage.

## Prematriculation Recommendations and Competencies

Rush Medical College does not require specific coursework for admission. We strongly encourage applicants to follow their own interests and passion whether in the liberal arts, social or basic sciences. We value students who demonstrate intellectual curiosity, with evidence of broad training and in-depth exploration and achievement in a particular area(s) of knowledge.

The curriculum at Rush Medical College is academically challenging, rigorous and integrates all basic sciences and clinical components in a flipped classroom method without lectures. It is learner centered, competency based and requires mastery of academic content. We therefore focus on a competency-based model for requirements where emphasis is placed on mastery rather than number of courses. We recommend that applicants have a strong foundation in biochemistry, molecular and cellular biology and engagement in the social and behavioral sciences. We recommend applicants seek exposure and engagement in the following core competencies:

- Intellectual engagement in the humanities (which may include coursework or research, for example) that emphasizes the written and verbal communication of ideas and concepts with an understanding of their historical and societal background and relevance
- Intellectual engagement in the field of biology (includes coursework and may include laboratory experience) that encompasses the core concepts of cell and developmental biology, molecular biology and genetics
- Courses offering a social science or philosophical context (such as philosophy, history, anthropology or psychology) can provide future doctors with insights that are crucial to the discharge of their professional responsibilities
- Intellectual engagement in the field of chemistry that encompasses core concepts of biochemistry and biologically applicable elements of inorganic and organic chemistry
- Analytical thought and problem-solving skills as an integral and pervasive part of the majority of the curricular and extracurricular experiences

The AAMC Core Competencies for Entering Medical Students also offers additional information.

## Criminal Background Check and Drug Screening

### During Admission & Matriculation

As a medical school located in Illinois, Rush Medical College enforces the Medical School Matriculant Criminal History Records Check Act which states: a medical school located in Illinois must require that each matriculant submit to a fingerprint-based criminal history records check for violent felony convictions and any adjudication of the matriculant as

a sex offender conducted by the Department of State Police and the Federal Bureau of Investigation as part of the medical school admissions process. This criminal background check will occur through AMCAS (American Medical College Application Service) once an applicant has been offered an acceptance of admission.

In preparation for clinical rotations at John H. Stroger, Jr. Hospital of Cook County, all Rush Medical College students are also required to submit a urine sample under conditions arranged by Rush Medical College for a drug screening. This is completed during orientation through a process coordinated by the Student Health Service (Lifetime Medical Associates). Upon completion of the testing process, a report will be released to Rush Medical College.

All positive results on the criminal background check, the sex offender assessment and/or the drug screen are reviewed by the Office of Integrated Medical Education (OIME) in consultation with the Office of Legal Affairs and may result in the applicant's file being presented to the Committee on Student Evaluation and Promotion (COSEP) for review and action. COSEP may recommend the Rush Medical College may rescind the student's acceptance.

### Current Students

- Current students may be required to submit to either a criminal background check and/or drug screening for a clinical experience (Rush or non-Rush) which requires such verification.
- Enrolled students must inform OIME of any criminal convictions (other than a minor traffic offense) while enrolled at Rush Medical College.
- Students returning from a leave of absence must inform OIME of any criminal convictions (other than a minor traffic offense) while on leave of absence.

Refusal to comply with a required criminal background check and/or drug screening will result in a student's file being presented to COSEP for review. A positive result from any criminal background check or drug screening will result in the student's file being presented to the COSEP for review. Notification of criminal conviction (other than a minor traffic offense) or failure to notify OIME of criminal conviction (other than a minor traffic offense) will result in the student's file being presented to the COSEP for review.

## Rush University Immunization Requirements

Proof of immunity per Illinois state law College Immunization Code (effective August 2016): Immunization regulations for the state of Illinois require new students at Rush University born after Jan. 1, 1957 to show proof of immunity to measles, mumps, rubella, diphtheria, tetanus and meningococcal conjugate, and all new admissions under the age of 22 shall show proof of having at least one dose of the vaccine on or after 16 years of age.

### Additional RMC Immunization Requirements

To prepare for work in clinical settings, Rush Medical College (RMC) students must meet special compliance requirements. Immunization requirements follow national and regional recommendations for health care workers. The requirements include a documentation of positive serum titers to measles, mumps, rubella, Hepatitis B and varicella. Students also must have annual TB screening (Quantiferon Gold or PPD) and documentation of tetanus (Tdap) vaccination within the past 10 years.

### Documenting Immunization Compliance

All immunization compliance-related activities are covered by the student health insurance plan. The Medical Student Health Program (MSHP) at Lifetime Medical Associates is responsible for all compliance testing, vaccinations and management of exposures. Lifetime Medical Associates will administer a QuantiFERON Gold test (QFT-G) to all medical students during orientation.

For additional help with immunization compliance, please call the office to schedule an appointment, and bring a copy of your student health insurance card with you. Always let the front desk staff at Lifetime Medical know that you are a Rush Medical College student and that you need an appointment for a compliance-related visit.

### LIFETIME MEDICAL ASSOCIATES (LMA)

**Suwon (Vicki) Nopachai, MD, Director of Student Health  
Westgate Building (1645 W. Jackson St.), Suite 215  
(312) 942-8000**

**8 a.m. - 5 p.m., Monday - Friday**

If proof of immunization is required for an outside elective, required health forms may be emailed to the Associate Director of MSHP. Amanda Cockrell, LNP (Amanda\_L\_Cockrell@rush.edu), faxed to (312) 942-3551, or dropped off in the clinic. Prior to Lifetime Medical Associates releasing this information, students must have a release of information form on file.

## Technical (Non-Academic) Standards

Rush Medical College offers an undifferentiated MD degree affirming the general knowledge and skills to function in a broad variety of clinical situations and the capacity to enter residency training and qualify for medical licensure.

A candidate for the MD degree must have abilities and skills in six areas: observation, communication, motor, intellectual (conceptual, integrative and quantitative), behavioral and social, and demonstrate ethics and professionalism.

Essential abilities and characteristics required for completion of the MD degree consist of certain minimum physical and cognitive abilities and emotional characteristics to assure that candidates for admission, promotion and graduation are able to complete the entire course of study and participate fully in all aspects of medical training, with or without reasonable accommodation.

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our I CARE core values (innovation, collaboration, accountability, respect and excellence) translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility. We encourage students with disabilities to disclose and seek accommodations.

**Observation:** Students should be able to obtain information from demonstrations and experiments in the basic sciences. Students should be able to assess a patient and evaluate findings accurately. These skills require the use of vision, hearing and touch, or the functional equivalent.

**Communication:** Students should be able to communicate with patients in order to elicit information, detect changes in mood and activity, and to establish a therapeutic relationship. Students should be able to communicate via English effectively and sensitively with patients and all members of the health care team both in person and in writing.

**Motor:** Students should, after a reasonable period of time, possess the capacity to perform a physical examination and perform diagnostic maneuvers. Students should be able to execute some motor movements required to provide general care to patients and provide or direct the provision of emergency treatment of patients. Such actions require some

coordination of both gross and fine muscular movements balance and equilibrium.

**Intellectual, conceptual, integrative and quantitative abilities:** Students should be able to assimilate detailed and complex information presented in both didactic and clinical coursework, and engage in problem solving. Students are expected to possess the ability to measure, calculate, reason, analyze, synthesize and transmit information. In addition, students should be able to comprehend three-dimensional relationships and to understand the spatial relationships of structures and to adapt to different learning environments and modalities.

**Behavioral and social abilities:** Students should possess the emotional health required for full utilization of their intellectual abilities, the exercise of good judgment, the prompt completion of all responsibilities attendant to the diagnosis and care of patients, and the development of mature, sensitive and effective relationships with patients, fellow students, faculty and staff. Students should be able to tolerate physically taxing workloads and to function effectively under stress. They should be able to adapt to changing environments, to display flexibility and learn to function in the face of uncertainties inherent in the clinical problems of many patients. Compassion, integrity, concern for others, interpersonal skills, professionalism, interest and motivation are all personal qualities that are expected during the education processes.

**Ethics and professionalism:** Students should maintain and display ethical and moral behaviors commensurate with the role of a physician in all interactions with patients, faculty, staff, students and the public. The student is expected to understand the legal and ethical aspects of the practice of medicine and function within the law and ethical standards of the medical profession.

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program should contact the Office of Student Disability Services to confidentially discuss their accommodations needs. Given the clinical nature of our programs, time may be needed to create and implement the accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Disability Services to learn more about accommodations at Rush University.

Marie Ferro-Lusk, MBA, MSW, LSW, Manager, Office of Student Disability Services

Rush University, 600 S. Paulina St., Suite 440, Chicago, IL 60612

(773) 942-5237, Marie\_S\_Ferro-Lusk@rush.edu

Process: Requests for accommodation by individuals with a disability as defined by the Rehabilitation Act of 1973 or the Americans with Disability Act will be considered on the basis of their abilities and the extent to which reasonable accommodation, if required, can be provided. The Rush University policy for students with disabilities describes the process for requesting an accommodation and is available in the catalog and on the website.

## Doctor of Medicine

### Rush Medical College: Academic Program

#### Academic Policies

The Committee on Student Evaluation and Promotion's Policy and Procedures contains detailed academic policies for Rush Medical College students. Please refer to that document for anything not detailed in this catalog.

#### Definition and Recording of Student Status

The following status designations of a student will be determined and recorded on the student transcript in accordance with these rules by the Office of Integrated Medical Education (OIME), the policies and procedures of the Committee on Student Evaluation and Promotion (COSEP) and the rules and policies of Rush University.

- **Full-time student:** Any student enrolled in RMC, paying tuition or appropriate fees and scheduled to take courses leading to the MD degree will be designated as a full-time student.
- **Part-time student:** RMC does not have a part-time student option available to students.
- **Independent Study (IS):** RMC does not have an Independent Study option available to students.
- **Leave of Absence (LOA):** A student who, for a predetermined period of time, is not paying tuition and not actively enrolled or pursuing requirements for an MD degree at the College will be on an LOA. See the Leave of Absence Policy for additional information.

- **Dismissal.** Dismissal is the permanent administrative termination of a student.
- **Withdrawal.** A student may voluntarily withdraw from RMC or may be administratively withdrawn if he/she fails to participate in courses according to the policies of RMC. Request for return from withdrawal must be submitted to OIME and will be adjudicated by COSEP.

For purposes of LOA designation and reporting to external agencies (e.g., as in letters of recommendation for degree programs or training fellowships), RMC students will be considered to be in Good Academic Standing (as per COSEP Policies and Procedures) if they meet all of the following criteria. This designation is not recorded on the student transcript.

- Student is not currently engaged in a Committee on Student Evaluation and Promotion (COSEP)-mandated remediation plan for academic, professionalism, or fitness for duty concerns
- Student has no current un-remediated course or clerkship failures
- Student has no current un-remediated failure to meet minimum passing level on an Objective Structured Clinical Examination (OSCE)
- Student has no current un-remediated failure on Step 1 or Step 2 (see COSEP Policies and Procedures for impact of this LOA on graduation requirements)
- Student has no current un-remediated failure to meet RMC Professionalism Standards including failure to complete academic requirements (including taking USMLE exams) by established deadlines

#### Remediation Plans

**Note:** The following is excerpted from the COSEP Policies & Procedures. See the full Policies and Procedures for more information.

On a case by case basis, COSEP will establish requirements for remediation plan for students with outstanding academic, professional, or fitness to practice deficiencies/concerns. In developing the remediation plan, COSEP may consult with a representative(s) from the OIME, the student and their adviser, and/or the course leader(s) to consider the needs of the individual students. COSEP will endeavor to develop a program that, if completed, will strengthen the student's prospects for successfully completing the remainder of his/her medical college program. The student

is responsible for complying with all the requirements of a given plan as specified.

**Student Notification of Remediation Plans:** The COSEP will notify the student in writing of any COSEP action and prescribed remediation plan within 10 business days of the COSEP meeting.

**Appeal of Remediation Plans:** A student may dispute part or all of the COSEP-designed remediation plan by written appeal to the chair of the COSEP within 10 business days of receiving notification of the plan. Appeals are reviewed by the full COSEP. Decisions of the COSEP regarding appeal of a remediation plan are final.

**Failure to Complete a Remediation Plan:** Failure to successfully complete a remediation plan will constitute grounds for dismissal.

#### Dismissal from Rush Medical College

**Note:** The following is excerpted from the COSEP Policies and Procedures. See the full Policies and Procedures for more information.

**In discussions of student dismissal, COSEP is empowered to make recommendations only; final decisions regarding dismissal are made by the dean of Rush Medical College.**

1. **Grounds for dismissal:** The following will constitute grounds for consideration of dismissal from the College:
  - A failure to successfully complete a COSEP-mandated remediation plan.
  - A subsequent presentation to COSEP for a new concern while currently on a COSEP-mandated remediation plan.
  - A failure in a second required core clerkship, (even if the prior failure had been successfully remediated) or a second failure of the same required clerkship.
  - A determination by COSEP that a student is not fit to practice medicine:
    - Failure to demonstrate the ability to be a competent and effective future physician.
    - Performance that does not reflect good moral character, sense of responsibility, sound judgment.
    - A single egregious act or pattern of unprofessional behavior.
  - Failure after three attempts to pass USMLE Step 1.

- Failure after three attempts to pass USMLE Step 2 (both Clinical Skills and Clinical Knowledge sections of this Step) within six months of the first attempt including any time on leave of absence (LOA).
- Failure to successfully pass USMLE Step 1 within nine months of completing M2 coursework including any time on LOA.
- Failure to successfully pass USMLE Step 2 within 12 months of completing M3 coursework including any time on LOA.
- Inability to successfully complete all M1 and M2 requirements (including USMLE Step 1) within three years of matriculation (excluding time on LOA).
- Inability to successfully complete all M1, M2, and M3 requirements within four years of matriculation (excluding time on LOA).
- Inability to successfully complete all requirements for graduation within five years of matriculation (excluding time on LOA).

#### 2. Procedure for COSEP recommendation for dismissal:

- The student will meet criteria for dismissal as set forth in the COSEP Policies and Procedures in the immediately preceding section.
- COSEP will review the entire academic record of the student while at RMC.
- A recommendation for dismissal must be approved by COSEP by a majority of the voting members present by secret ballot. Faculty will recuse themselves from discussion and/or voting in accordance with the COSEP Policies and Procedures and the RMC Prevention of Conflicts in Assessment and Promotion Policy. Course directors and required clerkship directors must recuse themselves from voting if the student presented has previously failed their course/clerkship.
- Following a vote for dismissal, based on an individualized assessment of each student, COSEP will determine the level of student's participation in the curriculum while awaiting the COSEP appeal process.
- The chair of the COSEP will notify both the student and the dean in writing of the COSEP's recommendation for dismissal within two business days of the COSEP meeting. The chair of the COSEP will notify the student in writing of the opportunity to meet with COSEP (called Student Appeal to COSEP). The student should submit in writing to the chair of COSEP his or

her intent to appeal this decision within 10 business days of the receipt of notification for a recommendation for dismissal. If a student fails to submit a request for appeal within this time, the student's right to appeal will be forfeited and the COSEP's recommendation for dismissal will be forwarded to the dean of Rush Medical College.

- The chair of COSEP will also determine a deadline for completion of the appeal process should the student elect to appeal. If a student fails to complete the appeal process within this deadline the recommendation for dismissal will be forwarded to the dean of Rush Medical College.

### 3. Procedure for Student Appeal to COSEP:

- The student will submit the request for appeal to COSEP and the appeal will be scheduled as outlined above. The chair of COSEP will determine a deadline for the student to notify COSEP if he/she will have legal representative at the appeal.
- During the appeal, the student may be accompanied by a representative, who may be an attorney. If the representative is an attorney, the representative will be limited to advising the student and will not be permitted to participate directly in the meeting. If the student is accompanied by an attorney, COSEP may also have an attorney present to advise the chair and Committee members. If the representative is an advocate, the representative may be invited to speak on the student's behalf but will not be permitted to participate directly in the meeting.
- A vote as to whether or not to uphold the dismissal recommendation will be taken by secret ballot, and the result will be determined by a majority vote of a quorum present.
  - Successful appeal: If the recommendation for dismissal is overturned, then COSEP will develop a remediation plan.
  - Unsuccessful appeal: If the recommendation for dismissal upheld, the COSEP recommendation will be forwarded to the dean of Rush Medical College.
  - The student will be notified in writing of the COSEP vote and decision within two business days of the COSEP meeting.

### 4. Dean's Appeal Procedure:

- Students who have an unsuccessful appeal of a dismissal recommendation of COSEP will have an opportunity to appeal the dismissal recommendation to the dean. The student must request such an appeal to the dean in writing within 10 business days from his/her receipt of the chair's notice of unsuccessful appeal. If a student fails to submit a request for appeal within this time, the student's right to appeal to the dean will be forfeited.
- An appeal of the COSEP recommendation will be considered by the dean only in the following circumstances:
  - The existence of procedural error(s) is so substantial that it would likely alter the ultimate outcome
  - Presentation of new and significant evidence which was not reasonably available at the time of the initial COSEP review or COSEP appeal and would likely alter the ultimate outcomes
  - The outcome imposed is substantially disproportionate to the violation
  - A conflict of interest not previously addressed at COSEP or COSEP appeal level
- The dean has the option to have the student appeal heard by a panel of three faculty (such faculty shall have a background in medical education, shall not currently sit on COSEP, and shall have no conflict of interest with the student) or hear the appeal directly. The dean or the panel shall have the hearing within 10 business days of the student's notification to pursue an appeal to the dean. Reasonable delays to this timeline may be allowed, if requested in writing by the student and approved by the dean.
- The chair of the COSEP will prepare the student's COSEP file in advance for presentation to the dean or the faculty panel. The student may submit additional material on their behalf at this time, in accordance with the grounds for appeal as stated above.
- The student is allowed to speak on their own behalf. The student may be accompanied by a representative, who may be an attorney. If the representative is an attorney, the representative will be limited to advising the student and will not be permitted to participate directly in the meeting. If the representative is an advocate, the representative may be invited to speak on the student's behalf but will not be permitted to

participate directly in the meeting. The dean or panel, as applicable, may have an attorney present who will serve only in an advisory capacity.

- The chair of COSEP and members of OIME will present the basis for the COSEP recommendation of dismissal to the dean or the faculty panel. The dean or the panel will review the basis of the recommendation and the process followed by OIME and COSEP.
- The dean will review the recommendations from both COSEP and the faculty panel, if impaneled, and render the final decision for the student. The dean will endeavor to issue a final decision in writing to the student within 10 business days of the receipt of panel review recommendations or the appeal meeting with the student, if the dean elects to hear the appeal directly.

## Doctor of Medicine (MD): Curriculum

### First and Second Years

First Year Required Courses	Credits
RMD-560 The Foundation of Medical Practice	1
RMD-561 Host Defense and Response	1
RMD-574 Vital Fluids	1
RMD-575 Vital Gases	1
RMD-563 Food to Fuel	1
RMD-564 Movement and Mechanics	1
RMD-565 Brain, Behavior and Cognition	1
RMD-580 Foundations of Research Methods <i>(This course is taken three times in first year)</i>	1
IPE-502 Interprofessional Patient Centered Teams <i>(This course is taken over fall and spring semesters of the first year)</i>	Non Credit

Non-credit elective courses may be taken in parallel with the required first-year curriculum.

First Year Electives	Credits
RMD-540 Humanities in Medicine I	1
RMD-541 Humanities in Medicine II	1
RMD-542 Spanish for Medical Professionals I	1
RMD-543 Spanish for Medical Professionals II	1
RMD-570 Clinical Genetics I	1
RMD-571 Clinical Genetics II	1
RMD-780 Basic Biomedical Research I	1
RMD-781 Basic Biomedical Research II	1

### Second Year Required Courses

Second Year Required Courses	Credits
RMD-566 Reproduction and Sexuality	1
RMD-567 Growth, Development and the Life Cycle	1
RMD-569 Complex Cases and Transition to Clerkship	1
RMD-576 Introduction to Hematology	1
RMD-577 Introduction to Oncology	1
RMD-580 Foundations of Research Methods <i>(This course is taken twice in the second year)</i>	1

### USMLE Step 1

Prior to the start of the third year, students must take the United States Medical Licensing Examination (USMLE) Step 1. Students who do not pass USMLE Step 1 are required to discontinue the third year curriculum for remediation. Students who fail the USMLE Step 1 are removed from clinical rotations and placed on a LOA to the beginning of the next M3 year, provided a passing score is achieved. See COSEP Policies and Procedures for additional information.

### Third and Fourth Years

Prior to the start of the third year, students participate in the Clinical Resources and Skills for the Hospital (CRASH) course, which is an intensive review of clinical skills.

#### Third Year

The third year involves 42 clinical weeks in required core clerkships in internal medicine, neurology, pediatrics, psychiatry, obstetrics/gynecology, surgery and primary care. There are six weeks of time (four before or after the primary care clerkship, and two following the obstetrics and gynecology clerkship) that students may use to take non-credit elective courses for which they are eligible.

Third Year	Credits
MED-703 Core Clerkship: Internal Medicine	8
NEU-701 Core Clerkship: Neurology	4
OBG-703 Core Clerkship: Obstetrics & Gynecology	6
PED-701 Core Clerkship: Pediatrics	8
PSY-701 Core Clerkship: Psychiatry	4
RMD-701 Core Clerkship: Primary Care	4
SUR-701 Core Clerkship: Surgery	8

#### Fourth Year

The fourth year involves a required emergency medicine core clerkship, a required senior sub-internship, a clinical bridge course to prepare students for residency and a series of elective clerkships which ultimately comprise a minimum of 44 total weeks. Of the 32 weeks of required student-chosen electives, up to 12 weeks of elective study may take place at other Liaison Committee on Medical Education (LCME) — or Accreditation Council for Graduate Medical Education (ACGME)-accredited institutions and a maximum of 12 weeks of elective rotations may be taken in a single subspecialty.

Fourth Year	Credits
RMD-722 Clinical Bridge Course	2
EMD-703 Core Clerkship: Emergency Medicine	4
<i>Choose one of the following subinternship courses:</i>	
FAM-710 Subinternship: Family Medicine	4
MED-710 Subinternship: Internal Medicine	4
PED-710 Subinternship: Pediatrics	4
SUR-710 General Surgery Subinternship	4

### Electives

Students are required to take 32 weeks of electives. Please note: Only elective weeks taken during the student's M4 year count toward this requirement. Clinical elective rotations taken in other years cannot contribute toward the fulfillment of the 32 weeks of required electives.

#### USMLE Step 2

All students must take and pass both the Clinical Knowledge (CK) and Clinical Skills (CS) components of USMLE Step 2 during the student's fourth year by a date determined by the OIME. Failures on either component are reported to the COSEP. See COSEP Policies and Procedures for additional information.

### Specialty Curriculum Programs

#### Family Medicine Leadership Program (FMLP)

The Family Medicine Leadership Program, or FMLP, gives students the opportunity to engage in enhanced primary care clinical training and experiences throughout their four years of education. Students in the FMLP will participate in a curriculum specifically geared toward the tenets of a career in family medicine, emphasizing the impacts of family and community on health, the role of interdisciplinary care, and the development of skills in leadership and scholarly pursuit.

A maximum of five students will be admitted per cohort. Students register for the pass/fail course FAM 705 for every term in which they are enrolled in the FMLP. Students who desire to change paths during medical school may opt out of the FMLP.

- FAM-705 Family Medicine Leadership Program (FMLP)  
Credit(s): 1

#### Health Equity & Social Justice Leadership Program

The Health Equity & Social Justice Program gives students the opportunity to engage enhanced clinical training and experiences focused on themes of global and local health equity/social justice. Students in the program will participate in a curriculum specifically geared toward a career focused on vulnerable populations, health equity and global health.

A maximum of twenty students will be admitted per cohort. Students register for the pass/fail course RMD 572 for every term in which they are enrolled in the Health Equity Program. Students who desire to change paths during medical school may opt out of the Health Equity Program.

- RMD-705 Health Equity Program: Global and Local Perspective Credit(s): 1



Rush University

College of Nursing



## Welcome to the College of Nursing



On behalf of the faculty of Rush University College of Nursing, I extend to you our warmest welcome. We are pleased and honored that you have chosen to further your education at Rush and are committed to having the degree that best prepares you for a rich and fascinating career in nursing and health care. Rush is renowned for its integration of education and practice, and you will have the opportunity to work with extraordinary scholars and clinicians throughout your journey in the College of Nursing. Please know that you can feel comfortable calling on me and any other member of the faculty to meet your personal learning needs.

Your success is our success and every member of our faculty and staff will do what it takes to ensure not only your timely completion of the program, but a quality degree that will groom you for health care leadership.

Again, our warmest welcome to the Rush University College of Nursing and Rush University Medical Center.

Barbara A. Swanson, PhD, RN, FAAN, ACRN  
Acting Dean, College of Nursing



## College of Nursing Description

Rush University College of Nursing is a private, not-for-profit graduate college of nursing. It is currently comprised of three degree programs — Master of Science in Nursing (MSN), Doctor of Nursing Practice (DNP) and Doctor of Philosophy in Nursing Science (PhD) — as well as a post-graduate certificate program. The College of Nursing faculty thoroughly prepare students to advance the quality of patient care and nursing practice in a multitude of health care environments and to be leaders focused on improving health outcomes, whether at the bedside, in a research setting or directing an organization.

The education and preparation of students to meet the health needs of a culturally diverse society is facilitated at Rush by the integration of academic, research and clinical practice components. Rush students have the advantage of attending a private university that is a vital part of a nationally recognized academic medical center. This unique integration stimulates excellence in education, practice, scholarly activities, and professional leadership by the faculty and the graduates of the College of Nursing.

The MSN and DNP programs at Rush University College of Nursing are accredited by the Commission on Collegiate Nursing Education.

### College of Nursing Mission

The mission of Rush University College of Nursing is to educate a broadly diverse student body that will deliver exceptional health care, generate innovative knowledge and provide transformative leadership to improve health outcomes for all populations.

### College of Nursing Vision

The vision of the College of Nursing is to lead health care transformation through innovative nursing education, practice, research and scholarly inquiry.

### Philosophy

The College of Nursing philosophy expresses the beliefs of the faculty regarding the metaparadigm of nursing and nursing education.

### Person

The faculty believes that a person is a unique being who possesses innate dignity and worth with the right to self-determination. Persons live as individuals and as members of families, communities, and national and global societies.

### Environment

The environment includes the multiple systems in which persons interact. This environment includes personal, physical, family, community, societal, economic, cultural and political systems. Persons influence, and are influenced by, their environments.

### Health

Health is a dynamic state of well-being that interacts with personal factors and the environment. It is perceived in the context of a multi-system environment.

### Nursing

Nursing is both a discipline and a profession. The focus of the discipline is the generation of knowledge related to persons and their environments for the purpose of maximizing the well-being of individuals, families, communities and society through health promotion, restoration and maintenance. The focus of the profession is the care of individuals, groups and communities through application of discipline-specific and discipline-related knowledge. Nurses contribute both individually and collaboratively with other professionals to promote positive health outcomes. Nurses apply a professional code of ethics and professional guidelines to clinical practice, and demonstrate compassion, advocacy and cultural sensitivity.

### Nursing Education

The education of nurses is a process by which the knowledge, skills, values and culture of nursing are transmitted to the learner. The faculty believes that professional nursing education is accomplished in a university setting and in an environment where nursing education, practice and research are integrated. Nursing education is built upon knowledge from the sciences, arts and humanities so students understand and value the human experience and its relationship to health. Nursing faculty members foster student growth by providing learning experiences in a variety of health care settings so students can understand the complexity of health care and learn the nursing role. The education of nurses is an interactive process whereby students are actively engaged learners who take responsibility for their education and practice.

The curricula of the College of Nursing are designed to produce nurses who are the following:

- Competent, caring practitioners; lifelong learners that value scholarship; and collaborative members of interprofessional teams and leaders in the profession
- Clinical scholars who contribute to the scientific basis of nursing practice, improve clinical outcomes through evidence-based practice, and positively influence the profession and the health care system

## College of Nursing Diversity Statement

**The best future for nursing depends on our ability to prepare a broadly diverse student body to become nurse clinicians, researchers and leaders who will improve health care outcomes for all populations.**

The preparation of a diverse nursing workforce is paramount to the delivery of effective, culturally congruent and accessible health care in an increasingly diverse nation. A broadly diverse student body promotes an enriched environment and deeper learning for all students and a more capable health care workforce. Diversity is defined broadly and includes but is not limited to race, ethnicity, gender, sexual orientation, disability, age, religion and veteran status.

Rush University College of Nursing uses a holistic admissions process where a student's experiences, attributes and academic performance all have merit in making an admissions decision. Each candidate brings a unique set of personal attributes, characteristics, culture and experiences, but all students can contribute to the creation of a diverse and inclusive learning environment. These important elements are considered in combination with how the individual will contribute value as a health professions student and future nurse.

The Rush community strives to be an intentionally inclusive setting where students will thrive in learning, co-curricular and community experiences. An inclusive environment empowers all participants to reach their highest potential, learn from each other and develop a thoughtfulness that values diverse perspectives.

## Programs

The College of Nursing offers graduate nursing education that allows the student to exit with one of the following degrees:

- Master of Science in Nursing (MSN)
- Doctor of Nursing Practice (DNP)
- Doctor of Philosophy in Nursing Science (PhD)

Postgraduate certificate programs also exist in a few advanced practice specialties.

A set of core courses, or its equivalent, is required for every student. Advanced clinical specialty courses are required as determined by an area of advanced practice concentration. Cognate courses representing coursework from the

biological, behavioral and organizational sciences may also be required by each degree.

### Admission Entry Points

Several entry points are available depending on the educational goals and academic background of the applicant:

1. Students with a baccalaureate degree in another field may apply for the Master's Entry in Nursing (MSN) Clinical Nurse Leader for Non-Nurses program: Generalist Entry Master's (GEM).
2. RNs with a baccalaureate degree with an upper division major in nursing may apply directly for the MSN Nursing Leadership: Clinical Nurse Leader, advanced practice DNP or PhD degree options.
3. RNs with a master's degree in nursing may apply for DNP or PhD degree options.
4. RNs who already have an advanced practice graduate degree in nursing (MSN or DNP) who wish to specialize in a different clinical area may apply for a non-degree postgraduate certificate in selected specialty areas.
5. Non-nurses who hold a graduate degree in a health-related field will be considered for admission to the PhD program.

### Master's Entry in Nursing (MSN) Clinical Nurse Leader for Non-Nurses: Generalist Entry Master's (GEM)

The GEM program is a full-time, on-campus, 24-month program. Applicants must have earned a bachelor's degree in another field prior to matriculation. All prerequisite coursework must be completed prior to the application deadline. Students graduate with a Master of Science in Nursing (MSN) and the ability to sit for certification as a Clinical Nurse Leader.

### Master of Science in Nursing (MSN) Leadership: Clinical Nurse Leader for RNs

The MSN Clinical Nurse Leader program for RNs is a part-time, online, two-year program. The program is available to bachelor's-prepared RNs who wish to obtain a master's degree in nursing (MSN). Graduates have the ability to sit for certification as a Clinical Nurse Leader.

### Doctor of Nursing Practice (DNP)

There are currently 14 DNP tracks offered in BSN-DNP and MSN-DNP options. Some tracks are offered completely online - some in hybrid format with a portion of coursework

offered only on campus (see the College of Nursing webpage for details). The Nurse Anesthesia track is only offered on campus. Depending upon the area of specialization, most BSN-DNP options range between 64 and 71 credit hours. MSN-DNP options require a minimum of 30 credit hours of coursework.

All clinical specialty areas provide the requisite didactic and clinical coursework in order to sit for certification. Course requirements vary in each program track.

Some areas of focus have RN practice requirements that must be met prior to enrollment in the program. These program-specific requirements are delineated below under Program Specific Requirements.

Students are considered for admission to the DNP program in one of the following areas of focus:

### Doctor of Nursing Practice in a Clinical Specialty

Doctor of Nursing Practice in a Clinical Specialty  
BSN or MSN-prepared students select a specific clinical specialty track upon application to the DNP program. Students may choose an area of specialization in one of the following roles and populations:

- **Nurse Practitioner:**
  - Adult-Gerontology Acute Care (AGACNP)
  - Adult-Gerontology Primary Care (AGPCNP)
  - Family (FNP)
  - Neonatal (NNP)
  - Pediatric Primary Care (PNP)
  - Pediatric Acute Care (ACPNP)
  - Psychiatric-Mental Health (PMHNP)
- **Clinical Nurse Specialist:**
  - Adult-Gerontology Acute Care (AGACCNS)
  - Neonatal (NCNS)
  - Pediatric (PCNS)
- **Advanced Public Health Nursing (APHN)**
- **Nurse Anesthesia (CRNA)**

### Doctor of Nursing Practice in Leadership

MSN-prepared students select a specific leadership track based on their desire to improve health outcomes in systems or populations.

- Transformative Leadership: Systems
- Transformative Leadership: Population Health

### Doctor of Philosophy in Nursing Science (PhD)

The Doctor of Philosophy in Nursing Science (PhD) program is a minimum of 64 credit hours and can be taken as a three-year, full-time or four-year, part-time curriculum.

The PhD in Nursing Science is available to both bachelor's and master's-prepared nurses wishing to attain a PhD degree. Non-nurses who hold a graduate degree in a health-related field may also apply. We do not require specific work experience for admission to the program.

This program is online, but it also includes periodic visits to the Rush campus. The initial visit is in the first fall term, with subsequent visits for intensive learning sessions occurring every summer for the next three years.

## College Admission Requirements

All applicants applying to Rush University College of Nursing do so through a centralized application system, NursingCAS. Application materials (essay, references, transcripts, GRE scores if required, etc.) must be submitted directly to NursingCAS prior to the application deadline. Applicants will be invited to submit a supplemental application directly to the College of Nursing upon receipt of their NursingCAS application.

### Admission/Application Guidelines

All applicants will be evaluated on the following:

- A minimum of a bachelor's degree from an accredited institution.
- All calculated GPAs of 3.0 or higher (on a 4.0 scale).\*
- A completed application submitted to NursingCAS.
- A brief Rush supplemental application.
- Official transcripts from all accredited institutions of higher education attended, regardless of whether a degree was earned.
- A current resume or CV.
- Substantive personal essay statement.
- RN licensure in the United States (for advanced practice post-licensure programs).
- Three letters of recommendation from faculty and/or work managers (for post-licensure applicants: at least one letter must come from current or recent employer). Relationship of recommenders to you must be in a supervisory capacity. Recommendations from friends, relatives or co-workers will not be accepted and will cause your application to be delayed or denied. Please refer to the College of Nursing webpage admission guidelines for your specific program for more detailed recommender information.



- Graduate Record Examination (GRE) scores, if required.
  - The GRE is required for all applicants to the Nurse Anesthesia and PhD programs and cannot be waived.
  - The GRE can be waived for other programs under the following conditions:\*
    1. For the Master's Entry in Nursing (MSN) for Non-Nurses: Generalist Entry Master's (GEM), a cumulative GPA of 3.00 or higher.
    2. For the MSN and DNP postlicensure programs, a cumulative GPA of 3.00 or higher, a prelicensure nursing GPA of 3.0 or higher; and a graduate GPA (of a completed degree) of 3.5 or higher.
      - Post-graduate certificate students are not required to take the GRE.
- TOEFL (Test of English as a Foreign Language) scores, if required.
  - TOEFL is required for applicants who are non-native speakers of English. This requirement may be waived if the applicant has completed a minimum of three years of higher education and received their baccalaureate degree in the United States.
- All foreign institutions attended require course-by-course ECE, WES, or CGFNS transcript evaluation.

After an initial review of completed files, a subset of applicants are invited to interview with faculty.

\*Cumulative GPA calculated for all applicants, prerequisite science GPA for GEM applicants only, and prelicensure nursing GPA for all graduate programs except GEM.

### Program-Specific Requirements

**Generalist Entry Master's (GEM) applicants** must have all prerequisite courses completed by the application deadline.

**Advanced Practice applicants** must have the following experience by the application deadline:

- Adult-Gerontology Acute Care: minimum of six months of recent adult critical care or adult acute care nursing experience
- Adult-Gerontology Primary Care: preference is given to applicants with RN experience
- Family: preference is given to applicants with RN experience
- Neonatal: minimum of six months of recent inpatient neonatal nursing experience
- Nurse Anesthesia: minimum of one year (two years preferred) of recent adult critical care nursing experience

- Pediatric Acute Care: minimum of six months of recent inpatient pediatric nursing experience
- Pediatric Primary Care: preference is given to applicants with RN experience
- Psychiatric-Mental Health: preference is given to applicants with RN experience

All application materials are taken into consideration when evaluating an applicant.

Applicants must have earned a baccalaureate degree with a recognized upper-division major upon enrollment. The majority of credit toward the degree should be earned through university-level coursework. Students taking courses under Rush student-at-large status will neither be admitted nor allowed to matriculate as an enrolled student if their Rush GPA is below 3.0. A grade of B or better must be earned in any course taken at another institution or as a Rush student-at-large in order for it to be considered for transfer.

### Deadlines for Application

Current application deadlines for nursing programs may be obtained on the College of Nursing Program and Admission webpage. All application materials must be received by the indicated deadline. Applicants are encouraged to apply early in order to avoid missing deadlines due to a lack of required documentation.

### Technical Standards

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values — I CARE (innovation, collaboration, accountability, respect and excellence) — translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and create a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

If you had sufficient education would you be able to perform the following technical standards:

#### Acquire information

- Acquire information from demonstrations and experiences in nursing courses, such as lecture, group and physical demonstrations

- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval).
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies
- Identify information presented in images from paper, slides, videos and transparencies
- Recognize and assess patient changes in mood, activity and cognition, and verbal and non-verbal communication

#### Use and interpret

- Use and interpret information from assessment techniques/maneuvers, such as those involved in assessing respiratory and cardiac function, blood pressure, blood sugar, neurological status, etc.
- Use and interpret information related to physiologic phenomena generated from diagnostic tools (i.e., sphygmomanometer, otoscope, ophthalmoscope) during a comprehensive examination of a client or patient

#### Motor

- Possess psychomotor skills necessary to provide holistic nursing care and perform or assist with procedures, treatments and medication administration
- Practice in a safe manner and appropriately provide care in emergencies and life support procedures and perform universal precautions against contamination

#### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors and all members of the health care team during practicum and other learning experiences
- Accurately elicit information including a medical history and other information to adequately and effectively evaluate a client or patient's condition

#### Intellectual ability

- Measure, calculate, reason, analyze and synthesize data related to patient diagnosis and treatment of patients
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the advanced generalist-nursing role
- Synthesize information, problem-solve and think critically to judge the most appropriate theory or assessment strategy

- Ask for help when needed and make proper judgments of when a nursing task can or cannot be carried out alone

#### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to changing environments inherent to the classroom and practice settings

#### Character

- Demonstrate concern for others, integrity, accountability, interest and motivations are necessary personal qualities
- Demonstrate intent and desire to follow the ANA Standards of Care and Nursing Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine that they require reasonable accommodation to fully engage in the program, should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs. Given the clinical nature of our programs, time may be needed to create and implement the accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged.

To learn more about accommodations at Rush University please contact the Office of Student Accessibility Services:

Marie Lusk, MBA, MSW, LSW  
 Director, Office of Student Accessibility Services  
 Rush University  
 600 S. Paulina St., Suite 901  
 Chicago, IL 60612  
 (312) 942-5237  
 Marie\_Lusk@rush.edu

#### International Students

Students from other countries are welcome to apply. Limited financial aid is available. TOEFL is required for applicants who are non-native speakers of English. This requirement may be waived if the applicant has completed a minimum of three years of higher education and received their baccalaureate degree in the United States.

## Student Progression in the College of Nursing

Student progress in the College of Nursing is reviewed and evaluated in several ways. The progressions policies established by the faculty are interpreted and applied by the student's academic adviser, the Office of the Dean and the College of Nursing Progressions Committee. The College of Nursing reserves the right to request a leave of absence or the withdrawal of any student whose conduct, physical or mental health, or performance demonstrates lack of fitness for continuance in a health profession. Should a student's behavior come into question, policies and procedures to determine the student's continuing status in the college are delineated in the College of Nursing Student Guidebook.

Since much of the work in nursing assumes that students will achieve a progressively higher level of understanding and skill, high academic performance is expected. The individual student is responsible for acquiring knowledge inside and outside of formal classroom and clinical settings.

### Academic Progressions Policy

A student must achieve an A or B grade in all required clinical nursing courses. If a student receives a C grade in a single clinical didactic course or a single clinical practicum, the student must repeat the course prior to graduation. A student may repeat only one clinical didactic or clinical practicum in a program of study. An F or N grade in any required course places the student on academic probation and may result in dismissal from the program. A grade of F, N or a second C in a required clinical didactic or clinical practicum may result in dismissal from the program. Permission may be given to retake a course at the discretion of the Progressions Committee. If permitted, a student has only one opportunity to achieve a passing grade. An F or N grade in the repeated courses may result in dismissal.

Students in all graduate programs must maintain a cumulative 3.0 average in graduate coursework to remain in good academic standing. If a student's cumulative GPA drops below 3.0, they will be placed on academic probation. A student may enroll for no more than two consecutive terms as a probationary student. Students may be dismissed from the College of Nursing upon failing to achieve satisfactory academic standing in the required period of time or if the student incurs a second probationary event.

To be awarded a degree or certificate, a student must be in good academic standing at the completion of the program.

Please refer to the College of Nursing Student Guidebook for a complete review of the college academic progression policy.

## College of Nursing Committees

### Faculty Senate

The Faculty Senate is the senior representative and governing body for the College of Nursing faculty and operates as the Committee on Committees. The senate has eight elected members: six faculty members and two student representatives. Members of this body serve three-year terms.

### Standing Committees

The Standing Committees of the College of Nursing assist with the work of the college. The faculty elects members of the committees annually to serve three-year terms. Students are also elected to represent the student body on various committees. The committees include the following:

#### Admissions and Progressions

The Admissions and Progressions Committee is responsible for the review of all applicants to the College of Nursing and maintaining the admission standards and policies for all nursing programs. This joint committee is also charged with oversight of the progression standards and policies for all nursing programs and for the progress and performance review of all students.

#### Curriculum

There is a curriculum committee for each of the College of Nursing programs: MSN, DNP and PhD. These committees are charged with overseeing the quality and integrity of their respective curricula. The committees review all new courses and/or major changes in the curriculum, establish and monitor methodology for curriculum evaluation and provide overall consistency for curriculum development.

#### Diversity and Inclusion

The mission of the Diversity and Inclusion committee is to safeguard the well-being of those within and connected to the College of Nursing by promoting, monitoring and evaluating diversity and inclusion initiatives. The Diversity and Inclusion committee endeavors to engage students, faculty and staff in a welcoming and supportive environment whereby mutual respect and cultural competence are paramount. The committee works to ensure diversity and inclusion goals of other standing committees are supported, and strategies are coordinated and aligned to meet the University and College of Nursing strategic plan's diversity and inclusion goals.

#### Evaluation

This committee evaluates the integrity and quality of the academic enterprise in the College of Nursing using the CON

Evaluation Matrix, ensures the College of Nursing programs are future-oriented and innovative in their approach and align with College of Nursing and University strategic plans, and promotes communication across the three curriculum committees by meeting at least once per term with the three committee chairs to discuss curriculum quality issues and processes.

### Faculty Appointments and Promotions

This committee acts upon the appointments and promotions of faculty in accordance with the Rules for Governance.

### Faculty Development

The Faculty Development Committee performs a periodic needs assessment and establishes, implements and evaluates faculty orientation, mentoring and development programs in collaboration with the College of Nursing and University.

### Research

This committee establishes, implements and evaluates criteria for the distribution of funds allocated for faculty and student research activities in collaboration with the Office of Research and Scholarship, with emphasis on underserved populations. They also collaborate with the dean and the associate dean for research regarding matters pertaining to research enrichment and suggest measures for ongoing facilitation of research productivity for faculty and students.

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## CERTIFICATE

### Postgraduate and Postdoctoral Non-Degree Certificate

The Postgraduate Non-Degree certificate is intended for nurses who already have an advanced practice graduate degree in nursing (MSN or DNP) who wish to specialize in a different clinical area. The Postdoctoral Non-Degree Certificate is intended for nurses who already have an advanced practice doctorate of nursing practice (DNP) degree who wish to specialize in a different clinical area.

Students are expected to take the courses outlined in the program(s) of study provided below. In addition, it is expected that the student already has the equivalent to the Rush graduate core courses as part of their previous graduate program, as well as the specified additional courses listed for each certificate program. If these courses or their

equivalent have not been completed prior to admission, then they may be taken as part of the program of study. Review of these courses for equivalence and transfer credit will be done upon admission into the program.

#### Postgraduate Advanced-Practice Certificate Options

- Acute Care Pediatric Nurse Practitioner (AC PNP)
- Neonatal Nurse Practitioner (NNP)
- Psychiatric-Mental Health Nurse Practitioner (PMHNP)

#### Postdoctoral AdvancedPractice Certificate Option

- Adult-Gerontology Acute Care Nurse Practitioner (AGACNP)

## Post-Graduate Advanced Practice Certificate Options

### Area of Focus: Acute Care Pediatric Nurse Practitioner (ACPNP)

The following are prerequisite graduate level coursework (or equivalent) to be completed prior to, or as part of, the PGC program of study. These courses may be from an APRN graduate program from another institution or completed at Rush University. A gap analysis and individualized program of study will be completed for each matriculating student.

- Advanced pathophysiology
- Advanced pharmacology/applied pharmacology
- Advanced physiology
- Advanced health assessment/diagnostics
- Palliative care Training: ELNEC Pediatric, Palliative Care Certification, or Palliative Care Coursework to be completed prior to 557A
- Advanced primary care of the child (didactic/practicum)
- Transition to the APRN role

Specialty Curriculum Content	Credit Hours
NSG-557A Pediatric Acute Care I	3
NSG-557B Pediatric Acute Care II	3
	Subtotal: 6
Specialty Practica	Credit Hours
NRS-541P Specialty Practicum	1-12
	Credit Hours: (3) (252 Clock Hours)
NRS-600P Specialty Residency	1-7
	3 (252 Clock Hours)
	Subtotal: 6
	<b>Total: 12</b>

### Population/Role: Neonatal Nurse Practitioner (NNP)

The following are prerequisite graduate-level coursework (or equivalent) to be completed prior to, or as part of, the NNP PGC program of study. These courses may be from an APRN graduate program from another institution or completed at Rush University. A gap analysis and individualized program

of study will be completed for each matriculating student.

- Advanced pharmacology
- Advanced physiology
- Transition to the APRN role

Advanced-Practice Core	Credit Hours
NSG-547 Neonatal Pathophysiology	3
NSG-548 Advanced Neonatal Physical Assessment	3
	Subtotal: 6
Specialty Curriculum Content	Credit Hours
NSG-546 Devel Physiology Fetus/Neonates	3
NSG-549 Neonatal Pharmacotherapeutics	3
NSG-550A Neonatal Management I	3
NSG-550B Neonatal Management II	3
NSG-550C Neonatal Management III	3
	Subtotal: 15
Specialty Practica	Credit Hours
NRS-541P Specialty Practicum	1-12
	3 (252 Clock Hours)
NRS-600P Specialty Residency	1-7
	3 (252 Clock Hours)
	Subtotal: 6
	<b>Total: 27</b>

### Population/Role: Psychiatric-Mental Health Nurse Practitioner (PMHNP)

The following are prerequisite graduate-level coursework (or equivalent) to be completed prior to, or as part of, the PGC program of study. These courses may be from an APRN graduate program from another institution or completed at Rush University. A gap analysis and individualized program of study will be completed for each matriculating student.

- Advanced pathophysiology
- Advanced pharmacology
- Advanced health assessment
- Transition of APN role course

Specialty Curriculum Content	Credit Hours
NSG-576 Neuropathophysiology: Lifespan Approach	3
NSG-575 Psychopharmacology	3
NSG-534 Major Psychopathological Disorders	3
NSG-577A Diagnostics & Management I: Psychiatric Assessment Across Lifespan	3
NSG-577B Diagnostics & Management II: Evidence Based Treatment	3
NSG-577C Diagnostics & Management III: Group Therapy and Complex Care	3
	Subtotal: 18
DNP and Specialty Practica	Credit Hours
NRS-541P Specialty Practicum	1-12
NRS-600P Specialty Residency	1-7
	Subtotal: 12
	<b>Total: 30</b>

## Postdoctoral Advanced-Practice Certificate Option

### Population/Role: Adult-Gerontology Acute Nurse Practitioner (AGACNP)

All plans of study are individualized to the student, and additional courses may be required based on the student's previous graduate coursework.

of study will be completed for each matriculating student.

The following are prerequisite graduate-level coursework (or equivalent) to be completed prior to, or as part of, the PDC program of study. These courses may be from an APRN graduate program from another institution or completed at Rush University. A gap analysis and individualized program

- Advanced pathophysiology
- Advanced pharmacology/applied pharmacology
- Advanced health assessment across the lifespan
- Diagnostics for the APRN
- Transition to the APRN role
- Health promotion

Specialty Curriculum Content	Credit Hours
NSG-570A Pharmacotherapeutics Acute Care	3
NSG-571A Management: Adult/Gerontology I	3
NSG-571C Management: Adult/Gerontology Acute and Critical Illness I	4
NSG-571D Management: Adult/Gerontology: Acute & Critical Illness II	2
NSG-572 Quality & Safety for the Aging Adult	3
	Subtotal: 15
Specialty Practica	Credit Hours
NSG-606 DNP Specialty Practicum	1-12
NSG-607 DNP Immersion Residency	1-14
<i>Note: Additional practicum hours may be required by the area of concentration and/or individual student needs.</i>	Subtotal: 6
	<b>Total: 21</b>

## DOCTOR OF NURSING PRACTICE

### Doctor of Nursing Practice (BSN to DNP)

#### Area of Focus: Advanced Public Health Nursing

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians/leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and/or educational systems with diverse populations and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

#### Curriculum

Graduate Nursing Core (Transfer From Graduate Program)		Credit Hours
NSG-522	Applied Epidemiology & Biostatistics for Nursing Practice	3
NSG-523	Research for Evidence-Based Practice	3
		Subtotal: 6
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environments	3
NSG-602	Health Care Economics, Policy, Finance	3
		Subtotal: 6
Population/Role Cognates		Credit Hours
NSG-536	Principles of Case Management	3
NSG-565	Public Health Systems & the APHN Role	3
NSG-566	Population Assessment & Health Promotion Frameworks	3
NSG-567	Population Intervention Planning, Implementation & Evaluation	3
NSG-568	Environmental Health	3
NSG-611	Financial & Business Concepts	3
NSG-612	Appl Organiz Analysis/Mgt HR	3
NSG-613	Data and Decision Making for Strategic Outcomes Management	3
NSG-614	The Leader and Policy, Politics, Power, & Ethics	3
Cognates		9
The following courses are approved to be used to satisfy the Cognates Credit Hours requirement: HSM-688, NSG-534, NSG-572, NSG-578, NSG-675, NSG-679, or NSG-682		
		Subtotal: 36
DNP Practica and Project		Credit Hours
NSG-605	DNP Specialty Practicum	2 (168 Clock Hours)
NSG-606	DNP Specialty Practicum	1-12
		9 (756 Clock Hours)
NSG - 607	DNP Immersion Residency	1-14
		3 (252 Clock Hours)
		Subtotal: 14
		<b>Total: 62</b>

**Minimum credits required:** Successful completion of the APHN BSN to DNP track requires a minimum of 62 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

## Doctor of Nursing Practice (BSN to DNP)

### Population/Role: Acute Care Pediatric Nurse Practitioner (AC PNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 68 term hours of post-baccalaureate or 29 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Graduate Nursing Core		Credit Hours
NSG-521	Organizational & Systems Leadership	3
NSG-522	Applied Epidemiology & Biostatistics for Nursing Practice	3
NSG-523	Research for Evidence-Based Practice	3
NSG-524	Health Promotion in Individuals & Clinical Populations	3
		Subtotal: 12
Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Specialty Cognates		Credit Hours
NSG-551A	Advanced Primary Care of the Child I	3
NSG-556	Applied Pharmacology: Pediatric	3
NSG-557A	Pediatric Acute Care I	3
NSG-557B	Pediatric Acute Care II	3
		Subtotal: 12
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum [Primary Care Pediatric] [Acute Care Pediatric]	1-12 1 (84 Clock Hours) 5 (420 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 68</b>

**Minimum credits required:** Successful completion of the AC PNP BSN to DNP track requires 68 term hours as a minimum for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

**Palliative Care Training:** ELNEC Pediatric, Palliative Care Certification, or Palliative Care coursework to be completed prior to NSG 557A

## Doctor of Nursing Practice (BSN to DNP)

### Population/Role: Adult-Gerontology Acute Care Clinical Nurse Specialist (AGACCNS)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Graduate Nursing Core		Credit Hours
NSG-521	Organizational & Systems Leadership	3
NSG-522	Applied Epidemiology Biostats Nursing	3
NSG-523	Research for Evidence-Based Practice	3
NSG-524	Health Promotion in Individuals & Clinical Populations	3
		Subtotal: 12
Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment for Advanced Practice Nursing Across the Life Span	2
NSG-625L	Advanced Health Assessment for Advanced Practice Nursing Across the Lifespan: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-570A	Pharmacotherapeutics Acute Care	3
NSG-571A	Management: Adult/Gerontology I	3
NSG-571C	Mgt: Adult/Ger Acute & Critical Illness I	4
NSG-571D	Mgt: Adult/Ger Acute & Critical Illness II	2
NSG-572	Quality & Safety for the Aging Adult	3
NSG-679	Evidence-Based Teaching in Health Professions	3
		Subtotal: 18
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 5 (420 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 4 (336 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 74</b>

**Minimum credits required:** Successful completion of the AGACCNS BSN to DNP track requires a minimum of 74 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

## Doctor of Nursing Practice (BSN to DNP)

### Population/Role: Adult-Gerontology Acute Care Nurse Practitioner (AGACNP)

This area of focus is a post-master's practice doctorate that prepares graduates for systems-level leadership and improving outcomes in a variety of settings. Students considered for admission should have leadership experience.

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Graduate Nursing Core		Credit Hours
NSG-521	Organizational & Systems Leadership	3
NSG-522	Applied Epidemiology Biostats Nursing	3
NSG-523	Research for Evidence Based Practice	3
NSG-524	Health Promotion in Individuals & Clinical Populations	3
		Subtotal: 12
Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Adv Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-570A	Pharmacotherapeutics Acute Care	3
NSG-571A	Management: Adult/Gerontology I	3
NSG-571C	Mgt: Adult/Ger Acute& Critical Illness I	4
NSG-571D	Mgt: Adult/Ger Acute and Critical Illness II	2
NSG-572	Quality and Safety for the Aging Adult	3
		Subtotal: 15
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 4 (336 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 5 (420 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 71</b>

**Minimum credits required:** Successful completion of the AGACNP BSN to DNP track requires a minimum of 71 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

## Doctor of Nursing Practice (BSN to DNP)

### Population/Role: Adult-Gerontology Clinical Nurse Specialist (AGCNS)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Graduate Nursing Core		Credit Hours
NSG-521	Organizational & Systems Leadership	3
NSG-522	Applied Epidemiology Biostats Nursing	3
NSG-523	Research for Evidence-Based Practice	3
NSG-524	Health Promotion in Individuals & Clinical Populations	3
		Subtotal: 12
Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment-APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-534	Major Psychopathological Disorders	3
NSG-570B	Pharmacotherapeutics Primary Care	3
NSG-571A	Management: Adult/Gerontology I	3
NSG-571B	Management: Adult/Gerontology II	3
NSG-572	Quality & Safety for the Aging Adult	3
NSG-679	Evidence-Based Teaching in Health Professions	3
		Subtotal: 18
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 5 (420 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 4 (336 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 74</b>

**Minimum credits required:** Successful completion of the AGCNS BSN to DNP track requires a minimum of 74 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.



## Doctor of Nursing Practice (BSN to DNP)

### Population/Role: Adult-Gerontology Primary Care Nurse Practitioner (AGPCNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Graduate Nursing Core		Credit Hours
NSG-521	Organizational & Systems Leadership	3
NSG-522	Applied Epidemiology Biostats Nursing	3
NSG-523	Research for Evidence Based Practice	3
NSG-524	Health Promotion in Individuals & Clinical Populations	3
		Subtotal: 12
Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-534	Major Psychopathological Disorders	3
NSG-570B	Pharmacotherapeutics Primary Care	3
NSG-571A	Management: Adult/Gerontology I	3
NSG-571B	Management: Adult/Gerontology II	3
NSG-572	Quality & Safety for the Aging Adult	3
		Subtotal: 15
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 5 (420 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 4 (336 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 71</b>

**Minimum credits required:** Successful completion of the AGPCNP BSN to DNP track requires a minimum of 71 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

## Doctor of Nursing Practice (BSN to DNP)

### Population/Role: Family Nurse Practitioner (FNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 71 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Graduate Nursing Core		Credit Hours
NSG-521	Organizational & Systems Leadership	3
NSG-522	Applied Epidemiology Biostats Nursing	3
NSG-523	Research for Evidence Based Practice	3
		Subtotal: 9
Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-534	Major Psychopathological Disorders	3
NSG-566	Population Assessment and Health Promotion Frameworks	3
NSG-569	Maternal Child Mgt for FNP	3
NSG-570B	Pharmacotherapeutics Primary Care	3
NSG-571A	Management: Adult/Gerontology I	3
NSG-571B	Management: Adult/Gerontology II	3
		Subtotal: 18
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 71</b>

**Minimum credits required:** Successful completion of the FNP BSN to DNP track requires 71 term hours as a minimum for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hour may be required.

## Doctor of Nursing Practice (BSN to DNP)

### Population/Role: Neonatal Clinical Nurse Specialist (NCNS)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Graduate Nursing Core		Credit Hours
NSG-521	Organizational & Systems Leadership	3
NSG-522	Applied Epidemiology Biostats Nursing	3
NSG-523	Research for Evidence Based Practice	3
NSG-524	Health Promotion in Individuals & Clinical Populations	3
		Subtotal: 12
Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-547	Neonatal Pathophysiology	3
NSG-548	Advanced Neonatal Physical Assessment	3
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Specialty Cognates		Credit Hours
NSG-536	Principles of Case Management	3
NSG-546	Developmental Physiology Fetus/Neonates	3
NSG-549	Neonatal Pharmacotherapeutics	3
NSG-550A	Neonatal Management I	3
NSG-550B	Neonatal Management II	3
NSG-550C	Neonatal Management III	3
NSG-679	Evidence-Based Teaching in Health Professions	3
		Subtotal: 21
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 77</b>

**Minimum credits required:** Successful completion of the NCNS BSN to DNP track requires a minimum of 77 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

**Palliative Care Training:** ELNEC Pediatric, Palliative Care Certification, or Palliative Care Coursework to be completed prior to 551A

## Doctor of Nursing Practice (BSN to DNP)

### Population/Role: Neonatal Nurse Practitioner (NNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 68 term hours of post-baccalaureate or 56 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Graduate Nursing Core		Credit Hours
NSG-521	Organizational & Systems Leadership	3
NSG-522	Applied Epidemiology Biostats Nursing	3
NSG-523	Research for Evidence Based Practice	3
NSG-524	Health Promotion in Individuals & Clinical Populations	3
		Subtotal: 12
Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-533	Advanced Pathophysiology	3
NSG-537	Transition to the APRN Role	3
NSG-547	Neonatal Pathophysiology	3
NSG-548	Advanced Neonatal Physical Assessment	3
		Subtotal: 15
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-546	Developmental Physiology of the Fetus/Neonates	3
NSG-549	Neonatal Pharmacotherapeutics	3
NSG-550A	Neonatal Management I	3
NSG-550B	Neonatal Management II	3
NSG-550C	Neonatal Management III	3
		Subtotal: 15
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 68</b>

**Minimum credits required:** Successful completion of the NNP BSN to DNP track requires a minimum of 68 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

## Doctor of Nursing Practice (BSN to DNP)

### Population/Role: Nurse Anesthesia (CRNA)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Graduate Nursing Core		Credit Hours
NSG-521	Organizational & Systems Leadership	3
NSG-522	Applied Epidemiology Biostats Nursing	3
NSG-523	Research for Evidence Based Practice	3
NSG-524	Health Promotion in Individuals & Clinical Populations	3
		Subtotal: 12
Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 15
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
ANA-500	Neuroscience for Basic and Clinical Applications	3
NSG-541	Chemistry & Physics in Anesthesia	3
NSG-542	Nurse Anesthesia Pharmacology	3
NSG-543A	Anesthesia Principles I: Basic Principles	3
NSG-543B	Anesthesia Principles II: Advanced Principles	3
NSG-543C	Anesthesia Principles III: Obstetric & Pediatric	3
		Subtotal: 18
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 12 (1008 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 15 (1260 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 30
		<b>Total: 89</b>

**Minimum credits required:** Successful completion of the CRNA BSN to DNP track requires a minimum of 89 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

## Doctor of Nursing Practice (BSN to DNP)

### Population/Role: Pediatric Clinical Nurse Specialist (PCNS)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Graduate Nursing Core		Credit Hours
NSG-521	Organizational & Systems Leadership	3
NSG-522	Applied Epidemiology Biostats Nursing	3
NSG-523	Research for Evidence Based Practice	3
NSG-524	Health Promotion in Individuals & Clinical Populations	3
		Subtotal: 12
Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-536	Principles of Case Management	3
NSG-551A	Advanced Primary Care of the Child I	3
NSG-556	Applied Pharmacology: Pediatric	3
NSG-557A	Pediatric Acute Care I	3
NSG-557B	Pediatric Acute Care II	3
NSG-679	Evidence-Based Teaching in Health Professions	3
		Subtotal: 18
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 74</b>

**Minimum credits required:** Successful completion of the PCNS BSN to DNP track requires a minimum of 76 semester hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

**Palliative Care Training:** ELNEC Pediatric, Palliative Care Certification, or Palliative Care Coursework to be completed prior to 551A

## Doctor of Nursing Practice (BSN to DNP)

### Population/Role: Pediatric Nurse Practitioner (PNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Graduate Nursing Core		Credit Hours
NSG-521	Organizational & Systems Leadership	3
NSG-522	Applied Epidemiology Biostats Nursing	3
NSG-523	Research for Evidence Based Practice	3
NSG-524	Health Promotion in Individuals & Clinical Populations	3
		Subtotal: 12
Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-551A	Advanced Primary Care of the Child I	3
NSG-551B	Advanced Primary Care of the Child II	3
NSG-551C	Advanced Primary Care of the Child III	3
NSG-556	Applied Pharmacology: Pediatric	3
		Subtotal: 12
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 68</b>

**Minimum credits required:** Successful completion of the PNP BSN to DNP track requires a minimum of 68 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

## Doctor of Nursing Practice (BSN to DNP)

### Population/Role: Psychiatric-Mental Health Nurse Practitioner (PMHNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Graduate Nursing Core		Credit Hours
NSG-521	Organizational & Systems Leadership	3
NSG-522	Applied Epidemiology Biostats Nursing	3
NSG-523	Research for Evidence Based Practice	3
NSG-524	Health Promotion in Individuals & Clinical Populations	3
		Subtotal: 12
Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-533	Advanced Pathophysiology	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 12
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-534	Major Psychopathological Disorders	3
NSG-575	Psychopharmacology	3
NSG-576	Neuropathophysiology: Lifespan Approach	3
NSG-577A	Diagnostics & Management I: Psychiatric Assessment Across Lifespan	3
NSG-577B	Diagnostics & Management II: Evidence Based Treatment	3
NSG-577C	Diagn Mgt III: Group Therapy and Complex Care	3
		Subtotal: 18
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 68</b>

**Minimum credits required:** Successful completion of the PMHNP BSN to DNP track requires a minimum of 68 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.



## Doctor of Nursing Practice (MSN to DNP - APRN)

### Population/Role: Acute Pediatric Care Nurse Practitioner (ACPNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 29 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Specialty Cognates		Credit Hours
NSG-557A	Pediatric Acute Care I	3
NSG-557B	Pediatric Acute Care II	3
		Subtotal: 6
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum [Acute Care Pediatric]	1-12 3 (252 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 9
		<b>Total: 29</b>

**Minimum credits required:** Successful completion of the ACPNP MSN to DNP track for the APRN requires a minimum of 29 semester hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

A gap analysis will be performed and an individualized program of study will be developed based on previous graduate education completed with evidence of the following coursework:

- Advanced Health Assessment Across the Lifespan/ Diagnostics for the APRN
- Advanced Physiology and Advanced Pathophysiology
- Advanced Pharmacology and Pharmacotherapeutics
- Transition to the APRN Role
- Research
- Biostatistics/Epidemiology
- Advanced Primary Care of the Child Didactic

It is expected that previous clinical hours plus DNP Specialty Practicum and Immersion hours will be equal to or greater than 1000 clock hours.

\*Evidence of current APRN certification and active practice within the past two years required.

**Palliative Care Training:** ELNEC Pediatric, Palliative Care Certification, or Palliative coursework to be completed prior to NSG 557A

## Doctor of Nursing Practice (MSN to DNP - APRN)

### Population/Role: Adult-Gerontology Acute Care Nurse Practitioner (AGACNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-570A	Pharmacotherapeutics Acute Care	3
NSG-571A	Management: Adult/Gerontology I	3
NSG-571C	Mgt: Adult/Ger Acute& Critical Illness I	4
NSG-571D	Mgt: Adult/Ger Acute & Crit Illness II	2
NSG-572	Quality & Safety for the Aging Adult	3
		Subtotal: 15
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 1 (84 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 5 (420 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 9
		<b>Total: 38</b>

**Minimum credits required:** Successful completion of the AGACNP MSN to DNP track for APRNs requires a minimum of 38 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

A gap analysis will be performed, and an individualized program of study will be developed based on previous graduate education completed with evidence of the following coursework:

- Advanced Health Assessment Across the Life Span
- Advanced Pathophysiology
- Advanced Pharmacology
- Transition to the APRN Role
- Research
- Biostatistics/Epidemiology

It is expected that previous clinical hours plus DNP Specialty Practicum and Immersion hours will be equal to or greater than 1,000 clock hours.

## Doctor of Nursing Practice (MSN to DNP - APRN)

### Population/Role: Adult-Gerontology Primary Care Nurse Practitioner (AGPCNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-534	Major Psychopathological Disorders	3
NSG-570B	Pharmacotherapeutics Primary Care	3
NSG-571A	Management: Adult/Gerontology I	3
NSG-571B	Management: Adult/Gerontology II	3
NSG-572	Quality & Safety for the Aging Adult	3
		Subtotal: 15
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 2 (168 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 4 (336 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 9
		<b>Total: 38</b>

**Minimum credits required:** Successful completion of the AGPCNP MSN to DNP track for APRNs requires a minimum of 38 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

It is expected that previous clinical hours plus DNP Specialty Practicum and Immersion hours will be equal to or greater than 1,000 clock hours.

A gap analysis will be performed, and an individualized program of study will be developed based on previous graduate education completed with evidence of the following coursework:

- Advanced Health Assessment Across the Life Span
- Advanced Pathophysiology
- Advanced Pharmacology
- Transition to the APRN Role
- Research
- Biostatistics/Epidemiology

## Doctor of Nursing Practice (MSN to DNP - APRN)

### Population/Role: Psychiatric-Mental Health Nurse Practitioner (PMHNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-575	Psychopharmacology	3
NSG-576	Neurophysiology: Lifespan Approach	3
NSG-577A	Diagnostics & Management I: Psychiatric Assessment Across Lifespan	3
NSG-577B	Diagnostics & Management II: Evidence Based Treatment	3
NSG-577C	Diagn Mgt III: Group Therapy and Complex Care	3
		Subtotal: 15
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 41</b>

**Minimum credits required:** Successful completion of the PMHNP MSN to DNP track for APRNs requires a minimum of 41 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

A gap analysis will be performed, and an individualized program of study will be developed based on previous graduate education completed with evidence of the following coursework:

- Advanced Health Assessment Across the Life Span
- Advanced Pathophysiology
- Advanced Pharmacology
- Transition to the APRN Role
- Research
- Biostatistics/Epidemiology

It is expected that previous clinical hours plus DNP Specialty Practicum and Immersion hours will be equal to or greater than 1,000 clock hours.

## Doctor of Nursing Practice (MSN to DNP - non-APRN)

### Area of Focus: Advanced Public Health Nursing

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
		Subtotal: 6
Population/Role Cognates		Credit Hours
NSG-536	Principles of Case Management	3
NSG-565	Public Health Systems & the APHN Role	3
NSG-566	Population Assessment & Health Promotion Frameworks	3
NSG-567	Population Intervention Planning, Implementation & Evaluation	3
NSG-568	Environmental Health	3
NSG-611	Financial & Business Concepts	3
NSG-612	Applied Organizational Analysis & Management of Human Resources	3
NSG-613	Data and Decision Making for Strategic Outcomes Management	3
NSG-614	The Leader and Policy, Politics, Power & Ethics	3
		Subtotal: 27
DNP Practica and Project		Credit Hours
NSG-605	DNP Project	2 (168 Clock Hours)
NSG-606	DNP Specialty Practicum	1-12
		9 (756 Clock Hours)
NSG-607	DNP/Specialty Immersion Residency	1-14
		3 (252 Clock Hours)
		Subtotal: 14
		<b>Total: 47</b>

**Minimum credits required:** Successful completion of the APHN MSN to DNP track for non-APRNs requires a minimum of 47 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

The equivalent of Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.

## Doctor of Nursing Practice (MSN to DNP - non-APRN)

### Population/Role: Acute Care Pediatric Nurse Practitioner (ACPNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 68 term hours of post-baccalaureate or 29 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Specialty Cognates		Credit Hours
NSG-551A	Advanced Primary Care of the Child I	3
NSG-556	Applied Pharmacology: Pediatrics	3
NSG-557A	Pediatric Acute Care I	3
NSG-557B	Pediatric Acute Care II	3
		Subtotal: 12
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum [Primary Care Pediatric] [Acute Care Pediatric]	1-12 1 (84 Clock Hours) 5 (420 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 56</b>

**Minimum credits required:** Successful completion of the AC PNP MSN to DNP track for non-APRNs requires a minimum of 56 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

The equivalent of Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.

**Palliative Care Training:** ELNEC Pediatric, Palliative Care Certification, or Palliative Care coursework to be completed prior to NSG 557A

## Doctor of Nursing Practice (MSN to DNP - non-APRN)

### Population/Role: Adult-Gerontology Acute Care Clinical Nurse Specialist (AGACCNS)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-570A	Pharmacotherapeutics Acute Care	3
NSG-571A	Management: Adult/Gerontology I	3
NSG-571C	Management: Adult/Gerontology Acute and Critical Illness I	4
NSG-571D	Management: Adult/Gerontology: Acute & Critical Illness II	2
NSG-572	Quality & Safety for the Aging Adult	3
NSG-679	Evidence-Based Teaching in Health Professions	3
		Subtotal: 18
DNP Practica and Capstone		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 5 (420 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 4 (336 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 62</b>

**Minimum credits required:** Successful completion of the AGACCNS MSN to DNP track for non-APRNs requires a minimum of 62 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

The equivalent of Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.

## Doctor of Nursing Practice (MSN to DNP - non-APRN)

### Population/Role: Adult-Gerontology Acute Care Nurse Practitioner (AGACNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-570A	Pharmacotherapeutics Acute Care	3
NSG-571A	Management: Adult/Gerontology I	3
NSG-571C	Management: Adult/Gerontology Acute and Critical Illness I	4
NSG-571D	Management: Adult/Gerontology: Acute & Critical Illness II	2
NSG-572	Quality & Safety for the Aging Adult	3
		Subtotal: 15
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 4 (336 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 5 (420 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 59</b>

**Minimum credits required:** Successful completion of the AGACNP MSN to DNP track for non-APRNs requires a minimum of 59 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

The equivalent of Research and Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.



## Doctor of Nursing Practice (MSN to DNP - non-APRN)

### Population/Role: Adult-Gerontology Primary Care Nurse Practitioner (AGPCNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 59 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-534	Major Psychopathological Disorders	3
NSG-570B	Pharmacotherapeutics Primary Care	3
NSG-571A	Management: Adult/Gerontology I	3
NSG-571B	Management: Adult/Gerontology II	3
NSG-572	Quality & Safety for the Aging Adult	3
		Subtotal: 15
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 5 (420 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 4 (336 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 59</b>

**Minimum credits required:** Successful completion of the AGPCNP MSN to DNP track for non-APRNs requires a minimum of 59 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

The equivalent of Research and Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.

## Doctor of Nursing Practice (MSN to DNP - non-APRN)

### Population/Role: Pediatric Nurse Practitioner (PNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 56 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-551A	Advanced Primary Care of the Child I	3
NSG-551B	Advanced Primary Care of the Child II	3
NSG-551C	Advanced Primary Care of the Child III	3
NSG-556	Applied Pharmacology: Pediatrics	3
		Subtotal: 12
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 56</b>

**Minimum credits required:** Successful completion of the PNP MSN to DNP track for non-APRNs requires a minimum of 56 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

The equivalent of Research and Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.

## Doctor of Nursing Practice (MSN to DNP - non-APRN)

### Population/Role: Psychiatric-Mental Health Nurse Practitioner (PMHNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-533	Advanced Pathophysiology	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 12
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-534	Major Psychopathological Disorders	3
NSG-575	Psychopharmacology	3
NSG-576	Neurophysiology: Lifespan Approach	3
NSG-577A	Diagnostics & Management I: Psychiatric Assessment Across Lifespan	3
NSG-577B	Diagnostics & Management II: Evidence Based Treatment	3
NSG-577C	Diagnostics & Management III: Group Therapy and Complex Care	3
		Subtotal: 18
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 56</b>

**Minimum credits required:** Successful completion of the PMHNP MSN to DNP track for non-APRNs requires 56 term hours as a minimum for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

The equivalent of Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.

## Doctor of Nursing Practice (MSN to DNP)

### Area of Focus: Transformative Leadership: Population Health

This area of focus is on the development of population-based knowledge and skills to enhance clinical health outcomes for patient aggregates, communities, and populations. Students with a MSN in a primary care specialty as well as non-APRN MSNs will be considered for admission to the Transformative Leadership: Population Health option.

### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

## Curriculum

DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
		Subtotal: 6
Population/Role Cognates		Credit Hours
NSG-565	Advanced Nursing Roles in Public Health Systems	3
NSG-566	Population Assessment & Health Promotion Frameworks	3
NSG-567	Population Intervention Planning, Implementation & Evaluation	3
NSG-536	Principles of Case Management OR	3
NSG-568	Environmental Health	3
NSG-611	Financial & Business Concepts	3
NSG-614	The Leader and Policy, Politics, Power & Ethics	3
		Subtotal: 18
DNP Practica and Project		Credit Hours
NSG-605	DNP Project	2 (168 Clock Hours)
NSG-606	DNP Specialty Practicum	1-12 3 (252 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 2 (168 Clock Hours)
		Subtotal: 7
		<b>Total: 31</b>

**Minimum credits required:** Successful completion of the APHN MSN to DNP track requires a minimum of 31 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required. It is expected that previous clinical hours plus DNP Specialty Practicum and Immersion hours will be equal to or greater than 1000 clock hours.

The equivalent of Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.

## Doctor of Nursing Practice (MSN to DNP)

### Area of Focus: Transformative Leadership: Systems

This area of focus is a post-master's practice doctorate that prepares graduates for systems-level leadership and improving outcomes in a variety of settings. Students considered for admission should have potential or demonstrated leadership ability.

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

## Curriculum

DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-611	Financial & Business Concepts	3
NSG-612	Applied Organizational Analysis & Management of Human Resources	3
NSG-613	Data and Decision Making for Strategic Outcomes Management	3
NSG-614	The Leader and Policy, Politics, Power & Ethics	3
NSG-616	Advanced Nurse Leadership	3
		Subtotal: 15
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum [Systems]	1-12 1 (84 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 2 (168 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 6
		<b>Total: 35</b>

**Minimum credits required:** Successful completion of the Systems MSN to DNP track requires a minimum of 35 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

It is expected that previous clinical hours plus DNP Specialty Practicum and Immersion hours will be equal to or greater than 1000 clock hours.

## Doctor of Nursing Practice (MSN to DNP)

### Population/Role: Adult-Gerontology Clinical Nurse Specialist (AGCNS)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-534	Major Psychopathological Disorders	3
NSG-570B	Pharmacotherapeutics Primary Care	3
NSG-571A	Management: Adult/Gerontology I	3
NSG-571B	Management: Adult/Gerontology II	3
NSG-572	Quality & Safety for the Aging Adult	3
NSG-679	Evidence-Based Teaching in Health Professions	3
		Subtotal: 18
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 5 (420 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 4 (336 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 62</b>

**Minimum credits required:** Successful completion of the AGCNS MSN to DNP track requires a minimum of 62 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

The equivalent of Research and Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.

## Doctor of Nursing Practice (MSN to DNP)

### Population/Role: Family Nurse Practitioner (FNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-534	Major Psychopathological Disorders	3
NSG-566	Population Assessment & Health Promotion Frameworks	3
NSG-569	Maternal Child Management for FNP	3
NSG-570B	Pharmacotherapeutics Primary Care	3
NSG-571A	Management: Adult/Gerontology I	3
NSG-571B	Management: Adult/Gerontology II	3
		Subtotal: 18
DNP Practica and Capstone		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 62</b>

**Minimum credits required:** Successful completion of the FNP MSN to DNP track requires 62 term hours as a minimum for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hour may be required.

The equivalent of Research and Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.

## Doctor of Nursing Practice (MSN to DNP)

### Population/Role: Neonatal Clinical Nurse Specialist (NCNS)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-547	Neonatal Pathophysiology	3
NSG-548	Advanced Neonatal Physical Assessment	3
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-536	Principles of Case Management	3
NSG-546	Developmental Physiology Fetus/Neonates	3
NSG-549	Neonatal Pharmacotherapeutics	3
NSG-550A	Neonatal Management I	3
NSG-550B	Neonatal Management II	3
NSG-550C	Neonatal Management III	3
NSG-679	Evidence-Based Teaching in Health Professions	3
		Subtotal: 21
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 65</b>

**Minimum credits required:** Successful completion of the NCNS MSN to DNP track requires a minimum of 65 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

The equivalent of Research and Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.

**Palliative Care Training:** ELNEC Pediatric, Palliative Care Certification, or Palliative Care Coursework to be completed prior to 551A



## Doctor of Nursing Practice (MSN to DNP)

### Population/Role: Neonatal Nurse Practitioner (NNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-533	Advanced Pathophysiology	3
NSG-537	Transition to the APRN Role	3
NSG-547	Neonatal Pathophysiology	3
NSG-548	Advanced Neonatal Physical Assessment	3
		Subtotal: 15
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-546	Developmental Physiology Fetus/Neonates	3
NSG-549	Neonatal Pharmacotherapeutics	3
NSG-550A	Neonatal Management I	3
NSG-550B	Neonatal Management II	3
NSG-550C	Neonatal Management III	3
		Subtotal: 15
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 56</b>

**Minimum credits required:** Successful completion of the NNP MSN to DNP track requires a minimum of 56 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

The equivalent of Research and Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.

## Doctor of Nursing Practice (MSN to DNP)

### Population/Role: Nurse Anesthesia (CRNA)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 15
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
ANA-500	Neuroscience for Basic and Clinical Applications	3
NSG-541	Chemistry & Physics in Anesthesia	3
NSG-542	Anesthesia Pharmacology	3
NSG-543A	Anesthesia Principles I: Basic Principles	3
NSG-543B	Anesthesia Principles II: Advanced Principles	3
NSG-543C	Anesthesia Principles III: Obstetric & Pediatric	3
		Subtotal: 18
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 12 (1008 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 15 (1260 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 30
		<b>Total: 77</b>

**Minimum credits required:** Successful completion of the CRNA MSN to DNP track requires a minimum of 77 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

The equivalent of Research and Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.

## Doctor of Nursing Practice (MSN to DNP)

### Population/Role: Pediatric Clinical Nurse Specialist (PCNS)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 62 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

Advanced Practice Nursing Core		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-532	Advanced Physiology	3
NSG-533	Advanced Pathophysiology	3
NSG-535	Diagnostics for the APRN	3
NSG-537	Transition to the APRN Role	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 18
DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-536	Principles of Case Management	3
NSG-551A	Advanced Primary Care of the Child I	3
NSG-556	Applied Pharmacology: Pediatric	3
NSG-557A	Pediatric Acute Care I	3
NSG-557B	Pediatric Acute Care II	3
NSG-679	Evidence-Based Teaching in Health Professions	3
		Subtotal: 18
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 62</b>

**Minimum credits required:** Successful completion of the PCNS MSN to DNP track requires a minimum of 62 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

The equivalent of Research and Biostatistics/Epidemiology must be completed prior to admission or added to the plan of study.

**Palliative Care Training:** ELNEC Pediatric, Palliative Care Certification, or Palliative Care Coursework to be completed prior to 551A

## Doctor of Nursing Practice (MSN to DNP)

### Population/Role: Pediatric Nurse Practitioner (PNP)

#### Terminal Objectives

The DNP degree is designed to prepare graduates to function as highly developed clinicians and leaders in advanced nursing practice or systems of care. Graduates are prepared to practice in a variety of complex clinical, organizational and educational systems with diverse populations, and are able to affect changes in health care outcomes through evidence-based decision-making and system redesign.

- Integrate science-based theories and data-based concepts to develop, critically appraise and implement practice approaches that improve health care and health care systems
- Apply organizational theories and systems thinking to improve the quality, cost-effectiveness and safety outcomes of practice decisions and initiatives
- Apply effective strategies for managing the ethical dilemmas inherent in patient care, the health care organization and research
- Apply knowledge of informatics to monitor and improve outcomes, programs and systems of care
- Provide leadership in influencing policies on the financing, regulation and delivery of health care
- Lead interprofessional teams to improve patient and population health outcomes
- Function independently in an advanced nursing role to improve health outcomes in a specialty area of practice

#### Graduation Requirements

The DNP degree requires a minimum of 32 term hours of post-baccalaureate or 30 term hours of post-master's study. All Doctor of Nursing Practice students must complete degree requirements within five years.

## Curriculum

DNP Core		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-602	Health Care Economics, Policy, Finance	3
NSG-608	Program Evaluation	3
NSG-610	DNP Project Planning and Implementation	3
NSG-615	DNP Project Proposal Seminar	2
		Subtotal: 14
Population/Role Cognates		Credit Hours
NSG-551A	Advanced Primary Care of the Child I	3
NSG-551B	Advanced Primary Care of the Child II	3
NSG-551C	Advanced Primary Care of the Child III	3
NSG-556	Applied Pharmacology: Pediatric	3
		Subtotal: 12
DNP Practica and Project		Credit Hours
NSG-606	DNP Specialty Practicum	1-12 6 (504 Clock Hours)
NSG-607	DNP Immersion Residency	1-14 3 (252 Clock Hours)
NSG-609A	DNP Project Practicum A	1 (84 Clock Hours)
NSG-609B	DNP Project Practicum B	1 (84 Clock Hours)
NSG-609C	DNP Project Practicum C	1 (84 Clock Hours)
		Subtotal: 12
		<b>Total: 38</b>

**Minimum credits required:** Successful completion of the PNP MSN to DNP track for APRNs requires a minimum of 38 term hours for graduation. Upon review of an individual's academic portfolio, additional courses or clinical hours may be required.

A gap analysis will be performed, and an individualized program of study will be developed based on previous graduate education completed with evidence of the following coursework:

- Advanced Health Assessment Across the Life Span/ Diagnostics for the APRN
- Pathophysiology Across the Life Span
- Advanced Pharmacology and Pharmacotherapeutics
- Transition to the APRN Role
- Research
- Biostatistics/Epidemiology

It is expected that previous clinical hours plus DNP Specialty Practicum and Immersion hours will be equal to or greater than 1,000 clock hours.

*Evidence of current APRN certification and active practice within the past two years required.*

## DOCTOR OF PHILOSOPHY

### Nursing Science, PhD

Students may enter the PhD program with a BSN or an MSN degree. Non-nurses with a graduate degree in a health-related field may also apply for admission to the PhD program. This program is delivered by the College of Nursing faculty in conjunction with the Graduate College. The degree of doctor of philosophy is awarded by the Graduate College.

#### Terminal Objectives

Graduates of the PhD program develop the skills of a clinical researcher. These skills are based on the integration of knowledge from biological, behavioral and clinical sciences. Their clinical research skills contribute to the scientific basis of care provided to individuals across the life span and in any setting where care is provided. Graduates also have leadership skills necessary to serve as senior academicians and influence health care systems and policy.

- Synthesize and apply theoretical and research-based knowledge in the investigation of clinical phenomena
- Test and integrate disciplinary knowledge in models of clinical practice across the levels of prevention
- Generate and disseminate research-based, clinically-related knowledge
- Analyze health care trends to influence health and social policy for diverse client populations
- Participate in collaborative interprofessional practice and research
- Assume faculty responsibilities within a senior academic environment
- Function as a clinical scientist

#### Graduation Requirements

Divisional graduation requirements require completion of the approved individual program of study. For MSN to PhD students, coursework for the PhD must be the equivalent of at least 52 term hours of graduate credit in addition to the completed dissertation. BSN to PhD students must complete at least 60 term hours of graduate credit in addition to the dissertation. Students have a maximum of eight years to complete degree requirements.

## Academic Program Curricula

### Doctor of Philosophy (PhD)

#### Nursing Science

Theory Courses		Credit Hours
NSG-680	Understanding Scientific Paradigms	3
NSG-681	Understanding Theoretical Framework Development	3
		Subtotal: 6
Statistics Courses		Credit Hours
NSG-684	Intermediate Statistics	3
NSG-685	Multivariate Statistics	3
		Subtotal: 6
Research Courses		Credit Hours
NSG-675	Literature Synthesis Approach	3
NSG-686	The Research Process: Quantitative Design & Methods Part I	3
NSG-687	The Research Process: Quantitative Design & Methods Part II	3
NSG-688	The Research Process: Qualitative Design & Methods	3
NSG-691	Advanced Clinical Research Practicum	1-12 Minimum (8 Credit Hours)
		Subtotal: 20
Ethics Course		Credit Hours
NSG-683	Ethical Conduct - Research Setting	3
		Subtotal: 3
Role Courses		Credit Hours
NSG-600	Leadership in Evolving Health Care Environment	3
NSG-614	The Leader and Policy, Politics, Power & Ethics	3
NSG-679	Evidence-Based Teaching in Health Professions	3
NSG-690	Grantsmanship	3
		Subtotal: 12
Cognates		Credit Hours
		5
		Subtotal: 5
Dissertation		Credit Hours
NSG-699	Dissertation Research	2-4
		Minimum Total: 12 (minimum 3 hours and maximum 4 hours per term)
		Subtotal: 12
Bridge Coursework		Credit Hours
(Individual for each student; only for BSN-PhD students)		
		Subtotal: 8
		<b>Total: 72 (for BSN-PhD); 64 (for MSN-PhD)</b>

\*Students who have not previously taken a graduate-level biostatistics course must take a three-hour course prior to taking NSG-684: Intermediate Statistics. To fulfill this requirement, they may take NSG-522: Applied Epidemiology and Biostatistics for Nursing Practice, or they may transfer in an equivalent course taken at an accredited school.

## MASTER OF SCIENCE IN NURSING

### Master of Science in Nursing (MSN) Nursing Leadership Program: Clinical Nurse Leader (CNL) for RNs

The master's prepared clinical nurse leader (CNL) is responsible for clinical management of comprehensive client care, for individuals and clinical populations across the continuum of care and in multiple settings. The CNL assumes leadership and accountability for health outcomes for a specific group of clients within a unit or setting through the assimilation and application of research-based information to design, implement and evaluate plans of care. The clinical nurse leader is also responsible for the coordination and planning of health care team activities and functions. Health promotion, risk reduction and improvement in point-of-care outcomes are critical elements in the role of the clinical nurse leader.

Applicants to the post-licensure Clinical Nurse Leader (CNL) program must have earned a baccalaureate degree in nursing from an accredited university. The program is six terms in length and offered as a part-time program of study. The majority of the CNL program is offered online, but students are required to come to campus for NSG-625L Advanced Health Assessment for Advanced Practice Nursing Across the Life Span: Lab. This is a course that requires students to be on-campus two days (dates available at time of registration). There is a clinical residency requirement that may be completed at the student's place of employment.

All MSN students are expected to complete their degree requirements in no more than five years.

#### Terminal Objectives

Both the prelicensure and post-licensure MSN programs comprehensively prepare students to be graduate nurse clinicians with a focus in clinical leadership.

To achieve quality patient (client/population/cohort of clients) outcomes, the Clinical Nurse Leader will meet the following objectives:

- Use communication techniques that reflect an understanding of the dignity and respect afforded to all persons
- Deliver competent, holistic, and contextually appropriate patient-family-population-centered nursing care
- Synthesize the knowledge of nursing science, social science and humanities in the promotion of health, prevention of disease, and delivery of care across diverse populations and health care environments
- Demonstrate the ability to work with interdisciplinary teams to optimize nursing care delivery
- Demonstrate leadership behaviors within and across systems at all levels of prevention
- Recognize the impact of the micro and macro system environments on health care delivery
- Demonstrate professional values in nursing practice

#### Graduation Requirements

**MSN for RNs: Clinical Nurse Leader (CNL)** requires a minimum of 37 credit hours and 400 clock hours of clinical instruction. Graduates are eligible to sit for CNL certification.

## Academic Program Curricula

### Master of Science in Nursing (MSN)

#### Area of Focus: Clinical Nurse Leader (CNL)-Part Time

Term 1		Credit Hours
NSG-522	Applied Epidemiology Biostats Nursing	3
NSG-602	Health Care Economics, Policy, Finance	3
		Subtotal: 6
Term 2		Credit Hours
NSG-524	Health Promotion in Individuals & Clinical Populations	3
NSG-533	Advanced Pathophysiology	3
		Subtotal: 6
Term 3		Credit Hours
NSG-531	Advanced Pharmacology	3
NSG-625	Advanced Health Assessment - APRN Across Life Span	2
*NSG-625L	Advanced Health Assessment - APRN: Lab	1
		Subtotal: 6
Term 4		Credit Hours
NSG-521	Organizational & Systems Leadership	3
NSG-523	Research for Evidence-Based Practice	3
		Subtotal: 6
Term 5		Credit Hours
NSG-512	Clinical Leadership and Project Development	3
NSG-517	CNL Role Seminar	3
		Subtotal: 6
Term 6		Credit Hours
NSG-515	Immersion: Clinical Project Implementation	7
		Subtotal: 7
		<b>Total: 37</b>

\* This course requires students to attend two live, on-campus days of lab. Dates for the on-campus days will be provided at registration time.

## Master's Entry in Nursing (MSN) for Non-Nurses: Clinical Nurse Leader

The MSN Clinical Nurse Leader program, designed for Generalist Entry Master's (GEM) students, comprehensively prepares students in a two-year full-time graduate curriculum to be a registered nurse (RN) clinician with a focus in clinical leadership. Graduates are prepared to function at a high level in inpatient, outpatient, and community settings. The GEM program gives the student a broad overview of all of the major specialties in which nurses work, as well as a variety of settings across the health care continuum. In the GEM program, students take core graduate courses that are applicable in their progression to doctoral education in either a Doctor of Nursing Practice (DNP) specialty or the Doctor of Philosophy in Nursing Science (PhD) program.

Students are considered for admission to the GEM program after completing baccalaureate education at another accredited college or university. The GEM curriculum consists of 74 term hours of graduate coursework in nursing and related sciences. Students are eligible to take the NCLEX for RN licensure and Clinical Nurse Leader certification examination upon graduation. GEM students are expected to complete the MSN requirements on a full-time basis in six terms.

### Terminal Objectives

- Use communication techniques that reflect an understanding of the dignity and respect afforded to all persons
- Deliver competent, holistic, and contextually appropriate patient-family-population-centered nursing care
- Synthesize the knowledge of nursing science, social science and humanities in the promotion of health, prevention of disease, and delivery of care across diverse populations and health care environments
- Demonstrate the ability to work with interdisciplinary teams to optimize nursing care delivery
- Demonstrate leadership behaviors within and across systems at all levels of prevention
- Recognize the impact of the micro and macro system environments on health care delivery
- Demonstrate professional values in nursing practice

### Master of Science in Nursing Required Prerequisite Courses

As a profession and a discipline, nursing promotes and protects human health and well-being and is grounded in a

strong, liberal arts, undergraduate education that includes the arts and humanities, as well as the behavioral, social and physical sciences. Recognizing that different undergraduate majors have varying requirements, evaluation of applicants will be based both on their success in meeting the requirements of their undergraduate programs and on the breadth and depth of their educational preparation for entry into nursing.

Nursing practice and scholarship have great application in our society, ranging from the acute care of individuals to the management and promotion of the health of whole communities and even nations. The College of Nursing welcomes and is enriched by applicants from a spectrum of disciplines and professions.

All required prerequisite courses listed below must be successfully completed with a grade of C or better by the application deadline for which the student is applying. We recommend but do not require that you complete a laboratory component for each of these courses:

- General chemistry I\*
- Human Anatomy\*\*
- Human Physiology\*\*
- Microbiology

\*We do not accept Introductory Chemistry, Basic Chemistry, Fundamentals of Chemistry or Foundations of Chemistry. Only one term of General Chemistry is required.

\*\*Anatomy and Physiology may be taken as two separate courses or as Anatomy and Physiology I and Anatomy and Physiology II. We strongly discourage applicants from taking Anatomy and Physiology online unless offered through a traditional community college or university. We recommend but do not require that applicants completed a Human Anatomy and Physiology course within the last three years.

### Graduation Requirements

#### Direct Entry Master's (MSN) for Non-Nurses: Generalist Entry Master's (GEM) Clinical Nurse Leader (CNL) Program

requires a minimum of 74 term hours of didactic and 1,308 clock hours of clinical instruction. Candidates are given a comprehensive examination in the final term of the program in preparation for the National Council Licensure Examination for Registered Nurses, or NCLEX. Graduates are eligible to sit for the NCLEX and the CNL certification exam.

## Academic Program Curricula

### Master's of Nursing Science (MSN)

#### Area of Focus: Generalist Entry Master's (GEM)

Term 1		Credit Hours
NSG-500	Socialization Into Nursing Seminar	1
NSG-501	Role of the Professional Nurse	3
NSG-501P	Role of the Professional Nurse Practicum	3
NSG-510	Pathophysiology	3
NSG-525	Health Assessment Across the Lifespan	2
NSG-525L	Health Assessment Across the Lifespan Lab	1
		Subtotal: 13
Term 2		Credit Hours
NSG-502	Nsg Mgt: Common Health Alt/Lifespan	3
NSG-502P	Nsg Mgt: Common Health Alt - Practicum	3
NSG-511	Pharmacology	3
NSG-522	Applied Epidemiology Biostats Nursing	3*
		Subtotal: 12
Term 3		Credit Hours
NSG-503	Psychiatric and Mental Health Nursing	3
NSG-503P	Psychiatric and Mental Health Nursing Practicum	3
NSG-518	Palliative Care for Nursing	2*
NSG-523	Research for Evidence Based Practice	3*
NSG-524	Health Promotion in Individuals & Clinical Populations	3
		Subtotal: 14
Term 4		Credit Hours
NSG-504	Women's Health Across the Lifespan	3
NSG-504P	Women's Health Nursing	1
NSG-505	Public Health Nursing	3
NSG-505P	Public Health Nursing Practicum	2
NSG-521	Organizational & Systems Leadership	3*
		Subtotal: 12
Term 5		Credit Hours
NSG-506	Nsg Management of Complex Hlth	3
NSG-506P	Nsg Management of Complex Prac	3
NSG-512	Clinical Leadership & Project Development	3*
NSG-536	Principles of Case Management	3
		Subtotal: 12
Term 6		Credit Hours
NSG-507	Comprehensive Exam	1
NSG-513	Clin Project Implementation NSG	3
NSG-514	Immersion: Clinical Practicum	7
		Subtotal: 11
		<b>Total: 74</b>

\* Currently offered online with in-person meetings

Note: Students must complete a minimum of 100 professional development hours to meet the CNL competencies.

- IPE - 502 Interprofessional Patient Centered Teams  
Credit(s): Non Credit
- Interprofessional Patient Centered Team course is a pass/no pass course. Students will use experiential team based learning to apply knowledge, skills, and values of the IPEC competencies. The Fall cohort will be automatically enrolled in Term 1 and 2. The Spring cohort will be automatically enrolled in the Term 3 and 4. Workshops will be held Wednesday afternoons. Participation requires approximately 20 hours of student time.



**Rush University**

**College of Health Sciences**



## Welcome to the College of Health Sciences



The College of Health Sciences offers outstanding educational programs for the preparation of allied health and health care management professionals. There are more than 200 different allied health fields, and allied health workers constitute nearly 60% of the health care workforce in the United States. Because of advances in treatment and technology, population growth and the aging of the population, the demand for allied health professionals is expected to increase significantly.

Allied health professionals and managers work in many different health care settings, including acute care, chronic care, primary care, community-based care, clinics, physicians' offices, educational institutions, research facilities and industry settings. Patients served range from newborn infants and pediatric patients to adults and the elderly.

In keeping with the Rush University practitioner-teacher model, the College of Health Sciences integrates patient care, research, scholarship and service into the teaching-learning process for our students. We strive to provide educational programs that are among the very best in preparing graduates to provide accessible, high-quality care for our patients and community.

Charlotte Royeen, PhD

A. Watson Armour III Presidential Professor

Dean, College of Health Sciences



## Overview

The College of Health Sciences, founded in 1975, is responsible for education and research in the allied health professions, including health care management. Rush University educates students as practitioners, scientists, teachers and leaders. As an integral component of Rush University, the College of Health Sciences seeks to prepare excellent allied health practitioners and leaders to provide the very best care for our patients. In addition, the college makes meaningful and significant contributions to advancing health care through research, scholarship, service and practice.

The College of Health Sciences offers programs in 15 different professional areas housed within 10 academic departments. The college includes the departments of Cardiopulmonary Sciences (Cardiovascular Perfusion and Respiratory Care); Clinical Nutrition; Communication Disorders and Sciences (Audiology and Speech-Language Pathology); Health Sciences; Health Systems Management; Medical Laboratory Science; Medical Imaging Sciences (Imaging Sciences and Vascular Ultrasound); Occupational Therapy; Physician Assistant Studies; and Religion, Health and Human Values.

Programs and degrees offered within the college include the doctor of audiology (AuD), medical laboratory science (MS), clinical laboratory management (MS), specialist in blood bank (certificate), clinical nutrition dietetic internship (MS), clinical nutrition (MS), health sciences (BS, PhD), health systems management (MS), imaging sciences (BS), occupational therapy (OTD), cardiovascular perfusion (MS), physician assistant studies (MS), respiratory care (MS), speech-language pathology (MS), and vascular ultrasound technology (BS). The PhD in Health Sciences diploma is offered through a collaboration with the Division of Health Sciences within the Graduate College.

## Organization

The organization of the College of Health Sciences centers around departments and programs, each headed by a department chairperson and program director who reports to the college dean.

The senior administrative and policy body of the College is the Chair's Council, made up of the chairpersons from each of the college's departments and a representative from the Faculty Council. The senior representative body of the college is the Faculty Council, which is comprised of two faculty members elected from each department. Meetings of the Faculty Council are ordinarily held quarterly. Faculty may propose agenda items and guests are welcome by invitation.

## Alumni Activities

Outstanding educational programs have outstanding alumni, and the College of Health Sciences encourages the development of strong ties with its graduates. All graduates are considered alumni of the College of Health Sciences. No dues are levied for membership in the college alumni association. In addition, each of the programs in the College of Health Sciences has an individual program alumni organization.

Further information about the College of Health Sciences can be obtained by contacting the Dean's Office:

College of Health Sciences Dean's Office  
Rush University  
600 S. Paulina St., Suite 1001  
Chicago, IL 60612  
(312) 942-7120

## Mission and Vision

Rush University's purpose is to educate students as practitioners, scientists and teachers who will become leaders in advancing health care, and to further the advancement of knowledge through research. The College of Health Sciences, as an integral component of the University, seeks to prepare superb practitioners and leaders in the allied health professions to provide the very best care for our patients.

In addition, the college seeks to make meaningful and significant contributions in advancing health care through excellence in research, scholarship and service. In keeping with the Rush University practitioner-teacher model, the college integrates patient care, research, scholarship and service into the teaching-learning process of developing future allied health professionals and leaders.

### Mission

The mission of the College of Health Sciences is to advance the quality and availability of health care through excellence in education, research and scholarship, service and patient care. The college promotes the values of diversity, access and inclusion in all of its endeavors.

### Vision

The College of Health Sciences at Rush University will be a world-class school of allied health sciences whose programs are recognized as among the best in the United States.

## Admission Requirements

Admission to the College of Health Sciences programs is on a competitive basis. Student selection is based on a number of factors, including overall grade-point average, prerequisite or science grade-point average, consistency of academic performance, coursework completed prior to application, examination scores, prior health care and life experiences and interpersonal abilities. The GRE graduate school entry exam score submission and a personal interview may be required by certain College of Health Sciences programs. For information on how to gain admission to a specific College of Health Sciences program, please consult the webpages for the relevant academic program at [www.rushu.rush.edu/college-health-sciences/academic-programs](http://www.rushu.rush.edu/college-health-sciences/academic-programs).

### Application Procedure

Application for admission into programs offered in the College of Health Sciences varies by program. For more information on application procedures, please consult the specific program and department webpages.

### TOEFL Policy

All applicants whose native language is not English must present evidence of proficiency in English by satisfactorily completing the Test of English as a Foreign Language, or TOEFL, examination.

A total TOEFL score of at least 88 on the web-based version, at least a 570 on the paper-delivered version or 230 on the computer version must be achieved. For each of the three subtests (listening, structure/writing and reading), applicants may score no less than 20 on the computer version or 18 on the web-based and paper delivered versions of the TOEFL.

An official report of these scores must be received by the Admissions Office prior to the date(s) on which admission decisions are made for the program(s) to which the applicant has applied. To obtain information or to register to take the TOEFL, write directly to the Education Testing Service:

The Education Testing Service  
P.O. Box 6151  
Princeton, NJ 08541

You may also wish to visit the TOEFL website at [www.toefl.org](http://www.toefl.org). The applicant should indicate on the application for the examination that results should be sent to institution code No. 1676.

Applicants whose native language is not English and who have graduated from high school or successfully completed a higher education degree program (associate degree or higher) in the United States or one of its English-speaking protectorates **may petition for a waiver of the TOEFL requirement** to the College of Health Sciences' Dean's Office.

Waiver requests should include proof of receipt of a high school or college diploma from an accredited institution in the United States or one of its English-speaking protectorates. College or university degrees must be granted by a regionally accredited college or university to be considered for waiver of the TOEFL.

## Philosophy of General Education

Undergraduate programs at Rush University prepare entry-level professionals for various roles in health care. The University strives to provide an environment where knowledgeable, informed and literate students are prepared to take their place, not only in the health care arena, but also as citizens of the world. The professional education builds on a solid general education, which forms the basis for lifelong learning and prepares graduates to be practitioners with social consciences.

Students are admitted to Rush University with general education sufficient to lay the groundwork for developing excellent written and verbal communication skills, critical thinking abilities, cultural sensitivity, high ethical standards and an inquiring mind. Students are expected to enter Rush University with foundations in communications, humanities, mathematics, physical/life sciences and social sciences.

The professional education offered by the University completes the student's general education, resulting in a graduate who displays the following:

- Communicates effectively in writing and speech
- Demonstrates intellectual curiosity and critical thinking in the application of math and science to practice
- Applies ethical principles to practice
- Demonstrates ability to practice effectively in a diverse society
- Exercises/expresses their social conscience to positively influence health care at local to global level

## Academic Policies

### Examination Policy

The examination policy is the responsibility of the individual course director who will inform students of examination requirements for that particular course. A time period at the end of the semester is provided for examinations. This time period may be used as the course director chooses.

### Readmission

Any student who has withdrawn from a program or has not been enrolled for one or more semesters, as well as any dismissed student, may apply for readmission by submitting an application for this purpose. Applications for re-enrollment must be received at least three months before the planned return.

An interview may be required. A re-entering student must meet the conditions for re-enrollment stated in their dismissal or re-entry acceptance letter and all policies, requirements and course sequences in effect at the time of re-entry. Previously enrolled students may be considered as part of the pool of new applicants and are not guaranteed admission. The student will pay tuition and fees at the rates in effect at the time of re-enrollment.

### Rush University Academic Policies

The Academic Resources and Policies section of this catalog contains additional Rush University academic policies.

### Student Professional and Community Service Requirement

Participation in service activities is an important attribute of the health science professional. A hallmark of outstanding Rush students and alumni is the desire and ability to make meaningful service contributions. Community service activities may include volunteer activities (health fairs and clinics, health education, provision of health services to at-risk or disadvantaged populations, and other outreach education or clinical activities) and service on community boards, committees, work groups and other service activities that promote the health and well-being of the community and its members. Professional service may include participation in the provision of state, national or international activities to advance the quality, access and effectiveness of health care services provided by allied health professionals.

Achievement of the College of Health Sciences Excellence in Service Goal is demonstrated in part through the following:

1. Student and faculty participation in community service activities
2. Student satisfaction with, and appreciation for, community service
3. Students and faculty who provide leadership and support to professional associations, boards and committees
4. Provision of community and professional continuing education to local, national and international audiences

In order to support achievement of the college's service excellence goals and objectives, the college has developed a professional and community service requirement for all College of Health Sciences students as a part of their academic programs.

As a requirement for program completion, each academic degree granting program will establish a minimum service requirement for each student enrolled in the program of at least 16 contact hours of approved professional or community service.

Examples of activities that may be used to meet this requirement include participation in community health fairs; community health screening and/or health services; provision of community health education; participation in approved professional service and/or continuing education activities; and assistance with the delivery of seminars, lectures, workshops and related community or professional continuing education activities.

### Conduct and Ethics

Students are expected to conduct themselves in a professional manner at all times — in a manner that conforms to the ethics of the health professions and instills confidence in their abilities as health care professionals. Each student is expected to conform to the professional code of ethics as outlined in their departmental student handbook.

Irresponsible, unprofessional or unethical behavior may result in disciplinary action, which may include suspension or dismissal from the college. All clinical agency or hospital regulations are to be followed by students when undergoing clinical or other training in a facility. For additional information, students should refer to the Rush University Statement on Academic Honesty and Student Conduct and the Rush University Medical Center Code of Conduct.

## Scholastic Dishonesty and Cheating

The College of Health Sciences will not condone cheating in any form. Allegations of cheating will be reviewed by the departmental Committee on Progress and Promotions.

Any student found to be cheating on an examination may receive a 0 for the examination and will be subject to formal disciplinary action, which may include suspension or dismissal from the program. Failure to report incidents involving scholastic dishonesty on the part of another student will be considered unprofessional conduct and may also result in disciplinary action. Students should refer to the Rush University Policy on Academic Honesty and Student Conduct for further information.

## HIPAA and Patient Privacy

Rush University students have a legal and ethical responsibility to safeguard the privacy of all patients and protect confidentiality and security of all health information. Protecting the confidentiality of patient information means protecting it from unauthorized use or disclosure in any format, including verbal, fax, written or electronic/computer. Patient confidentiality is a central obligation of patient care. Any breaches in patient confidentiality or privacy may result in disciplinary action, up to and including dismissal from the college.

The laboratory component of some courses may use students as simulated patients. This is particularly true for the patient evaluation, medicine and patient education components. Additionally, the sharing of personal experiences can be a rich resource in the development of students' understanding, knowledge and appreciation of disease, health care and impact on peoples' lives.

Practicing the medical history and physical examination of patients places students in close contact and leads to the sharing of personal information and physical findings. Similarly, students may use personal experiences in patient role-playing exercises.

All shared and personal medical information and physical examination findings are to be treated with utmost confidentiality — the same as for any patient contact. Failure to protect the confidentiality of any information related to the activities in a course or clinical rotation may result in disciplinary action, up to and including suspension or dismissal from the college. For additional information, students should refer to the Rush University HIPAA policy and the Rush University Policy on Privacy and Confidentiality of Student Records and FERPA.

## Guide to Professional Conduct

Professionalism relates to the intellectual, ethical, behavioral and attitudinal attributes necessary to perform as a health care provider or manager. As it applies to their professional role, the student will be expected to do the following:

### Attend

1. Demonstrate awareness of the importance of learning by asking pertinent questions, identifying areas of importance in practice, and reporting and recording those areas
2. Avoid disruptive behavior in class, laboratory and clinical or practicum rotations, such as talking or other activities that interfere with effective teaching and learning

### Participate

1. Complete assigned work and prepare for class, laboratory and clinical or practicum objectives prior to attending
2. Participate in formal and informal discussions, answer questions, report on experiences and volunteer for special tasks and research
3. Initiate alteration in patient care techniques when appropriate via notification of instructors, staff and physicians

### Dependability and Appearance

1. Attend and be punctual and reliable in completing assignments with minimal instructor supervision
2. Promote a professional demeanor by appropriate hygiene, grooming and attire

### Communicate

1. Demonstrate a pleasant and positive attitude when dealing with patients and coworkers by greeting them by name, approaching them in a non-threatening manner and setting them at ease
2. Explain procedures clearly to the patient
3. Ask patients how they feel and solicit patient comments regarding the patient's overall condition and response to assessment and/or therapy
4. Communicate clearly to staff and physicians regarding the patient status, utilizing appropriate charting, oral communication and the established chain of command
5. Demonstrate a pleasant and positive attitude when dealing with coworkers, instructors, faculty, nurses and physicians

## Organize

1. Display recognition of the importance of interpersonal relationships with students, faculty and other members of the health care team by acting in a cordial and pleasant manner
2. Work as a team with fellow students, instructors, nursing staff and the physician in providing patient care
3. Organize work assignments effectively
4. Collect information from appropriate resources
5. Correlate care to overall patient condition
6. Adapt care techniques to overcome difficulties
7. Devise or suggest new techniques for patient welfare or unit efficiency

## Be Safe

1. Verify identity of patients before initiating therapeutic action.
2. Interpret written information and verbal directions correctly
3. Observe and report significant changes in patient's condition promptly to appropriate person(s)
4. Act to prevent accidents and injury to patients, personnel and self
5. Transfer previously learned theory and skills to new/different patient situations
6. Request help from faculty/staff when unsure
7. Comply with hospital and university guidelines for performance

The following are examples of critical errors in professional conduct and judgment:

1. Failure to place the patient's welfare as first priority
2. Failure to maintain physical, mental and emotional composure
3. Consistent ineffective or inefficient use of time
4. Failure to be appropriately honest with patients, faculty and colleagues
5. Scholastic dishonesty in any form
6. Failure to follow the Rush University Medical Center Code of Conduct

## Procedure for Unprofessional Conduct

For specific rules regarding the procedures for unprofessional conduct, please refer to the departmental or program student handbook. In general, for issues that are not satisfactorily resolved between the instructor and student, the following guidelines should be followed for unprofessional conduct:

**Step 1.** The student will have been identified as violating an established standard of professional conduct/judgment or moral/ ethical behavior, and the department chair or program director will have been notified.

**Step 2.** The department chairperson or program director will meet with the individual(s) making the allegation and the student's faculty adviser to review the available information and determine the veracity of the allegations.

**Step 3.** The department chairperson, student and faculty adviser, whenever possible, will meet as promptly as possible after the alleged incident. The department chairperson will report to the student the facts and available information and will seek to authenticate or clarify the allegations where possible. If it is determined that there is no basis for the allegation, no further action will be taken.

**Step 4.** If it is determined that there is a basis for the allegation and that further investigation is necessary, a preliminary hearing of the departmental Committee on Progress and Promotions will be convened to review the allegations and recommend a course of action. The department chairperson will inform the student and the dean in writing of the preliminary hearing and the following:

- Date
- Name of student
- Nature of the allegations
- Date of alleged incident/occurrence
- Professional attributes that allegedly violate standards: skill, behavior, judgment, ethical values, etc.

For more information regarding the procedures for handling instances of unprofessional conduct, see the current departmental student handbook, University Catalog and the College of Health Sciences Policies and Procedures for the Rush University Rules for Governance.

## Incidents in the Clinical Agency

An incident that affects patients' or staff's well-being, or the patient's prescribed care, will be reported to the clinical instructor or preceptor immediately. An institutional incident report will then be completed following the policy of the health care institution or hospital in which the incident occurred. A duplicate of the hospital incident report, as well as a memorandum of explanation from the clinical instructor or preceptor, will be placed in the student's clinical file, and the department chairperson, program director or clinical director will be notified immediately. Incidents involving gross errors in judgment or practice on the part of the student will constitute grounds for dismissal from the program.

## Criminal Background Checks and Drug Testing

Programs offered in the College of Health Sciences often require that clinical rotations, practica, internships or other learning experiences be successfully completed in hospitals and other health care facilities in order to meet program requirements. Because the use of these facilities is required, students must be able to successfully complete their assigned rotations in order to fulfill the academic requirements of their program.

Hospitals and other health care facilities often have policies requiring criminal background checks for employees, students and volunteers. These facilities may refuse to accept individuals for clinical, practicum or other experiential rotations based on past criminal convictions.

Students should be prepared to comply with the policies and procedures at any facility where they are assigned as part of their educational program and may not request facility assignments in an effort to avoid specific requirements. Students who have certain types of information in their criminal background checks may be ineligible to complete rotations in specific facilities. Students who are not allowed to participate at assigned facilities or who are terminated from rotations based on the results of a criminal background check will be unable to complete the program requirements for graduation and will be subject to dismissal on academic grounds.

Students should also be advised that persons with certain types of criminal convictions may not be eligible for state licensure or national registry or certification, or both. In addition, many employers perform criminal background checks and may not hire individuals with certain types of criminal convictions.

## Drug Testing

Hospitals and other health care facilities often have policies requiring drug testing for employees, students and volunteers. Some facilities provide that students who test positive for drugs are ineligible to complete clinical, practicum or work assignments in that facility. Students should be prepared to comply with the policies and procedures at any assigned facility and may not request facility assignments in an effort to avoid drug screening requirements. Students who fail to report for clinical or practicum assignments or who are terminated from rotations because they violate the drug-testing or drug-use policies of the facilities will be subject to dismissal from the program.

## Procedures Implementing Academic Accommodation for Students Seeking Accommodations

Rush University is committed to diversity, and attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values — I CARE (innovation, collaboration, accountability, respect and excellence) — translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support.

Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations. Students who may need special accommodations can access this information at [www.rushu.rush.edu/office-student-accessibility-services](http://www.rushu.rush.edu/office-student-accessibility-services).

## Student Government

A Student Government Association exists for the students enrolled in the College of Health Sciences. Student representatives will be elected by the student body in such a manner as to provide appropriate representation for all students in the College of Health Sciences.

## Release of Student Information

Students must sign a release requesting enrollment verification, verification of degree, recommendations, letters of reference or release of other student information. For a Letter of Degree or Enrollment Verification, the student should use the form provided by the Office of the Registrar. The Office of the Registrar is the only office at Rush University

authorized to release enrollment or degree verification information.

For recommendations or letters of reference, a release form is required for personally identifiable information from a student's education record given out by College of Health Sciences faculty. (Please note: The College of Health Sciences requires that all recommendations or letters of reference - even if they are based upon the recommender's personal observation or knowledge - have a release form on file before the person writing the recommendation can release the recommendation or letter of reference.)

Student grades will not be posted and cannot be given out over the telephone or via email.

For additional information, students should refer to the Rush University Policy on Privacy and Confidentiality of Student Records and FERPA.

## Student Academic Appeal and Grievance Procedures

The College of Health Sciences student appeals and grievance procedures provide a mechanism allowing student to obtain a review of a complaint of unfair treatment. The student appeals procedures shall not be used to question a rule, procedure or policy established by an authorized faculty or administrative body. Rather, it shall be used to provide due process for those who believe that a rule, procedure or policy has been applied in an unfair or inequitable manner, or that there has been unfair or improper treatment by a person or persons.

Students who are appealing an academic decision that could result in a dismissal from the University may be allowed to continue to progress in the program until the issue is resolved. If the academic decision is upheld and the student is dismissed from the University, they will be withdrawn from their current classes. This withdrawal will be backdated to before the beginning of the term, and the student will receive 100% tuition reimbursement for that term.

A student wishing to appeal an academic decision should follow the process summarized below in the sequence indicated:

**Step 1.** In the academic community, the responsibility for course development, course delivery and the assessment of student achievement rests primarily with each course instructor. Any student who has a complaint of inappropriate treatment related to a course should first seek to resolve it

informally with the course instructor. If the course instructor is the department chairperson or if the complaint does not pertain to a specific course, the student should seek resolution with the department chairperson at the outset.

1. A student with such a complaint must request reconsideration, in writing, of the application of a rule, procedure or policy, or unfair or improper treatment within five working days following the incident that forms the basis for the complaint (e.g., five days after grades are posted).
2. The instructor will meet with the student or speak with the student via telephone for those students who are unable to come to the chairperson's office, if so requested by the student. The instructor will notify the student in writing of the decision regarding the complaint within five working days following the meeting or discussion.

**Step 2.** If resolution is not achieved informally, as described in Step 1, the student should seek resolution with the chairperson of the department in which the course is offered within five working days following notification by the instructor of their decision.

1. The chairperson will meet with the student - or speak with the student via telephone for those students unable to come to the chairperson's office if so requested by the student - following receipt of the student's request for resolution to discuss the problem or complaint.
2. The chairperson will notify the student of their decision in writing following the meeting or discussion.

**Step 3.** If the issue was not resolved in Step 2, the student may submit a written appeal, describing the nature of the student's complaint and reasons for seeking an appeal, to the student progress and promotion committee of the department within five working days following notification by the department chairperson of their decision.

1. The student may appear before the committee in person, make an oral statement and answer questions from the committee. The student will not be allowed to be present during committee deliberations.
2. The committee may request that the course instructor or faculty member named in the grievance appear before the committee to make an oral statement and answer questions. The instructor or faculty member named in the grievance may not be present during committee deliberations.
3. Following review of information provided, the committee will notify the student of its decision.

**Step 4.** If the issue was not resolved to the student's satisfaction in Step 3, the student may submit a written request seeking a hearing to the dean within five working days of receiving the department progress and promotion committee decision. The written request should include a description of the complaint and the reason the student is seeking an appeal.

1. The dean will meet with the student for a hearing following receipt of the written request from the.
2. Following the meeting with the student, the dean may render a decision or choose to appoint a panel to investigate the grievance and make a recommendation to the dean.

Following review of the information provided and any recommendations from the panel, should one be appointed, the dean will then notify the student of their decision. The decision of the dean shall be final.

### **Addendum to the Academic Appeal and Grievance Process**

When a student appeal reaches the level of the dean of the College of Health Sciences, the dean may refer the case to a committee for the purpose of investigating the appeal or grievance and making a recommendation to the dean. The purpose of this addendum is to describe the procedure followed by the committee.

The College of Health Sciences has established a standing committee of 10 members of its Faculty Council. The committee members will be determined each fall for the subsequent year. Five members will be selected from the standing committee, as available and appropriate, to serve on an appeals hearing committee. The five members will include a designated chair of the committee, who will be the chair of the Faculty Council if available. If the chair of the Faculty Council cannot serve as chair of the committee, one of the five selected committee members will be appointed as chair of the appeals committee by the chair of the Faculty Council.

If a member of the standing committee is in the same department as the student involved or has a conflict of interest related to the student, the committee member shall recuse from the hearing. Faculty who are also students in the College of Health Sciences program that the student is enrolled in may not serve on the standing committee.

The hearing will be closed and confidential, all documentation related to the appeal shall be kept confidential and its distribution limited to individuals on a need-to-know basis. Transcripts of a hearing are not required. Students may take notes but may not record the hearing.

The steps for the appeal process are as follows:

1. The dean will notify the chair of Faculty Council of a student grievance or appeal at the level of the Office of the Dean that permits a hearing. Within 24 hours, the chair will provide the dean with a receipt of the notice.
2. Within 10 business days of the submission of the appeal to the dean, the student will submit a written summary that includes the following information:
  - Action being appealed; and course number and grade or evaluation, if applicable
  - Action requested
  - Justification for request
  - Outline of effort and actions taken to date to obtain consideration of the request

The dean reserves the right to ask for points of clarification that must be provided within five business days of the query.

Within 20 business days of the submission of the appeal to the dean, a College of Health Sciences designee as designated by the committee (someone from the student's progress and promotions committee) will submit a written account of the evidence against the student, along with a summary of the account and appendices providing the evidence. The dean reserves the right to ask for points of clarification that must be provided within five business days of the query.

Formal rules of evidence shall not be applicable. Evidence presented should be reasonably related to the issue before the committee and shall not be overly repetitious. All evidence shall be admissible unless clearly redundant or irrelevant to the issue being reviewed. The student may call witnesses on their behalf. The chair of the appeals committee shall have the right to limit witnesses based on redundancy or relevance to the issue.

3. The student appeal summary will be submitted to the chair of the appeals committee, who will then schedule a hearing for the appeal — to occur within 15 business days of the receipt of the written summaries. The appeal hearing will be scheduled for one hour and 30 minutes within one of the classrooms or conference rooms.
4. The hearing will be convened by the chair of the appeals committee. At the hearing, the following people will attend: the five selected members of the standing committee, including the chair of the appeals committee, and the student. The dean or designee may attend as an observer

during the hearing. The student may choose to have at the hearing a representative, who may be an attorney, serving in a non-speaking role in support for the student. The committee may have at the hearing a University attorney, who will serve only in an advisory capacity.

5. The role of the committee members is to (a) hear the grievance or appeal, (b) consider all evidence, (c) ask clarifying questions as needed and (d) make a recommendation to the dean based on a preponderance of the evidence.
6. The College of Health Sciences designee from the student's progress and promotions committee will present evidence concerning the student.
7. The student will present their evidence in support of their grievance or appeal and shall have the burden of establishing that their request should be granted. At the conclusion of the hearing, the chair will excuse the student prior to the committee's deliberations.
8. A designated committee member will take summary notes, including time, what evidence is presented by whom and final disposition of the committee. A decision will be reached by a majority vote of the five committee members.
9. Following deliberations, the committee will provide a recommendation to the dean, which should include a summary of the evidence presented at the hearing. The dean will consider the committee's recommendation and render a final decision.

## **Committees**

The senior administrative and policy body of the College of Health Sciences is the Chairs Council. Its membership consists of the chairpersons of each of the college's departments and a representative of the Faculty Council.

The senior representative body of the College of Health Sciences is the Faculty Council. Its membership comprises faculty members representing all departments and ranks.

The Committee on Senior Faculty Appointments and Promotions recommends all promotions and appointments of faculty to senior ranks. It is elected by the faculty and has representatives from all departments in the college.

In addition, the dean may appoint special committees and task forces of the college to meet specific college needs, such as strategic planning.



## College of Health Sciences Academic Programs

### Cardiopulmonary Sciences

Cardiovascular Perfusion (MS)

Respiratory Care (MS)

Respiratory Care: RRT Advanced Standing (MS)

### Communication Disorders and Sciences

Audiology (AuD)

Speech-Language Pathology (MS)

### Clinical Nutrition

Clinical Nutrition (MS)

Clinical Nutrition/Dietetic Internship (MS)

### Health Sciences

Health Sciences (BS)

Health Sciences (PhD)

### Health Systems Management

Health Systems Management (MS)

### Medical Imaging Sciences

Imaging Sciences (BS)

Vascular Ultrasound and Technology (BS)

### Medical Laboratory Science

Specialist in Blood Bank Technology (CP)

Clinical Laboratory Management (MS)

Medical Laboratory Science (MS)

### Occupational Therapy

Occupational Therapy (OTD)

### Physician Assistant Studies

Physician Assistant Studies (MS)

## Cardiopulmonary Sciences

### Master of Science Cardiovascular Perfusion (MS)

#### Program Overview

The Master of Science degree is intended for those whose baccalaureate degree is in a field other than cardiovascular perfusion. The Cardiovascular Perfusion program curriculum provides the knowledge, clinical experiences and opportunity for our students to achieve competence in the practice of cardiovascular perfusion.

This medical specialty has become increasingly important in the health care field. The perfusionist serves primarily as part of the cardiovascular surgical team, operating the heart-lung machine during open-heart surgery. The perfusionist is also responsible for other life-support equipment, such as intra-aortic balloon pumps, ventricular assist devices and extracorporeal membrane oxygenation. In addition to cardiovascular surgery, additional professional practice may include veno-venous bypass for liver transplantation, isolated limb or organ chemotherapy perfusion, cardiopulmonary bypass supported cardiac catheterization procedures and blood salvaging for orthopedic or general surgery procedures.

Students in the Cardiovascular Perfusion program will benefit from the teaching and research expertise of established scholars and practitioners. The program is committed to providing increased opportunities for experiential learning at nationally ranked cardiac centers across the country.

### Cardiovascular Perfusion: Admission Requirements

- A baccalaureate degree from an accredited college or university.
- Receipt of official transcripts from each institution of higher education attended.
  - If a college or university outside the United States conferred the baccalaureate degree, the Education Credentials Evaluators, or ECE, must evaluate international transcripts. A detailed course-by-course report is required. Contact ECE at (414) 289-3400 or [www.ece.org](http://www.ece.org).
- Cumulative and science GPA of 3.0 on a 4.0 scale.
- Receipt of three letters of recommendation.
- Applicants who did not complete high school in the United States must submit TOEFL scores.

- The following courses must be completed with a grade of C or better prior to enrolling. Required courses must be taken for a letter grade rather than a pass-fail option.

#### Natural and Biological Sciences

16 semester hours or 24 quarter hours

Science courses must include the following:

- One semester of inorganic chemistry
- One semester of physics
- One semester of a human anatomy course AND
- One semester of a human physiology course OR
- Two semesters of a combined anatomy and physiology course with a laboratory component

Some community college introductory science classes may not be comprehensive enough to satisfy the prerequisite requirements. For any questions about courses, please contact the Office of College Admission Services at (312) 942-7100 to speak with an admissions counselor.

#### Mathematics and Statistics

Two college-level mathematics courses, which must include an introductory course in statistics.

#### English Composition

Two courses or documented proficiency at composition II level. Although not required, applicants are encouraged to take additional courses focusing on written communication, because writing skills are essential for the successful completion of the Cardiovascular Perfusion Program.

#### Social Sciences

14 semester hours or 20 quarter hours

Course work must include the following:

- Introduction to psychology
- Introduction to sociology
- Other social science courses (may include psychology, sociology, economics, history and anthropology)

#### Humanities

Eight semester hours or 12 quarter hours

- Humanities courses include the following: religion, philosophy, foreign languages, literature, or the history of art, music, theater, film or dance. Studio art classes, instrumental music classes, and speech classes are not acceptable.
- Medical Terminology

Applicants must complete all the required prerequisite coursework with a grade of C or better prior to enrolling at Rush.

#### Additional Recommendation

In addition, it is highly recommended that prospective students talk to a clinical perfusionist and, if possible, observe a procedure requiring the use of cardiopulmonary bypass.

### Cardiovascular Perfusion: Technical Standards

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values — I CARE (innovation, collaboration, accountability, respect and excellence) — translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support.

Rush is committed to excellence in accessibility. We encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Cardiovascular Perfusion program:

#### Acquire Information

- Acquire information from demonstrations and experiences in courses such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies
- Recognize and assess patient changes in mood, activity, cognition, verbal and non-verbal communication

#### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers
- Use and interpret information related to physiologic phenomena generated from diagnostic tools

#### Motor

- Possess psychomotor skills necessary to provide or assist in holistic cardiovascular perfusion care and perform or assist with procedures and treatments

- Practice in a safe manner and appropriately provide cardiovascular perfusion care and assessment in emergencies and life support procedures, and perform universal precautions against contamination

#### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors and all members of the health care team during practicum and other learning experiences
- Accurately elicit information, including a medical history and other information, to adequately and effectively evaluate a population's, client's or patient's condition

#### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the cardiovascular perfusion role
- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment or treatment strategy

#### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

#### Character

- Demonstrate concern for others
- Integrity, accountability, interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and Cardiovascular Perfusion Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs.

Given the clinical nature of our programs, time may be needed to implement the accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged. To learn more about accommodations at Rush University please contact the Office of Student Accessibility Services:

Marie Ferro-Lusk, MBA, MSW, LSW  
 Director, Office of Student Accessibility Services  
 Rush University  
 600 S. Paulina St., Suite 901  
 Chicago, IL 60612  
 (312) 942-5237  
 Marie\_Lusk@rush.edu

## Cardiovascular Perfusion: Educational Activities

The faculty of the department is responsible for providing both the didactic coursework and the clinical experiences necessary for the completion of the Master of Science degree in Cardiovascular Perfusion. The program is accredited by the Accreditation Committee-Perfusion Education of the Commission on Accreditation of Allied Health Education Programs.

## Cardiovascular Perfusion: Service Activities

Faculty members are licensed perfusion technologists actively involved in the daily activities of the Department of Extracorporeal Services.

## Cardiovascular Perfusion (MS): Curriculum

Central themes of evidence-based practice, leadership, cultural competence, technology integration and scholarship are addressed throughout the program and recognized by the professional commitments of our graduates and faculty.

The Cardiovascular Perfusion program curriculum provides the knowledge, clinical experiences and opportunity for our students to gain competence in the practice of cardiovascular perfusion.

Students in the Cardiovascular Perfusion program benefit from the teaching and research expertise of established

scholars and practitioners. The program is committed to providing increased opportunities for experiential learning at nationally ranked cardiac centers across the country.

Graduates of the program will be qualified to sit for the certification examination of the American Board of Cardiovascular Perfusion.

### Curriculum

First Year		Credits
<b>Fall Term</b>		
CVP-605	Cardiopulmonary Anatomy and Physiology	3
CVP-611	Cardiovascular Perfusion Technology I	3
CVP-612	Instrumentation in Cardiovascular Perfusion	3
CVP-620	Evaluation of the Cardiac Surgery Patient	3
CVP-621	Seminar I	3
CHS-601	Introduction to Biostatistics	2
IPE-502	Interprofessional Patient Centered Teams	Non Credit
<b>Spring Term</b>		
CVP-606	Acid Base Physiology	2
CVP-615	Cardiovascular Perfusion Technology II	3
CVP-622	Pathophysiology and Perfusion Techniques	5
CVP-632	Principles of Pharmacology	3
CHS-610	Research Methods in the Health Sciences	2
IPE-502	Interprofessional Patient Centered Teams	Non Credit
<b>Summer Term</b>		
CVP-623	Adult and Pediatric Congenital Heart Disease	2
CVP-624	Mechanical Circulatory Support	2
CVP-640	Principles and Practices of Cardiopulmonary Bypass With Simulation	4
CVP-641	Perfusion Practicum I	4
CVP-661	Master's Project I	2
<b>Second Year</b>		
<b>Fall Term</b>		
CVP-642	Perfusion Practicum II	12
CVP-662	Master's Project II	2
CVP-680	Organizational Leadership	2
<b>Spring Term</b>		
CVP-645	Perfusion Practicum III	12
CVP-664	Master's Project III	2
CVP-681	Health Care Quality & Operations Management	2
<b>Hours Required for MS Degree: 78</b>		

## Respiratory Care - Professional Phase, Two-Year Track (MS)

### Program Overview

The Division of Respiratory Care in the College of Health Sciences at Rush University is dedicated to clinical and academic excellence in teaching, research, service and patient care. The Respiratory Care program is designed to provide students with an outstanding education in preparation for a satisfying professional career as advanced respiratory care practitioners, as well as to provide a foundation for leadership in management and supervision, research and clinical specialization.

The Respiratory Care program involves motivation, curiosity, professional fulfillment and personal satisfaction. The work is both hard and rewarding.

Interaction with faculty, therapists, physicians and nurses is essential and is the key to the program. Students engage in seminars, intensive classes and laboratories, and clinical training in hospitals. The result is an outstanding education in respiratory care, but it is more than that: There is a sense of personal growth and a real commitment to serving people.

The overall purpose of the program is to provide a high quality education that is relevant and professionally sound to meet the respiratory care leadership needs in the health care community. Inherent in this purpose is the goal to prepare respiratory therapists who can demonstrate the attitudes, skills and knowledge required to meet the changing needs in the community.

It will be necessary for the respiratory therapist to collaborate with all members of the health care team to identify and solving the problems that relate to respiratory diseases and disorders of the cardiopulmonary system. The respiratory therapist must be able to think critically, communicate effectively, demonstrate judgment and provide self direction. It is a primary objective of the program to educate well qualified, competent respiratory therapists who demonstrate leadership ability.

As an academic medical center program, the Respiratory Care program must also make an appropriate contribution in the areas of research, service and patient care. With respect to research and scholarship, the division conducts and publishes original research studies, participates in the publication of textbooks and chapters, abstracts and invited presentations based on original research. Service activities include participation on local, state and national professional boards and committees, community service, university service activities and continuing education. Patient care is

integral to the division's teaching, research and service activities. The faculty embrace the practitioner-teacher model and are passionate about students achieving academic excellence and professional competence.

The Respiratory Care program is dedicated to the mission, vision and values of the College of Health Sciences, University and Medical Center.

## Master of Science Program

The Master of Science degree in respiratory care requires a minimum of 92 semester hours of credit for graduation. This is an integrated program, requiring 29 semester hours of program preprofessional prerequisite requirements prior to admission to Rush University for the professional phase (24 months). The preprofessional phase requirements may be completed at any accredited college or university and include the successful completion of a baccalaureate degree. Dedicated to clinical and academic excellence, the professional phase includes over 1000 hours of clinical practice.

As a leadership program in respiratory care, this course of study aspires to provide graduates with the foundation needed to assume professional leadership roles in clinical practice, clinical specialty areas, research, education and management. Upon completion of the program, graduates are eligible for the national board examinations in respiratory care, as well as state licensure.

## Respiratory Care (MS): Admission Requirements

Admission to the program is on a competitive basis. Student selection is based on a number of factors, including overall grade-point average, prerequisite grade-point average, consistency of academic performance, coursework completed prior to application, Graduate Record Examination (GRE) scores and interpersonal abilities. The program is rigorous, and applicants are required to arrange an orientation visit to a respiratory care department at a hospital prior to acceptance to the program if the applicant has no previous experience in the field of respiratory care.

Requirements for admission to the professional phase of the program in respiratory care include the following:

- A minimum overall GPA of 2.5 in undergraduate coursework
- Completion of all professional prerequisite required courses with a grade of C or better



- Completion of a bachelor's degree
- Senior standing at the time of application and the ability to complete all preprofessional coursework by the beginning of the fall term of the first year
- Submission of the GRE graduate school entry exam scores is encouraged but not required (from an examination taken within five years of the date of application to the program)
- A personal interview with division faculty
- Completed application to the program and submission of official transcripts for all college coursework completed

### Program Prerequisites

All program prerequisite courses must be taken prior to entry into the first year of the regular professional program (alterations in the student's planned program require **written approval** by the department chairperson/program director). Registration for the first sequence of professional courses in the program requires the following:

- Admission into the program
- Completion of human anatomy and physiology, chemistry, physics, microbiology, psychology, mathematics (college algebra or higher) and statistics with a grade of C or better
- Consent of the Committee on Progress and Promotions for Respiratory Care

**Please note:** Individuals holding the RRT credential may be admitted to the program prior to completion of all program prerequisites.

## Respiratory Care: Technical Standards

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values — I CARE (innovation, collaboration, accountability, respect and excellence) — translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support.

Rush is committed to excellence in accessibility. We encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Respiratory Care program:

### Acquire Information

- Acquire information from demonstrations and experiences in courses, such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies
- Recognize and assess patient changes in mood, activity, cognition, verbal and non-verbal communication

### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers
- Use and interpret information related to physiologic phenomena generated from diagnostic tools

### Motor

- Possess psychomotor skills necessary to provide or assist in holistic respiratory care and perform or assist with procedures and treatments
- Practice in a safe manner and appropriately provide respiratory care and assessment in emergencies and life support procedures, and perform universal precautions against contamination

### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors and all members of the health care team during practicum and other learning experiences
- Accurately elicit information, including a medical history and other information, to adequately and effectively evaluate a population's, client's or patient's condition

### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to the diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the respiratory care role
- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment or treatment strategy

### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

### Character

- Demonstrate concern for others
- Integrity, accountability, interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and Respiratory Care Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program, should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs.

Given the clinical nature of our programs, time may be needed to implement the accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Accessibility Services to learn more about accommodations at Rush University:

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 Rush University  
 600 S. Paulina St., Suite 901  
 Chicago, IL 60612  
 (312) 942-5237  
 Marie\_Lusk@rush.edu

## Respiratory Care: Academic Policies

### Master of Science

All professional courses (RCP prefix) in the program are taught in a sequential manner. Each professional course in the program serves as the prerequisite for the subsequent course. Consequently, professional courses must be taken in sequence.

**Withdrawing or failure to successfully complete a professional course with a letter grade of C or better may result in the student being placed on a three-year track, given a leave of absence, or LOA, and academic probation or dismissed from the program after review by the Committee on Progress and Promotions.** Students readmitted to the program at times other than the fall term of the second year will pick up the course sequence as prescribed by the chairperson/program director or Committee on Progress and Promotions for Respiratory Care.

### Standards of Performance for Respiratory Care and Major Field-Related Courses

90-100 = A

80-89 = B

75-79 = C

70-74 = D

Below 70 = F

Unless otherwise described in a given course syllabus, the minimum satisfactory grade for course credit is a letter grade of C, and all stipulated segments of a course must be passed by this standard. Students must demonstrate proficiency in all clinical skills presented in order to pass clinical courses. For all clinical courses, the final exam must be passed at the designated cut score and a grade of C or better must be maintained in order to successfully complete each clinical course to continue in the program.

**Students are expected to maintain an overall GPA in the program of at least 3.0.**

Failure to maintain a cumulative GPA of at least 3.0 will subject the student to a review and may result in the student being placed on probation, given an LOA or dismissed from the program after review by the Committee on Progress and Promotions.

If a student is dismissed and wishes to re-enter the program, they must reapply and will be considered on the same basis as any new applicant. Students who voluntarily withdraw from the program, either passing or failing, have no guarantee of reinstatement to the program. Students requesting readmission to the program should submit a letter to that effect to the Committee on Progress and Promotion for Respiratory Care. Students readmitted to the program will pick up the course sequence as prescribed by the chairperson/program director or Committee on Progress and Promotions for Respiratory Care.

## Clinical Final Examinations

All students are required to pass the clinical final examination after completing clinical courses to continue in the program. In the event a student fails the clinical final examination, the student is allowed to make one more attempt to pass. In the event the student passes the clinical final exam on the second attempt, the student will continue in the program. The grade earned on the first attempt will be used to calculate the final clinical grade.

In the event the student does not pass the clinical final exam on the second attempt, the student will be placed in remediation. The student will be given a third attempt to pass the final exam by the end of the next term. In the event the students does not pass on the third attempt, the student will earn an F in the clinical course and may be suspended or released from the program.

## Comprehensive End-of-Program Competency Assessment Examination

Before graduating, the student will complete comprehensive end-of-program examination assessments (NBRC secure Therapist Multiple Choice, or TMC, and clinical simulation examinations, or CSE). The TMC examination will be taken at the end of the spring term of the second year as a part of RCP 575, Clinical Practice III. The CSE will be given at the beginning of the summer term of the second year as part of RCP 585, Clinical Practice IV. A passing score is required to successfully complete RCP 575 and RCP 585, as well as to meet graduation and program course completion requirements.

Students who do not successfully complete the comprehensive self-assessment examinations will receive an incomplete grade of I for RCP 575 and/or RCP 585. Those students failing and receiving an I grade will be required to attend remediation over the following term. Those failing the examination after multiple attempts or failing to attend remediation may be subject to dismissal from the program. Those students may reapply to the program (see Procedures for Readmission).

## Conduct and Ethics

Each student is expected to conduct oneself in a dignified manner at all times. This manner conforms to the ethics of the profession and instills patient confidence in one's abilities as a health care practitioner. Each student is expected to conform to the professional code of ethics as outlined in this handbook and the policies outlined in the University catalog.

Irresponsible, unprofessional or unethical behavior as determined by the instructor, or failure to follow the instructions of a clinical instructor during clinical practice, may result in dismissal from the program. Falsification on any clinical documents will be treated as scholastic dishonesty. All hospital regulations are to be followed by students when undergoing clinical training in a facility.

If employed by a clinical site in which the student is assigned a clinical rotation, the student must not complete clinical coursework while in an employee status.

## Scholastic Dishonesty and Cheating

The division will not condone cheating in any form.

Plagiarizing or copying others writing or work is considered cheating. Any allegations of cheating will be reviewed by the Committee on Progress and Promotions for Respiratory Care and, if merited, dealt with in a strict manner, including immediate dismissal from the program.

Any student found to be cheating on an examination, test, quiz or assignment will automatically receive a grade of 0 and will be subject to dismissal from the program at the discretion of the Committee on Progress and Promotions for Respiratory Care. Plagiarism on drafts of assignments may result in a grade of 0 for the entire assignment. Failure to report incidents involving scholastic dishonesty on the part of another student will be considered unprofessional conduct on the part of the student and may result in disciplinary action.

## Examination Review

At the discretion of the course instructor, during review of any examination given within the curriculum, no other papers or books will be allowed on the student's desk. No writing implements of any kind will be allowed. NO note-taking or recording of any kind will be permitted. This includes written note-taking and/or any form of mechanical, electronic, audio, or video recording. Violation of this policy will constitute academic dishonesty and will be referred to the Committee on Progress and Promotions for review and possible disciplinary action.

## Examination Administration

All examinations given by the division will be monitored by faculty or staff at all times. Students will be seated in such a manner as to minimize the opportunity for observation of other students' examination papers. No breaks will be allowed once an examination period has begun, and students may not leave the room during an exam until they

are finished taking the examination, except in the event of an emergency, which will be judged by the faculty or staff monitoring the exam on a case by case basis.

If a student turns in an examination without answering all questions, he or she will NOT be given an opportunity to finish the examination after leaving the room.

Only marks made on the Scantron sheet will be used to compute a grade on all Scantron-graded examinations. Even if a student marks the answer correctly on their examination but does not mark it correctly on the Scantron, only the Scantron answer will be used to compute the grade — not the answer marked on the examination.

Calculators will be provided to students for examinations, thus personal calculators will not be allowed during examinations.

## Policy for Transfer Students

Students who have completed coursework at other approved respiratory care programs may petition to have these courses transfer in lieu of specific coursework in the Rush University program. Students must submit a transcript of their courses from the program and a copy of the course syllabus for each course in which they desire transfer credit. The syllabus must contain the following: course objectives, lecture outlines, course content, evaluation procedures and related information. These courses will be evaluated on an individual basis for content and total contact hours and credit hours.

The division reserves the right to test the proficiency of any student in coursework transferred from other respiratory care programs and the right to disallow such transfer credit in such coursework in cases where the student cannot

demonstrate acceptable proficiency. All transfer credit is subject to the approval of the Committee on Progress and Promotions for Respiratory Care. The student must also have a minimum grade of B (3.0) for each course being transferred.

A student cannot receive transfer credit for any respiratory care coursework if they left the previous program due to academic probation, suspension or exclusion. All University policies regarding transfer credit must be satisfied.

## Respiratory Care (MS): Graduation Requirements

- Completion of all required coursework with a grade-point average of 3.0 or better
- Completion of each required respiratory care professional course with a grade of C or better
- Basic Life Support (BLS), Advanced Cardiac Life Support (ACLS), Pediatric Advanced Life Support (PALS) and Neonatal Resuscitation Provider (NRP) course completion
- Successfully complete a division research project
- Completion of all University requirements for graduation

## Respiratory Care (MS): Curriculum

### Preprofessional Phase - Program Prerequisites

The preprofessional phase (lower-division, college-level coursework) requires a minimum of 29 term hours of prescribed study as outlined below.

Professional Prerequisites	Credit Hours
Human Anatomy and Physiology (or 4 hours Anatomy and 4 hours Physiology)	8
Chemistry (With Lab)	4
Physics (With Lab)	4
Microbiology (With Lab)	4
Psychology (Courses With prefixes PSYC)	3
Mathematics (College Algebra or Higher)	3
Statistics	3
<b>Total</b>	<b>29</b>

## Professional Phase: Respiratory Care Professional Courses

### Two-Year Track: MS Degree

Students accepted into the professional phase begin coursework in the fall term of the first year of the program. Coursework in the professional phase is taken on a full-time basis in the following sequence:

First Year		Credits
<b>Fall Term</b>		
RCP-501	Foundations of Professional Practice	3
RCP-511	Introduction to Respiratory Care	3
RCP-512	Cardiopulmonary Anatomy and Physiology	5
RCP-515	Respiratory Care Pharmacology	2
<b>Spring Term</b>		
RCP-520	Respiratory Care Equipment & Techniques	4
RCP-521	Patient Assessment	4
RCP-522	Pulmonary Disease	3
RCP-523	Mechanical Ventilation	4
<b>Summer Term</b>		
RCP-531	Critical Respiratory Care	4
RCP-532	Pulmonary Function Testing	3
RCP-533	Pediatric & Neonatal Respiratory Care	4
RCP-534	Clinical Practice I	3
RCP-563	Research Methods	3
Second Year		Credits
<b>Fall Term</b>		
RCP-530	Cardiac Diseases	2
RCP-566	Education	3
RCP-565	Research Project	1
RCP-567	Management	3
RCP-569	Clinical Practice II	7
<b>Spring Term</b>		
RCP-570	Cardiopulmonary Diagnostics	2
RCP-573	Research Project II	1
CHS-601	Introduction to Biostatistics	2
RCP-575	Clinical Practice III	7
RCP-577	Clinical Seminar	3
<b>Summer Term</b>		
RCP-583	Research Project III	1
RCP-585	Clinical Practice IV	8
RCP-589	Disease Management/Home Health	3
CHS-605	Introduction to Ethics in Healthcare	2
CHS-620	Health Care in America	2
<b>Program Total:</b>		<b>92</b>

## Respiratory Care: RRT Advanced Standing (MS)

### Program Overview

#### Introduction

Individuals may have acquired academic credit in respiratory care courses from other schools and universities. Some individuals may acquire knowledge through experience and on the job training. When such persons apply for admission into the program, an attempt is made to grant academic credit for equivalent educational courses, equivalent knowledge acquired from experience and/or successful completion of the National Board for Respiratory Care's certification and registry examinations.

All students graduating from the Respiratory Care program must meet the same standards for graduation; the awarding of advanced standing does not signify a lesser quality education than that offered through regular course work. What it does, however, is attempt to exempt the student from those areas of the formal program where the student already has the knowledge and expertise in those skills that would be offered. The program has identified the minimum competencies that a respiratory therapist must have in order to provide safe, high-quality patient care. The identification of these competencies is a complex task, and a great deal of care must be taken to ensure a standard of excellence.

The following policies and procedures are designed to ensure that those individuals who receive advanced standing are qualified to do so, and that the screening process adheres to University and departmental policies at all times.

It is not in the student's or program's best interest to allow individuals who are not qualified to receive advanced standing.

To allow individuals who are not qualified, to receive advanced standing, is not in the student's or the program's best interest.

#### Definition

Advanced standing is defined as a special and individually determined status granted to a student in a formal educational setting who has already gained professional experience through other sources or through non academic experiences, knowledge, skills and professionalism taught in the program courses.

#### Purpose of Advanced-Standing Procedures

The purpose of the advanced-standing procedures is to recognize and give formal educational credit for knowledge and/or ability gained through previous training or experience.

### Methods of Granting Advanced Standing

1. Advanced standing can be awarded through transfer credit.
2. Advanced standing can be awarded through the passing of an equivalency examination covering a certain area of knowledge. (An equivalency examination is an instrument or means by which a student accepted into the Respiratory Care program can demonstrate mastery of a knowledge area, content area or skill, and thus be exempted from a course in the program that teaches that area or skill.)
3. Advanced standing can be awarded as credit for successful completion of national registry examinations (RRT/RPFT).

### Eligibility for Advanced Standing

1. Transfer students who have been accepted into the Rush University Respiratory Care program may receive a transfer credit for equivalent courses within the Respiratory Care program curriculum.
2. Credentialed students (RRT, RPFT) who have been accepted into the Rush University Respiratory Care Program may receive transfer credit and will also be eligible to take equivalency examinations in certain courses.

### Policy for Transfer Students

Students who have completed coursework at other approved respiratory care programs may petition to have these courses transfer in lieu of specific coursework in the Rush University program. Students must submit a transcript of their courses from the program and a copy of the course syllabus for each course in which they desire transfer credit. The syllabus must contain the following: course objectives, lecture outlines, course content, evaluation procedures and related information. These courses will be evaluated on an individual basis for content and total contact hours and credit hours.

The department reserves the right to test the proficiency of any student in coursework transferred from other respiratory care programs and the right to disallow such transfer credit in such coursework in cases which the student cannot demonstrate acceptable proficiency. All transfer credit is subject to the approval of the Committee on Progress and Promotions for Respiratory Care. The student must also have a minimum grade of B (3.0) for each course being transferred. A student cannot receive transfer credit for any respiratory care coursework if he or she left the previous program due to academic probation, suspension or exclusion. All University policies regarding transfer credit must be satisfied.

## Policy for Individuals Who Hold the RRT Credential

Advanced standing is available to individuals who have successfully completed the National Board for Respiratory Care's Respiratory Therapy Registry (RRT), who hold a baccalaureate degree from a regionally accredited college or university. Those eligible for advanced standing must submit the following documentation:

1. A notarized copy of the RRT certificate indicating that it is a true and accurate copy
2. Official transcripts of all previous respiratory care and general education coursework attempted and/or completed indicating award of the bachelor's degree from an accredited college or university
3. A notarized copy of the certificate of completion from an approved respiratory care training program as applicable
4. A completed application for admission to the advanced-standing program. This is available through the Allied Health Centralized Application System (AHCAS)
5. A letter directed to the Committee on Progress and Promotions for Respiratory Care requesting advanced standing.

## RRT Advanced Standing (MS): Admissions Requirements

Individuals holding the RRT credential and a baccalaureate degree may apply to enter the Respiratory Care graduate program prior to any semester. Submission of an application for admission should be made through the Allied Health Centralized Application System (AHCAS) with all official transcripts, NBRC RRT certificate and a personal interview at least 30 days prior to the first day of the semester when the individual desires to begin classes. Professional prerequisites must be completed prior to graduation. All other program policies and procedures apply.

## RRT Advanced Standing (MS): Technical Standards

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values — ICARE (innovation, collaboration, accountability, respect and excellence) — translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Respiratory Care program:

### Acquire Information

- Acquire information from demonstrations and experiences in courses, such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies
- Recognize and assess patient changes in mood, activity, cognition, verbal and non-verbal communication

### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers
- Use and interpret information related to physiologic phenomena generated from diagnostic tools

### Motor

- Possess psychomotor skills necessary to provide or assist in holistic respiratory care and perform or assist with procedures and treatments
- Practice in a safe manner and appropriately provide respiratory care and assessment in emergencies and life-support procedures and perform universal precautions against contamination

### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors and all members of the health care team during practicum and other learning experiences
- Accurately elicit information, including a medical history and other information, to adequately and effectively evaluate a population's, client's or patient's condition

### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to the diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the respiratory care role
- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment or treatment strategy

### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

### Character

- Demonstrate concern for others
- Integrity, accountability interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and Respiratory Care Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs.

Given the clinical nature of our programs, time may be needed to implement the accommodations.

Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Accessibility Services to learn more about accommodations at Rush University:

Marie Lusk, MBA, MSW, LSW  
 Director, Office of Student Accessibility Services  
 Rush University  
 600 S. Paulina St., Suite 901  
 Chicago, IL 60612  
 (312) 942-5237  
 Marie\_Lusk@rush.edu

## RRT Advanced Standing (MS): Curriculum

### Credit Based on the RRT Credential

Individuals providing documentation that they hold the RRT credential may receive credit for the following theory courses:

Course		Credits
RCP-511	Introduction to Respiratory Care	3
RCP-515	Respiratory Care Pharmacology	2
RCP-520	Respiratory Care Equipment & Techniques	4
RCP-521	Patient Assessment	4
RCP-534	Clinical Practice I	3
RCP-569	Clinical Practice II	7
RCP-575	Clinical Practice III	7
RCP-577	Clinical Seminar	3
<b>Total: 33 Credit Hours</b>		

### Required Courses

RRT students must enroll in and complete the following required courses:

Course		Credits
RCP-501	Foundations of Professional Practice	3
RCP-563	Research Methods	3
RCP-565	Research Project	1
RCP-566	Education	3
RCP-567	Management	3
RCP-573	Research Project II	1
RCP-583	Research Project III	1
* RCP-585	Clinical Practice IV	8
RCP-589	Disease Management/Home Health	3
CHS-601	Introduction to Biostatistics	2
CHS-605	Introduction to Ethics in Healthcare	2
<b>Total: 30 Credit Hours</b>		

*\*With the program director's permission, RCP-585 may be taken twice for four credit hours each over two semesters instead of as a single, eight-hour course.*

## Elective Courses

The RRT student must select a minimum of nine semester hours from the following courses to take at Rush University. All other required elective courses will be assigned proficiency credit:

Course	Credits
RCP-570 Cardiopulmonary Diagnostics	2
RCP-530 Cardiac Diseases	2
RCP-531 Critical Respiratory Care	4
RCP-532 Pulmonary Function Testing	3
RCP-533 Pediatric & Neonatal Respiratory Care	4
RCP-512 Cardiopulmonary Anatomy & Physiology	5
RCP-522 Pulmonary Disease	3
RCP-523 Mechanical Ventilation	4
CHS-620 Health Care in America	2
<b>Total: 29 Credit Hours</b>	
Total credit that may be awarded based on the RRT credential	<b>53</b>
Credit hours that must be completed at Rush	<b>39</b>
Total respiratory care course hours required for the degree	<b>92</b>

## Sample Advanced-Standing Program Student Schedule:

Fall Term	Credits
RCP-501 Foundations of Professional Practice	3
RCP-563 Research Methods	3
RCP-565 Research Project	1
RCP-566 Education	3
RCP-567 Management	3
Spring Term	Credits
RCP-573 Research Project II	1
RCP-523 Mechanical Ventilation	4
CHS-601 Introduction to Biostatistics	2
RCP-585 Clinical Practice IV	8
Summer Term	Credits
CHS-605 Introduction to Ethics in Healthcare	2
RCP-583 Research Project III	1
RCP-532 Pulmonary Function Testing	3
CHS-620 Health Care in America	2

### Note:

Note regarding RCP 585, Clinical Practice IV: The purpose of this clinical practice is to allow students to acquire special clinical skills and/or expertise that is not normally achieved

in an associate's degree program or through work experience. The student may also use this course to refine or upgrade clinical skills that may have been used infrequently due to the nature of their work environment or experiences. A course proposal or prospectus for clinical practice will be designed by the student and submitted to the director of Clinical Education. The prospectus or proposal must be reviewed and approved by the program director or Committee on Progress and Promotion for Respiratory Care. The prospectus must include course goals and objectives, methodology to achieve these goals and objectives to include clinical or laboratory facilities to be utilized, time spent in a given clinical or laboratory area and proposed method of evaluation. The following are areas of concentration that may be included:

- Pulmonary function laboratory
- Cardiac and/or pulmonary stress testing
- Diagnostic sleep laboratory
- Fiberoptic bronchoscopy
- Physiologic monitoring to include hemodynamics
- Adult critical care
- Pediatric and/or neonatal respiratory care
- ECMO
- Mechanical circulatory assistance
- Respiratory home care
- Sub-acute/long-term care facilities
- Pulmonary and/or cardiac rehabilitation
- Invasive and/or non-invasive cardiology
- Hyperbaric medicine
- Applied research
- Respiratory care education
- Management
- Advanced generalist (to include two or more subspecialties)

Substitutions for the above courses to meet individual student needs may be made from other respiratory care curriculum course work if approved by the program director.

Students who desire additional course work related to supervision and management may request that specific courses taken at the graduate level in another Rush University department be substituted for specific required or elective courses.

## Summary of Minimum Requirements for the MS Degree for RRT Students Holding a Bachelor's Degree

Respiratory Care Required Courses	39
Credit Based on RRT	53
<b>TOTAL</b>	<b>92</b>

## Communication Disorders and Sciences

### Communication Disorders and Sciences

#### Philosophy

The underlying basis for the graduate degree programs in Audiology and Speech-Language Pathology is the practitioner-teacher model, whereby students learn from faculty who have taken on dual roles as academicians and practitioners. This approach to professional education helps bridge the gap that can exist between classroom teaching and clinical service delivery. Students learn in an environment where teaching, research, and patient care are integrated.

The faculty at Rush have established records in clinical service delivery and participate in the clinical process in addition to teaching and research. Students receive outstanding clinical education experiences with diverse patients who present a full range of communicative disorders. The Audiology and Speech-Language Pathology programs are accredited by the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association (ASHA).

The programs in Audiology and Speech-Language Pathology are based on the philosophy that professional education is optimized by drawing upon the patients, health care providers, and other academic medical center resources. The resources at Rush University enrich and enhance faculty and student research and scholarship, and they provide unique opportunities for interprofessional education and collaboration. The clinical skills of Rush students are fostered and developed through didactic courses, clinical observation, and instruction, and are supervised by practitioner-teachers. The department faculty is supplemented by the expertise of physicians, scientists, and other health care practitioners within Rush University Medical Center.

#### Mission Statement

The Department of Communication Disorders and Sciences at Rush University Medical Center integrates outstanding graduate education, superior patient care, excellence in research and scholarship, and service to diverse communities.

#### Vision Statement

The clinical and graduate education programs of the Department of Communication Disorders and Sciences will be recognized as among the best in the United States.

## Professional Credentialing

Rush programs in Communication Disorders and Sciences offer the academic and clinical education background necessary to begin the ASHA clinical fellowship year (speech-language pathology) and to meet requirements for certification in audiology and speech-language pathology. Upon graduation students are eligible to do the following:

- Obtain Illinois licensure.
- Meet requirements for professional certification in speech-language pathology or audiology.
- Meet the requirements for the Illinois Educator License as a non-teaching speech-language pathologist. This is under the School Services Personnel category. Eligibility for the Illinois Educator License may require adjustment to a student's didactic or clinical experiences.

## Doctor of Audiology Audiology

### Admission Process

Application for admission to the Doctor of Audiology program is through a central application system. Refer to the program's webpage for more information. The application deadline is Jan. 1 for matriculation the following fall.

### Admission Requirements

At the time of application, individuals should have completed or be in the process of completing the baccalaureate degree at an accredited institution. The baccalaureate degree must be completed before commencing work at Rush University. Students entering the program must have transcript credit for at least one college-level math or statistics course, at least one course in the behavioral/social sciences, at least one course in the biological sciences, and at least one course in the physical sciences. Although not required, the following course work is strongly recommended: advanced college-level math, research methods, psychology and physics. Applicants should check the program webpage for additional information about prerequisites.

Admission is granted for the fall semester of each year.

The application file includes a completed application with essay, application fee, three letters of recommendation from individuals acquainted with the applicant's academic background, official transcripts from all universities attended, and official scores from the Graduate Record Examination (GRE). Applicants whose native language is not English and who have not obtained a college degree from a U.S. institution must submit official scores from the Test of English as a Foreign Language (TOEFL).

The generally applied minimum standards for acceptance into the AuD program are a 3.0 undergraduate GPA overall (on a 4.0 scale) or a 3.5 GPA in major courses. GRE scores (verbal and quantitative) above the 50th percentile are recommended. The program's Admissions Committee reviews all applications and makes all admissions decisions.

### Technical Standards for the Audiology Program

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values — innovation, collaboration, accountability, respect and excellence (I CARE) — translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Audiology program:

#### Acquire Information

- Acquire information from demonstrations and experiences in courses such as lecture, group, and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description, and computer presentations
- Recognize and assess patient changes in mood, activity, cognition, and verbal and non-verbal communication

#### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers
- Use and interpret information related to physiologic phenomena generated from diagnostic tools

#### Motor

- Possess psychomotor skills necessary to provide or assist in holistic audiology care, and perform or assist with procedures and treatments
- Practice in a safe manner and appropriately provide audiology care and assessment in emergencies and life-support procedures, and perform universal precautions against contamination

### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors, and all members of the health care team during practicum and other learning experiences
- Accurately elicit information, including a medical history and other information, to adequately and effectively evaluate a population's, client's, or patient's condition

### Intellectual Ability

- Measure, calculate, reason, analyze, and synthesize data related to diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the audiology role
- Synthesize information, problem solve, and think critically to judge the most appropriate theory, assessment, or treatment strategy

### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

### Character

- Demonstrate concern for others
- Demonstrate integrity, accountability, interest and motivation
- Demonstrate intent and desire to follow the Rush University and Audiology and Speech-Language Pathology Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine that they require reasonable accommodation to fully engage in the program should contact the Office of Student Accessibility Services to confidentially discuss their accommodation needs.

Given the clinical nature of our programs, time may be needed to implement the accommodations.

Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Accessibility Services to learn more about accommodations at Rush University:

Marie Lusk, MBA, MSW, LSW  
Director, Office of Student Accessibility Services  
600 S. Paulina St., Suite 901  
Chicago, IL 60612  
(312) 942-5237  
Marie\_Lusk@rush.edu

## Communication Disorders and Sciences: Academic Policies

The Academic Resources and Policies section of this catalog contains Rush University academic policies.

### Academic Probation

Academic probation is assigned to a student who earns a single-term academic grade point average (GPA) between 2.5 and 2.99 (A = 4.0), and/or whose cumulative academic GPA falls between 2.5 and 2.99 at any time. The academic GPA is calculated for all non-clinical coursework. A remediation plan to address probation will be developed by the student's academic adviser and the student and will be documented in the student's program file. A student must earn a single-term academic GPA of 3.0 or greater at the end of the semester for which the student is on academic probation and a cumulative academic GPA of 3.0 or greater by the end of the first academic year to continue in the program. A student who incurs a semester academic GPA below 3.0 after being removed from academic probation will be dismissed from the program, even if the cumulative academic GPA is 3.0 or greater.

A student who earns a grade of D or less in a required course must repeat that course or an equivalent course that has been approved by the student's program and transferred from an outside institution. In a repeated course, the new grade will replace the earlier grade in the cumulative academic GPA. Failure to receive a grade of C or greater in a repeated course will result in dismissal from the program.

A student must receive a grade of C or greater in an approved transfer course in order for it to be accepted as an equivalent for the course for which the student received a grade of D or less. Credit for a transferred course is not included in the calculation of the cumulative academic GPA. The course for which the student earned the grade of D or

less will remain on the student's transcript and will be used to calculate the academic GPA. This may impact the student's minimum GPA requirement for graduation.

A student who earns a grade of D or less in two or more required courses, regardless of the grade earned in a repeated course and regardless of the cumulative academic GPA will be dismissed from the program.

A student who earns a single-term academic GPA of less than 2.5 at any point during his/her course of study will be dismissed from the program.

A student who fails to meet the stated criteria for the comprehensive examination will be dismissed from the program.

A cumulative academic GPA of 3.0 or greater is required for graduation.

### Clinical Probation

Clinical probation is assigned to a student who earns a grade of C or less in a clinical practicum, internship, or externship. Although the clinical contact hours may be used to meet the ASHA Council for Clinical Certification (CFCC) requirements, the student may be required to repeat the clinical education course before progressing further in the clinical sequence.

A remediation plan to address clinical probation will be determined by the student, the student's academic adviser, and the clinical education manager; this remediation plan will be documented. Failure to achieve a grade of B or higher in any subsequent clinical education course will result in dismissal from the program.

The faculty reserves the right to request the withdrawal of any student whose conduct or performance demonstrates lack of fitness for continuance in a health profession. Any such student not voluntarily withdrawing will be dismissed from the program.

### Clinical Progression

In the AuD program, a grade of B or higher is required to pass a clinical course. Students receiving a grade of C or less in any AuD clinical course prior to the final externship semester will be placed on clinical probation and required to repeat and pass the practicum before progressing further in the clinical sequence. Any earned clinical contact hours may be used to meet the ASHA Council for Clinical Certification requirements.

Students receiving a grade of C in their final externship semester will be placed on probation and required to

register for one credit of continuing enrollment in the following semester to complete remediation and achieve good standing before graduation. Students receiving a grade of D in their final externship semester will be placed on probation and required to repeat the course. Students receiving an F in the final externship semester will be dismissed from the program.

For students placed on clinical probation at any time during the AuD clinical sequence, a remediation plan to address clinical probation will be determined jointly by the student, the student's academic adviser, and the clinical education manager; this remediation plan will be documented. Failure to achieve a grade of B or higher in any subsequent clinical education course will result in dismissal from the program.

The faculty reserves the right to request the withdrawal of any student whose conduct or performance demonstrates lack of fitness for continuance in a health profession. Any such student not voluntarily withdrawing will be dismissed from the program.

### Interrupted Program

Students who wish or need to interrupt their program must fulfill the following requirements:

- Meet with their academic adviser and the program director to work out a plan of action before leaving the program
- Complete all degree requirements within eight years (doctoral program) of the beginning of the first term in which the full-time student is enrolled in the department
- Follow all appropriate leave of absence/withdrawal procedures and policies as defined by Rush University

### Academic Appeal and Grievance

See the CDS Student Manual for the policy on academic appeal and grievance, and for other policies. The department follows procedures outlined in the College of Health Sciences Student Academic Appeal and Grievance Procedures. Students who wish to file a complaint related to compliance with an accreditation standard may contact the Council on Academic Accreditation:

Chair, Council on Academic Accreditation in Audiology and Speech-Language Pathology  
American Speech-Language-Hearing Association  
2200 Research Blvd, Suite 310  
Rockville, MD 20850  
(800) 498-2071 or (301) 296-5700

### Clinical Education Experiences in Audiology

Clinical training occurs throughout the curriculum, including clinical methods course work, patient experiences, and alternative clinical experiences. Enrollment in each term of practicum, internship, or externship is contingent upon satisfactory completion (grade of B or better) of the previous term's clinical education course. Clinical experiences include direct and indirect patient care activities across the scope of practice with diverse populations from all age groups at both on- and off-campus facilities.

### Graduation Requirements

The requirements for the Doctor of Audiology degree include a cumulative academic GPA of 3.0 or greater and successful completion of the comprehensive examination. Audiology students also must complete an investigative project.

Requirements for the doctoral degree must be completed within eight years of the beginning of the first term in which a full-time student is enrolled. Students must complete the number of term hours required by the program. Refer to the Department of Communication Disorders and Sciences Student Manual for additional discussion about graduation and degree progression.

### Educational Activities

The Department of Communication Disorders and Sciences provides professional education and training in speech-language pathology and audiology. Its programs are notable in that the education of speech-language pathologists and audiologists is enhanced by the opportunities, resources, and facilities provided by a world-class academic medical center.

In addition to didactic and clinical activities, students and faculty participate in journal clubs, rounds and student-faculty development sessions available within the department, as well as throughout the Rush University Medical Center. Students and faculty benefit from presentations by distinguished guests who share research and clinical expertise in audiology or speech-language pathology. Special seminars and presentations on various health care topics are available to students throughout the Medical Center.

Faculty members are involved in the education of residents and students in Rush Medical College. Faculty members participate in grand rounds for various medical specialties and provide in-service programs on campus for staff at Rush University Medical Center and at the Johnston R. Bowman Health Center.

### Research Activities

Faculty members are involved in interprofessional and translational research in the areas of audiology, hearing science, and speech-language pathology. Projects include cochlear implant processing, working memory and communication, adult speech disorders, dysphagia, neurogenic communication disorders, language and literacy in children, quality of life and hearing aids, aging and hearing loss, language disorders and second language learning, and many other topics related to human communication and swallowing.

Faculty members publish in professional journals and present at international, national, and state meetings. Summaries of faculty research and professional activities are available on the department's webpage. Students are encouraged to participate in the research process, including development of hypotheses, data collection, and presentation or publication of results.

### Investigative Project

Students enrolled in the Doctor of Audiology program complete the investigative project during the third year of the curriculum. The objectives of the investigative project are to synthesize a body of literature related to a specific topic in

audiology, cultivate professional writing skills, acquire didactic skills for dissemination of professional information, and develop organizational and verbal tools needed for professional presentations.

Ordinarily, the investigative project includes three options: evidence-based practice systematic review, experimental project, or professional/clinical project. A complete description of the investigative project is found in the Student Manual for the Department of Communication Disorders and Sciences. Students are expected to submit the completed project for presentation at a state or national professional meeting and/or for publication.

### Service Activities

The faculty provides a full range of diagnostic and therapeutic services to a large clinical population that includes both inpatients and outpatients. In addition, faculty and students participate in community and professional activities on the local, national, and international level. Students and faculty participate in health fairs, screenings, and other service activities throughout the year. Faculty provide leadership, editorial, and committee service to state and national scientific and professional associations.

## Audiology (AUD): Curriculum

### Track FS17

First Year		Credit Hours
<b>Fall Term</b>		
AUD-602	Anatomy and Physiology of the Auditory System	3
AUD-606	Introduction to Neuroscience	3
AUD-613	Acoustics and Psychoacoustics	2
AUD-621	Clinical Methods in Audiology	2
AUD-622	Clinical Observation in Audiology	1
AUD-623	Audiologic Assessment	3
<b>Spring Term</b>		
AUD-607	Pathophysiology of the Auditory System	3
AUD-614	Acoustic Phonetics and Speech Perception	2
AUD-640	Basic Amplification	2
AUD-650	Vestibular Assessment and Rehabilitation	3
AUD-690	Clinical Practicum I	1
CHS-610	Research Methods in Health Sciences	2
<b>Summer Term</b>		
AUD-611	Embryology and Genetics of the Auditory System	1
AUD-630	Electrophysiologic Assessment I	3
AUD-660	Pediatric Audiology	2
AUD-691	Clinical Practicum II	1
CDS-576	Issues in Counseling	2

Second Year		Credit Hours
<b>Fall Term</b>		
AUD-592	Grand Rounds	1
AUD-615	Pharmacology	2
AUD-637	Electrophysiologic Assessment II	2
AUD-641	Adult Amplification	3
AUD-645	Adult and Geriatric Rehabilitative Audiology	3
AUD-692	Audiology Practicum III	1
<b>Spring Term</b>		
AUD-592	Grand Rounds	1
AUD-663	Pediatric Amplification and Habilitation	2
AUD-664	Educational Audiology	2
AUD-665	Auditory Implants	2
AUD-672	Seminar in Current Professional Issues	1
AUD-800	Internship I	3
<b>Summer Term</b>		
AUD-651	Vestibular Seminar	1
AUD-667	Auditory Processing	2
AUD-670	Seminar in Hearing Conservation	1
AUD-671	Seminar in Supervision & Mentorship	1
AUD-801	Internship II	3
CHS-605	Introduction to Ethics in Health Care	2
Third Year		Credit Hours
<b>Fall Term</b>		
AUD-673	Practice Management Across Settings	2
AUD-802	Internship III	3
AUD-642	Amplification Seminar	1
AUD-682	Investigative Project Planning Seminar	2
CHS-601	Introduction to Biostatistics	2
<b>Spring Term</b>		
AUD-683	Investigative Project	3
AUD-803	Internship IV	5
<b>Summer Term</b>		
AUD-850	Externship I	7
Fourth Year		Credit Hours
<b>Fall Term</b>		
AUD-851	Externship II	7
<b>Spring Term</b>		
AUD-852	Externship III	7
<b>Program Total:</b>		<b>108</b>

## Master of Science Speech-Language Pathology (MS)

### Admission Process

Application for admission to the Master of Science in Speech-Language Pathology program is through a central application system. Refer to the program's webpages for more information. The application deadline is Jan. 1 for matriculation the following fall.

### Admission Requirements

At the time of application, individuals should have completed or be in the process of completing a baccalaureate degree at an accredited institution. The baccalaureate degree must be completed before commencing work at Rush University. Students entering the program must have successfully completed coursework in introduction to audiology, phonetics, normal speech and language development, speech and hearing science, speech and hearing anatomy and physiology, and statistics. In addition, entering students must have transcript credit for at least one course in each of the following areas: biological sciences, physical sciences (physics and/or chemistry), and social/behavioral sciences. Applicants should check the program webpage for additional information about prerequisites. High school Advanced Placement (AP) credits may not meet this requirement. All courses must be taken for a grade at the baccalaureate level.

Admission is granted for the fall term of each year. The application file includes a completed application with essay, application fee, three letters of recommendation from individuals acquainted with the applicant's academic background, official transcripts from all universities attended, and official scores from the GRE graduate school entry exam. Applicants whose native language is not English and who have not obtained a college degree from a U.S. institution must submit official scores from the Test of English as a Foreign Language, or TOEFL.

The generally applied minimum standards for acceptance into the program are a 3.0 undergraduate GPA overall (on a 4.0 scale) and a 3.5 in major courses in speech-language pathology or a 3.5 in the prerequisite course content as listed in the application. Scores on the GRE (verbal and quantitative) should be at the 50th percentile or higher. The SLP Program Admissions Committee reviews all applications and makes all admissions decisions.

## Technical Standards for the Speech-Language Pathology Program

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values — I CARE (innovation, collaboration, accountability, respect and excellence) — translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Speech-Language Pathology program:

### Acquire Information

- Acquire information from demonstrations and experiences in courses such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description and computer presentations
- Recognize and assess patient changes in mood, activity, cognition, and verbal and non-verbal communication

### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers
- Use and interpret information related to physiologic phenomena generated from diagnostic tools

### Motor

- Possess psychomotor skills necessary to provide or assist in holistic speech-language pathology care, and perform or assist with procedures and treatments
- Practice in a safe manner and appropriately provide speech-language pathology care and assessment in emergencies and life-support procedures, and perform universal precautions against contamination

### Communication

- Communicate effectively and sensitively with patients and families



- Communicate effectively with faculty, preceptors and all members of the health care team during practicum and other learning experiences
- Accurately elicit information, including a medical history and other information, to adequately and effectively evaluate a population's, client's or patient's condition

### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the speech-language pathology role
- Synthesize information, problem solve, and think critically to judge the most appropriate theory, assessment or treatment strategy

### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

### Character

- Demonstrate concern for others
- Demonstrate integrity, accountability, interest and motivation
- Demonstrate intent and desire to follow the Rush University and Speech-Language Pathology Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program, should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs.

Given the clinical nature of our programs, time may be needed to implement the accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Accessibility Services to learn more about accommodations at Rush University:

Marie Lusk, MBA, MSW, LSW  
 Director, Office of Student Accessibility Services  
 600 S. Paulina St., Suite 901  
 Chicago, IL 60612  
 (312) 942-5237  
 Marie\_Lusk@rush.edu

## Communication Disorders and Sciences: Academic Policies

The Academic Resources and Policies section of this catalog contains Rush University academic policies.

### Academic Probation

Academic probation is assigned to a student who earns a single-term academic grade point average (GPA) between 2.5 and 2.99 (A = 4.0), and/or whose cumulative academic GPA falls between 2.5 and 2.99 at any time. The academic GPA is calculated for all non-clinical coursework. A remediation plan to address probation will be developed by the student's academic adviser and the student and will be documented in the student's program file. A student must earn a single-term academic GPA of 3.0 or greater at the end of the semester for which the student is on academic probation and a cumulative academic GPA of 3.0 or greater by the end of the first academic year to continue in the program. A student who incurs a semester academic GPA below 3.0 after being removed from academic probation will be dismissed from the program, even if the cumulative academic GPA is 3.0 or greater.

A student who earns a grade of D or less in a required course must repeat that course or an equivalent course that has been approved by the student's program and transferred from an outside institution. In a repeated course, the new grade will replace the earlier grade in the cumulative academic GPA. Failure to receive a grade of C or greater in a repeated course will result in dismissal from the program.

A student must receive a grade of C or greater in an approved transfer course in order for it to be accepted as an equivalent for the course for which the student received a grade of D or less. Credit for a transferred course is not included in the calculation of the cumulative academic GPA. The course for which the student earned the grade of D or less will remain on the student's transcript and will be used to calculate the academic GPA. This may impact the student's minimum GPA requirement for graduation.

A student who earns a grade of D or less in two or more required courses, regardless of the grade earned in a repeated course and regardless of the cumulative academic GPA will be dismissed from the program.

A student who earns a single-term academic GPA of less than 2.5 at any point during his/her course of study will be dismissed from the program.

A student who fails to meet the stated criteria for the comprehensive examination will be dismissed from the program.

A cumulative academic GPA of 3.0 or greater is required for graduation.

### Clinical Probation

Clinical probation is assigned to a student who earns a grade of C or less in a clinical practicum, internship, or externship. Although the clinical contact hours may be used to meet the ASHA Council for Clinical Certification (CFCC) requirements, the student may be required to repeat the clinical education course before progressing further in the clinical sequence.

A remediation plan to address clinical probation will be determined by the student, the student's academic adviser and the clinical education manager, and will be documented. Failure to achieve a grade of B or higher in any subsequent clinical education course will result in dismissal from the program.

The faculty reserves the right to request the withdrawal of any student whose conduct or performance demonstrates lack of fitness for continuance in a health profession. Any such student not voluntarily withdrawing will be dismissed from the program.

### Clinical Progression

In the Speech-Language Pathology (SLP) program, A grade of B or higher is required to pass an SLP clinical practicum. Students receiving a grade of C or less in any SLP practicum prior to the final practicum will be placed on clinical probation and required to repeat and pass the practicum before progressing further in the clinical sequence. Any earned clinical contact hours may be used to meet the ASHA Council for Clinical Certification (CFCC) requirements.

Students receiving a grade of C in their final practicum will be placed on probation and required to register for one credit of continuing enrollment in the following semester to complete remediation and achieve good standing before graduation. Students receiving a grade of D in their final practicum will be placed on probation and required to repeat

the course. Students receiving an F in the final practicum will be dismissed from the program.

For students placed on clinical probation at any time during the SLP practicum sequence, a remediation plan to address clinical probation will be determined jointly by the student, the student's academic adviser, and the clinical education manager; this remediation plan will be documented. Failure to achieve a grade of B or higher in any subsequent clinical education course will result in dismissal from the program.

The faculty reserves the right to request the withdrawal of any student whose conduct or performance demonstrates lack of fitness for continuance in a health profession. Any such student not voluntarily withdrawing will be dismissed from the program.

### Interrupted Program

Students who wish or need to interrupt their program must fulfill the following requirements:

- Meet with their academic adviser, the clinical education manager, and the program director to work out a plan of action before leaving the program
- Complete all degree requirements within four years (master's program) of the beginning of the first term in which the full-time student is enrolled in the department
- Follow all appropriate leave of absence/withdrawal procedures and policies as defined by Rush University

### Academic Appeal and Grievance

See the CDS Student Manual for the policy on academic appeal and grievance and for other policies. The department follows procedures outlined in the College of Health Sciences Student Academic Appeal and Grievance Procedures. Students who wish to file a complaint related to compliance with an accreditation standard may contact the Council on Academic Accreditation:

Chair, Council on Academic Accreditation in Audiology and Speech-Language Pathology  
 American Speech-Language-Hearing Association  
 2200 Research Blvd., Suite 310  
 Rockville, MD 20850  
 (800) 498-2071 or (301) 296-5700

### Clinical Education Experiences in Speech-Language Pathology

Clinical training occurs throughout the curriculum, including patient experiences and clinical methods coursework.

Enrollment in each term of practicum, internship, or externship is contingent upon satisfactory completion (grade B or better) of the previous term's clinical education course. Clinical experiences include direct and indirect patient care activities across the scope of practice with diverse populations from all age groups at both on- and off-campus facilities.

### Graduation Requirements

The requirements for the Master of Science degree in Speech-Language Pathology degree include a cumulative academic GPA of 3.0 or greater and successful completion of the comprehensive examination. Thesis students must successfully complete the thesis process in lieu of passing a comprehensive examination.

All master's degree requirements must be completed within 48 months from the beginning of the first term in which a full-time student is enrolled in the program. Students must complete the number of term hours required by the program. Refer to the Department of Communication Disorders and Sciences Student Manual for additional discussion about graduation and degree progression.

### Educational Activities

The Department of Communication Disorders and Sciences provides professional education and training in speech-language pathology and audiology. Its programs are notable in that the education of speech-language pathologists and audiologists are enhanced by the opportunities, resources and facilities provided by a world-class academic medical center.

In addition to didactic and clinical activities, students and faculty participate in journal clubs, rounds and student-faculty development sessions available within the department as well as throughout the Rush University Medical Center. Students and faculty benefit from presentations by distinguished guests who share research and clinical expertise in audiology or speech-language pathology. Special seminars and presentations on various health care topics are available to students throughout Rush University Medical Center.

Faculty members are involved in the education of residents and students in Rush Medical College. Faculty members participate in grand rounds for various medical specialties and provide in-service programs on campus for staff at Rush University Medical Center and the Johnston R. Bowman Health Center.

### Research Activities

Faculty members are involved in interprofessional and translational research in the areas of audiology, hearing science and speech-language pathology. Projects include cochlear implant processing, working memory and communication, adult speech disorders, dysphagia, neurogenic communication disorders, language and literacy in children, quality of life and hearing aids, aging and hearing loss, language disorders and second language learning, and many other topics related to human communication and swallowing.

Faculty members publish in professional journals and present at international, national and state meetings. Summaries of faculty research and professional activities are available online on the department's webpage. Students are encouraged to participate in the research process, including the development of hypotheses, data collection, and presentation or publication of results.

### Thesis

The faculty's commitment to research and the belief that an appreciation of scientific endeavors is critical to the clinical process provide the basis for an optional thesis. Many students in graduate school choose to do a thesis, thereby gaining valuable research experience. A thesis project is data based and may be an original or replication study.

Often, students present the results of their research at a professional meeting or publish results in a professional journal. The thesis project is optional in the speech-language pathology curriculum, and students are encouraged to consider choosing this option. The complete thesis policy is found in the Student Manual for the Department of Communication Disorders and Sciences.

### Service Activities

The faculty provides a full range of diagnostic and therapeutic services to a large clinical population that includes inpatients and outpatients. In addition, faculty and students participate in community and professional activities on the local, national and international level. Students and faculty participate in health fairs, screenings and other service activities throughout the year. Faculty provides leadership, editorial and committee service to state and national scientific and professional associations.

## Speech-Language Pathology (MS) Non-Thesis Track: Curriculum

First Year		Credit Hours
<b>Fall Term</b>		
SLP-506L	Clinical Methods Lab	1
SLP-523L	Instrumentation Lab	1
SLP-537L	Anatomy Lab	1
SLP-521	Language Disorders in Children I: Birth Through Age Five	3
CHS-610	Research Methods in Health Sciences	2
SLP-564	Aphasia	3
AUD-606	Introduction to Neuroscience	3
SLP-511P	Speech-Language Pathology Practicum I	1
IPE-502	Interprofessional Patient Centered Teams	Non Credit
<b>Spring Term</b>		
SLP-522	Language Disorders in Children II: Age Six Through Adolescence	3
SLP-558	Dysphagia	3
SLP-567	Dysarthria	3
SLP-568	Cognition of Acquired Language and Communication Disorders	3
SLP-582	Topics in Research Methods In Communication Disorders	1
SLP-512P	Speech-Language Pathology Practicum II	2
IPE-502	Interprofessional Patient Centered Teams	Non Credit
<b>Summer Term</b>		
SLP-503L	Auditory Skills Lab for the Speech-Language Pathologist	1
SLP-526	Speech Sound Disorders	2
SLP-540	Head and Neck Cancer Management	2
SLP-542L	Tracheostomy & Ventilator Lab Ventilator Dependent Patients	1
SLP-524	Fluency, Dysfluency, and Stuttering	2
CDS-576	Issues in Counseling	2
SLP-513P	Speech-Language Pathology Practicum III	3-4
Second Year		Credit Hours
<b>Fall Term</b>		
SLP-510	Prof Issues-Speech Language Pathology	2
SLP-562	Craniofacial Anomalies and Genetic Syndromes	2
SLP-535	Clinical Issues in Cultural and Language Diversity	2
SLP-563	Voice Disorders	3
SLP-592	Applied Topics in Communication Disorders	1
SLP-589P	Speech-Language Pathology Practicum IV	5
<b>Spring Term</b>		
SLP-590P	Speech-Language Pathology Practicum V	8-9
<b>Program Total:</b>		<b>67</b>

## Speech-Language Pathology (MS) Thesis Track: Curriculum

Thesis students may deselect up to 8 credit hours of select coursework (see courses listed with two asterisks - "\*\*"). Deselected courses may be audited; audited courses will appear on the student's transcript without credit hours assigned. The selection of the courses to remove from a student's program of study is done with the approval of the student's adviser, considering the individual's undergraduate background and graduate needs and experiences. Courses not audited are required to be taken for credit.

Clinic practicum hours may be altered. Students selecting the thesis option should schedule an appointment with the clinical education manager at the time they elect

to complete a thesis to begin this planning. The Summer Practicum (SLP Practicum 3) may be increased to 4 credit hours. The Spring Year 2 Practicum (SLP Practicum 5) may be reduced to 8 credit hours. These practicum experiences will be scheduled either on campus or at select external sites to facilitate completion of the thesis. Students may also seek additional practicum opportunities earlier in their academic programs, to accelerate the achievement of the requisite number of contact hours. Students who may potentially alter their practicum hours must be in frequent contact with the clinical education manager to monitor that the requisite contact hours needed for graduation are being attained. Students who do not obtain the needed contact hours will register for additional credit during the following summer term so that this graduation requirement will be met.

## Speech-Language Pathology (MS) Thesis Track: Curriculum

First Year		Credit Hours
<b>Fall Term</b>		
SLP-506L	Clinical Methods Lab	1
SLP-523L	Instrumentation Lab	1
SLP-537L	Anatomy Lab	1
SLP-521	Language Disorders in Children I: Birth Through Age Five	3
CHS-610	Research Methods in Health Sciences	2
SLP-564	Aphasia	3
AUD-606	Introduction to Neuroscience	3
SLP-511P	Speech-Language Pathology Practicum I	1
<b>Spring Term</b>		
SLP-522	Language Disorders in Children II: Age Six Through Adolescence	3
SLP-558	Dysphagia	3
SLP-567	Dysarthria	3
SLP-568	Cognition of Acquired Language and Communication Disorders	3
SLP-582	Topics in Research Methods In Communication Disorders	1
SLP-512P	Speech-Language Pathology Practicum II	2
SLP-900	Independent Study	2
<b>Summer Term</b>		
SLP-503L**	Auditory Skills Lab for the Speech-Language Pathologist	1
SLP-526	Speech Sound Disorders	2
SLP-540**	Head and Neck Cancer Management	2
SLP-542L**	Tracheostomy & Ventilator Lab Ventilator Dependent Patients	1
SLP-524**	Fluency, Dysfluency, and Stuttering	2
CDS-576**	Issues in Counseling	2
SLP-513P	Speech-Language Pathology Practicum III	3-4
SLP-598	Thesis	2
Second Year		Credit Hours
<b>Fall Term</b>		
SLP-510**	Prof Issues-Spch Language Path	2
SLP-562**	Craniofacial Anomalies and Genetic Syndromes	2
SLP-535	Clinical Issues in Cultural and Language Diversity	2
SLP-563	Voice Disorders	3
SLP-592	Applied Topics in Communication Disorders	1
SLP-589P	Speech-Language Pathology Practicum IV	5
SLP-598	Thesis	2
<b>Spring Term</b>		
SLP-590P	Speech-Language Pathology Practicum V	8-9
SLP-598	Thesis	2
<b>Program Total:</b>		<b>67</b>

\*\* Indicates course may be audited.

Students in the thesis track will begin their research with Independent Study in Spring 1 (two credits) and continue with Thesis Research in Summer 1, Fall 2, and Spring 2 (two credits each). A total of eight credit hours of independent study and thesis research will be accrued. Thesis-track students may audit a maximum of four credit hours per term in Summer 1 and Fall 2 to offset the credit hours attained through their thesis research. Although up to eight credit hours of coursework may be audited, any eligible course not audited must be taken for credit to satisfy the program's overall degree requirements. Due to thesis-track students' ability to audit up to eight credit hours, the number of credit hours required for graduation is equal for thesis and non-thesis students.

### **ASHA Requirements for the Certificate of Clinical Competence**

The academic coursework and clinical education hours required by ASHA for the Certificate of Clinical Competence is described on the ASHA's website ([www.asha.org](http://www.asha.org)). Students are responsible for reviewing this information and their undergraduate and graduate coursework to assure that the requirements will be met. If a deficiency exists, it is best to identify it early so that appropriate plans can be made. Students should review their coursework with their academic advisers during the first term of enrollment.

## **Clinical Nutrition**

### **Master of Science**

### **Clinical Nutrition (MS)**

#### **Academic Programs**

##### **Master of Science**

The MS degree program is for those who hold a baccalaureate degree and wish to expand their understanding of human nutrition through critical evaluation, integration and application of nutrition research. The student has the option of selecting a thesis or Master's research project track. Those in the thesis track are required to take 6 credits of thesis research and will complete their own research project. Those in the Master's research project track will take 4 credits toward their research experience.

### **Clinical Nutrition: Admission Requirements**

All who apply to the College of Health Sciences' MS Clinical Nutrition program must have a baccalaureate degree.

Obtaining the MS degree in the College of Health Sciences' Clinical Nutrition program without an accredited, supervised practice will not make the student eligible to sit for the registration exam to become a Registered Dietitian Nutritionist, or RDN.

Prerequisite courses from an accredited U.S. university that are required for admission to the MS degree include the following:

- At least one course in biochemistry\*
- At least one course in physiology
- At least one course in nutrition
- At least one course in statistics

*\*Students should note that two semesters of general chemistry and one semester of organic chemistry are typically the prerequisites for biochemistry. The prerequisite for physiology is an introductory biology course.*

Application requirements, required application fees and the application process are specified on the Department of Clinical Nutrition webpage. If you have questions, contact Sarah Peterson, PhD, RD, LDN, acting program director at [Sarah\\_J\\_Peterson@rush.edu](mailto:Sarah_J_Peterson@rush.edu) or call (312) 942-7845.

Acceptance procedures for the MS program include a review of application materials by the Rush University College of Health Sciences Admissions Office for completeness of application and a review by the Clinical Nutrition Admissions Committee for program acceptance. Students may be admitted in any of the three terms.

Students accepted into the MS degree program will receive a letter of acceptance from the Rush University College of Health Sciences Admissions Office. A program acceptance confirmation fee of \$250 is required at this time. This fee is nonrefundable and will be applied to tuition for the first term.

#### **Required Testing for all Applicants**

Applicants for the MS program in Clinical Nutrition will need to submit results of the following:

- GRE graduate school entry exam.
- International applicants: Graduates who obtained their education outside the United States and its territories must have their academic degree(s) validated as equivalent to the baccalaureate or master's degree conferred by a regionally accredited college or university in the United States. These applicants also must submit results of the TOEFL examination (see College of Health Sciences TOEFL requirements).

### **Clinical Nutrition: Graduation Requirements**

Once admitted into the MS in Clinical Nutrition program, students embark on a journey that entails the accumulation of 36 credit hours for graduation. Students must perform the following in order to graduate and have the degree conferred:

- Maintain a cumulative GPA of 3.0 or greater
- Successfully complete all didactic coursework
- Successfully complete all requirements of the thesis/non-thesis research experience
- Pass the Rush University Interprofessional course
- Complete a minimum of 16 contact hours of approved professional or community service

Students must complete all program requirements within five years from matriculation. Any student who expects to go beyond the timeframe must request an exception to the policy in writing to the Clinical Nutrition Academic Progress and Promotions committee.

### **Clinical Nutrition: Research Activities**

There are two tracks in the MS in Clinical Nutrition program: thesis and Master's research project. Students have the option of selecting the thesis or Master's research project track of the degree, but all students will complete some form of research experience. Faculty members of the Department of Clinical Nutrition are involved in applied nutrition research. Faculty and students present at professional meetings and publish in peer reviewed journals. A list of faculty and student research presentations and publications can be found on the Clinical Nutrition webpage.

### **Clinical Nutrition: Service Activities**

Students are required to complete 16 hours of community or professional service during the program. Students meet this requirement in a variety of ways, including assisting at health fairs, volunteering at a local food pantry and helping at local clinics.

### **Clinical Nutrition: Academic Policies**

The MS program is offered on a part-time or full-time basis. A full-time student can complete the program in four terms. All students must complete the program within five years of matriculation. Rush University requires continuous enrollment through to completion of degree (see Rush University policies for further information).

Students may be allowed to transfer up to 12 semester hours of applicable graduate credit from another accredited university. Graduate courses must be completed with a B or better and approved by the student's supervisory committee to be awarded transfer credit.

If a student is not finished with the MS degree in five years, a request for an extension must be made to the Clinical Nutrition Academic Progress and Promotions Committee. If an extension is granted, conditions of the extension may include additional coursework to assure relevancy and currency of knowledge and competence at the master's level.

#### **Academic Progression**

Students in the MS program are required to earn grades of C or better in all courses. Failure to earn required grades may result in dismissal from the MS program and will result in a performance review by the Clinical Nutrition Academic Progress and Promotions Committee. The faculty reserves the right to request the withdrawal of any student whose conduct or performance demonstrates lack of fitness for continuance in the graduate program.

Automatic probation for any student results when a student's cumulative GPA falls below 3.0 or when a student receives a grade of D or F in any course. The Clinical Nutrition Academic Progress and Promotions Committee notifies any student placed on probation, states the reason(s) for probation and indicates the conditions that must be satisfied for removal of probation.

A student who earns a grade of D or F in a course must repeat the course and earn at least a C. A student who earns a grade of D or F in more than one required course will be dismissed. Full-time students on probation must earn a cumulative GPA of 3.0 or greater by the end of the next two consecutive terms. Part-time students on probation must earn a cumulative GPA of 3.0 or greater after completing the next three courses (approximately 6 term hours). Improvement in the GPA must be shown each term of probation.

## Clinical Nutrition: Technical Standards

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values Blvd I CARE (innovation, collaboration, accountability, respect and excellence) Blvd translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Clinical Nutrition program:

### Acquire Information

- Acquire information from demonstrations and experiences in courses, such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies
- Recognize and assess patient changes in mood, activity, cognition, verbal and non-verbal communication

### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers
- Use and interpret information related to physiologic phenomena generated from diagnostic tools

### Motor

- Possess psychomotor skills necessary to provide or assist in holistic clinical nutrition care and perform or assist with procedures and treatments
- Practice in a safe manner and appropriately provide clinical nutrition care and assessment in emergencies and life support procedures, and perform universal precautions against contamination

### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors and all members of the health care team during practicum and other learning experiences

- Accurately elicit information, including a medical history and other information to adequately and effectively evaluate a population's, client's or patient's condition

### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to the diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the clinical nutrition role
- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment or treatment strategy

### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

### Character

- Demonstrate concern for others
- Integrity, accountability, interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and Clinical Nutrition Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program, should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs.

Given the clinical nature of our programs, time may be needed to implement the accommodations.

Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Accessibility Services to learn more about accommodations at Rush University:

Marie Lusk, MBA, MSW, LSW  
 Director, Office of Student Accessibility Services  
 Rush University  
 600 S. Paulina St., Suite 901  
 Chicago, IL 60612  
 (312) 942-5237  
 Marie\_Lusk@rush.edu

## Clinical Nutrition (MS) Master's Research Project Track: Curriculum

First Year		Credit Hours
<b>Fall Term</b>		
CHS-610	Research Methods in the Health Sciences	2
NTR-621	Regulation of Macronutrients & Energy Metabolism in Human Nutrition	3
NTR-682	Research Methods Application and Special Topics in Clinical Nutrition	1
IPE-502	Interprofessional Patient Centered Teams	Non Credit
Electives ( <i>see below</i> )		
<b>Spring Term</b>		
CHS-601	Introduction to Biostatistics	2
NTR-611	Advanced Nutrition Care I	3
NTR-696	Master's Research Project	1
IPE-502	Interprofessional Patient Centered Teams	Non Credit
<b>Summer Term</b>		
NTR-691	Nutrition Epidemiology	3
NTR-612	Advanced Nutrition Care II	3
NTR-695	Journal Club in Clinical Nutrition	1
NTR-696	Master's Research Project	1
Second Year		Credit Hours
<b>Fall Term</b>		
NTR-615	Community Nutrition: A Policy Perspective	3
NTR-641	Leadership and Management in Dietetics	3
NTR-692	Seminar in Clinical Nutrition	1
NTR-696	Master's Research Project	1
<b>Spring Term</b>		
NTR-696	Master's Research Project	1
<b>Electives</b>		
CHS-605	Introduction to Ethics in Healthcare	2
CHS-620	Health Care in America	2
NTR-604	Core Concepts of Health and Wellness	2
NTR-605	Sports Nutrition	2
NTR-606	Critical Analysis Multimedia	2
NTR-622	Micronutrient, Phytochemicals and Dietary Supplements in Nutrition	2
NTR-623	Maternal and Infant Nutrition	2
NTR-613	Advanced Nutrition Care III	2
NTR-900	Independent Study	1-3
<b>Program Total</b>		<b>36</b>

## Clinical Nutrition (MS) Thesis Track: Curriculum

Several programs in the College of Health Sciences either require or have an option for a thesis project. Completing a thesis is a significant academic accomplishment and acknowledges an independent scientific investigation has been conducted by the student that will add to the knowledge to the field.

All students are required to have their theses registered with the ProQuest information and learning company. This process includes publication of the thesis abstract, microfilming of the thesis and copyrighting (approximately \$150). The director of the Library of Rush University Medical Center coordinates the process.

First Year		Credit Hours
<b>Fall Term</b>		
CHS-610	Research Methods in the Health Sciences	2
NTR-621	Regulation of Macronutrients & Energy Metabolism in Human Nutrition	3
NTR-682	Research Methods Application and Special Topics in Clinical Nutrition	1
IPE-502	Interprofessional Patient Centered Teams	Non Credit
Electives ( <i>see below</i> )		
<b>Spring Term</b>		
CHS-601	Introduction to Biostatistics	2
NTR-611	Advanced Nutrition Care I	3
NTR-698	Thesis	1-6
IPE-502	Interprofessional Patient Centered Teams	Non Credit
Electives ( <i>see below</i> )		
<b>Summer Term</b>		
NTR-691	Nutrition Epidemiology	3
NTR-612	Advanced Nutrition Care II	3
NTR-695	Journal Club in Clinical Nutrition	1
NTR-698	Thesis	1-6
Electives ( <i>see below</i> )		
Second Year		Credit Hours
<b>Fall Term</b>		
NSG-578	Interprofessional Cultural Competency Via Community Based	3
NTR-641	Leadership & Management in Dietetics	3
NTR-692	Seminar in Clinical Nutrition	1
NTR-698	Thesis	1-6
Electives ( <i>see below</i> )		
<b>Spring Term</b>		
NTR-698	Thesis	1-6
Electives ( <i>see below</i> )		
<b>Electives</b>		
CHS-605	Introduction to Ethics in Healthcare	2
CHS-620	Health Care in America	2
NTR-622	Micronutrient, Phytochemicals and Dietary Supplements in Nutrition	2
NTR-623	Maternal and Infant Nutrition	2
NTR-613	Advanced Nutrition Care III	2
NTR-604	Core Concepts of Health and Wellness	2
NTR-605	Sports Nutrition	2
NTR-606	Critical Analysis Multimedia	2
NTR-900	Independent Study	1-3
<b>Program Total</b>		<b>36</b>

## Clinical Nutrition/Dietetic Internship (MS)

### Combined Master's Degree and Dietetic Internship

The combined MS/Dietetic Internship program is a 20-month program that integrates didactic and supervised experience. Students have the option of selecting a thesis or Master's research project track. Upon completion of the program, the student earns an MS degree with a major in clinical nutrition, completes an accredited dietetic internship and is eligible to take the Registration Examination for Dietitians.

The dietetic internship is accredited by the Accreditation Council for Education in Nutrition and Dietetics, the credentialing agency of the Academy of Nutrition and Dietetics:

Accreditation Council for Education in Nutrition and Dietetics  
Academy of Nutrition and Dietetics  
120 S. Riverside Plaza, Suite 2190  
Chicago, IL 60606  
(800) 877-1600, ext. 5400  
[www.eatright.org/acend](http://www.eatright.org/acend)

### Clinical Nutrition: Admission Requirements

All who apply to the combined MS/Dietetic Internship program must have a baccalaureate degree and a verification statement that represents completion of requirements of an accredited didactic program in dietetics listed by the Accreditation Council for Education in Nutrition and Dietetics at [www.eatright.org/acend](http://www.eatright.org/acend).

Application requirements, fees and the application process are specified on the Department of Clinical Nutrition webpage at [www.rushu.rush.edu/cndi](http://www.rushu.rush.edu/cndi).

Send questions to Acting Dietetic Internship Director, Sally Lipson, MS, RDN at [Sally\\_Lipson@rush.edu](mailto:Sally_Lipson@rush.edu) or 312-942-2060.

Students verbally accept the appointment and the Rush Dietetic Internship director will email an acceptance letter form that students are required to complete and return.

Once students are accepted into the Dietetic Internship, they are then required to complete the application for Rush University A program acceptance confirmation fee of \$250 is required at this time. The fee is nonrefundable and will be applied to tuition for the first term.

There are two tracks in the combined MS/Dietetic Internship program. There is a thesis and master's research project

track. The students will decide during the first term which track they will pursue. Schedules will vary based on the track selected.

### Drug Testing

Rush University Medical Center requires that all prospective employees, including dietetic interns, undergo drug testing as a contingency for employment or enrollment.

### Criminal Background Check

All dietetic interns will undergo a criminal background check to comply with legislation regarding employment in the health care field to assure patient safety.

### Required Testing for all Applicants

Those applying to the MS/Dietetic Internship program need to submit results of the following:

- GRE graduate school entry exam.
- International applicants: Graduates who obtained their education outside the United States and its territories must have their academic degree(s) validated as equivalent to the baccalaureate or master's degree conferred by a regionally accredited college or university in the United States. These applicants also must submit results of TOEFL examination (see College of Health Sciences TOEFL requirements).

### Clinical Nutrition: Graduation Requirements

Once admitted to the MS/Dietetic Internship program, students embark on a journey that entails the accumulation of 67 credit hours for graduation. This includes a minimum of 1,200 hours of supervised experience. Students must meet the following in order to graduate and have the degree conferred:

- Maintain a cumulative GPA of 3.0 or greater
- Successfully complete all didactic coursework
- Successfully complete all 1,200 hours of supervised experience
- Successfully complete all requirements of the thesis/non-thesis research experience
- Pass the Rush University Interprofessional course
- Complete a minimum of 16 contact hours of approved professional or community service

**Dietetic Internship:** In order to be eligible to take the registration exam administered by the Commission on Dietetic Registration, students must fulfill all requirements of the Dietetic Internship to receive a verification statement. Students must complete all Dietetic Internship program requirements within 30 months from the time they began the Dietetic Internship.

**MS degree:** Students must complete all program requirements within 5 years from matriculation. Any student who expects to go beyond that timeframe, must request an exception to the policy in writing to the Clinical Nutrition Academic Progress and Promotions Committee.

## Clinical Nutrition: Research Activities

Students have the option of selecting the thesis or master's research project track. Faculty members of the Department of Clinical Nutrition are involved in basic and applied nutrition research. Faculty and students present at professional meetings and publish in peer reviewed journals. A list of faculty and student research presentations and publications can be found at the Clinical Nutrition and Dietetic Internship webpage.

## Clinical Nutrition: Service Activities

Students are required to complete 16 hours of community or professional service during the program. Students meet this requirement in a variety of ways, including assisting at health fairs, volunteering at the local food pantry and helping at local clinics.

## Clinical Nutrition: Academic Policies

The combined Master of Science (MS)/Dietetic Internship program is offered on a full-time basis only. The program spans five terms, including the summer term. The supervised practice experiences must be completed within 30 months. The didactic and research components of the master's degree should be completed in five semesters. All students must complete coursework within five years of matriculation.

Rush University requires continuous enrollment through the completion of the degree (see Rush University Policies for further information). Students may be allowed to transfer up to 12 term hours of applicable graduate credit from another accredited university for the MS degree portion. Graduate

courses must be completed with a B or better and approved by the student's supervisory committee to be awarded transfer credit.

If a student is not finished in five years, a request for extension must be made to the Clinical Nutrition Academic Progress and Promotions Committee. If an extension is granted, conditions of the extension may include additional coursework to assure relevancy and currency of knowledge and competence at the master's level.

## Academic Progression

Students in the combined MS/Dietetic Internship program are required to earn grades of B or better in NTR 655 and a pass grade of P (equivalent to a grade of B or better) in NTR 650, NTR 651, NTR 652, NTR 653 and NTR 654. Grades of C or better are required in all other courses. Failure to earn minimum required grades may result in dismissal from the combined MS/Dietetic Internship program and will result in a performance review by the Clinical Nutrition Academic Progress and Promotions Committee. The faculty reserves the right to request the withdrawal of any student whose conduct or performance demonstrates lack of fitness for continuance in the graduate program.

Automatic probation for any student results when a student's cumulative GPA falls below 3.0 or when a student receives a grade of D or F in any course. The Clinical Nutrition Academic Progress and Promotions Committee notifies any student placed on probation, states the reason(s) for probation and indicates the conditions that must be satisfied for removal of probation.

A student who earns a grade of D or F in a course other than those listed above must repeat the course and earn at least a C. A student who earns a grade of D or F in more than one required course will be dismissed. Full-time students on probation must earn a cumulative GPA of 3.0 or greater by the end of the next two consecutive terms. Part-time students on probation must earn a cumulative GPA of 3.0 or greater after completing the next three courses (approximately 9 term hours). Improvement in the GPA must be shown each term of probation.

## Clinical Nutrition: Technical Standards

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values Blvd I CARE (innovation, collaboration, accountability, respect and excellence) Blvd translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Clinical Nutrition program:

### Acquire Information

- Acquire information from demonstrations and experiences in courses, such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies
- Recognize and assess patient changes in mood, activity, cognition, verbal and non-verbal communication

### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers
- Use and interpret information related to physiologic phenomena generated from diagnostic tools

### Motor

- Possess psychomotor skills necessary to provide or assist in holistic clinical nutrition care and perform or assist with procedures and treatments
- Practice in a safe manner and appropriately provide clinical nutrition care and assessment in emergencies and life support procedures, and perform universal precautions against contamination

### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors and all members of the health care team during practicum and other learning experiences
- Accurately elicit information, including a medical history and other information to adequately and effectively evaluate a population's, client's or patient's condition

## Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to the diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the clinical nutrition role
- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment or treatment strategy

## Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

## Character

- Demonstrate concern for others
- Integrity, accountability, interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and Clinical Nutrition Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program, should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs.

Given the clinical nature of our programs, time may be needed to implement the accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Accessibility Services to learn more about accommodations at Rush University:

Marie Lusk, MBA, MSW, LSW  
Director, Office of Student Accessibility Services  
Rush University  
600 S. Paulina St., Suite 901  
Chicago, IL 60612  
(312) 942-5237  
Marie\_Lusk@rush.edu

## Clinical Nutrition/Dietetic Internship (MS) Master's Research Project Track: Curriculum

First Year		Credit Hours
<b>Fall Term</b>		
NTR-650	Supervised Experience in Food Systems Management I	6
NTR-621	Regulation of Macronutrients & Energy Metabolism in Human Nutrition	3
CHS-610	Research Methods in the Health Sciences	2
NTR-682	Research Methods Application and Special Topics in Clinical Nutrition	1
IPE-502	Interprofessional Patient Centered Teams	Non Credit
Electives ( <i>see below</i> )		
<b>Spring Term</b>		
CHS-601	Introduction to Biostatistics	2
NTR-611	Advanced Nutrition Care I	3
NTR-651	Supervised Experience in Clinical Nutrition I	6
NTR-696	Master's Research Project	1
IPE-502	Interprofessional Patient Centered Teams	Non Credit
Electives ( <i>see below</i> )		
<b>Summer Term</b>		
NTR-612	Advanced Nutrition Care II	3
NTR-652	Supervised Experience in Clinical Nutrition II	6
NTR-691	Nutrition Epidemiology	3
NTR-695	Journal Club in Clinical Nutrition	1
NTR-696	Master's Research Project	1
Electives ( <i>see below</i> )		
Second Year		Credit Hours
<b>Fall Term</b>		
NTR-615	Community Nutrition: A Policy Perspective	3
NTR-641	Leadership and Management in Dietetics	3
NTR-653	Supervised Experience in Clinical Nutrition III	6
NTR-692	Seminar in Clinical Nutrition	1
NTR-696	Master's Research Project 1	
Electives ( <i>see below</i> )		
<b>Spring Term</b>		
NTR-654	Supervised Experience in Clinical Nutrition IV	6
NTR-696	Master's Research Project	1
Electives ( <i>see below</i> )		
<b>Electives</b>		
CHS-605	Introduction to Ethics in Healthcare	2
CHS-620	Health Care in America	2
NTR-604	Core Concepts of Health and Wellness	2
NTR-605	Sports Nutrition	2
NTR-606	Critical Analysis Multimedia	2
NTR-613	Advanced Nutrition Care III	2
NTR-622	Micronutrient, Phytochemicals and Dietary Supplements in Nutrition	2
NTR-623	Maternal and Infant Nutrition	2
NTR-900	Independent Study	1-3
<b>Program Total:</b>		<b>67</b>

## Clinical Nutrition/Dietetic Internship (MS) Thesis Track: Curriculum

First Year		Credit Hours
<b>Fall Term</b>		
CHS-610	Research Methods in the Health Sciences	2
NTR-621	Regulation of Macronutrients & Energy Metabolism in Human Nutrition	3
NTR-650	Supervised Experience in Food Systems Management I	6
NTR-682	Research Methods Application and Special Topics in Clinical Nutrition	1
IPE-502	Interprofessional Patient Centered Teams	Non Credit
Electives ( <i>see below</i> )		
<b>Spring Term</b>		
CHS-601	Introduction to Biostatistics	2
NTR-611	Advanced Nutrition Care I	3
NTR-651	Supervised Experience in Clinical Nutrition I	6
NTR-698	Thesis	1-6
IPE-502	Interprofessional Patient Centered Teams	Non Credit
Electives ( <i>see below</i> )		
<b>Summer Term</b>		
NTR-612	Advanced Nutrition Care II	3
NTR-652	Supervised Experience in Clinical Nutrition II	6
NTR-691	Nutrition Epidemiology	3
NTR-695	Journal Club in Clinical Nutrition	1
NTR-698	Thesis	1-6
Electives ( <i>see below</i> )		
Second Year		Credit Hours
<b>Fall Term</b>		
NTR-615	Community Nutrition: A Policy Perspective	3
NTR-641	Leadership and Management in Dietetics	3
NTR-653	Supervised Experience in Clinical Nutrition III	6
NTR-698	Thesis	1-6
Electives ( <i>see below</i> )		
<b>Spring Term</b>		
NTR-654	Supervised Experience in Clinical Nutrition IV	6
NTR-692	Seminar in Clinical Nutrition	1
NTR-698	Thesis	1-6
Electives ( <i>see below</i> )		
<b>Electives</b>		
CHS-605	Introduction to Ethics in Healthcare	2
NTR-604	Core Concepts of Health and Wellness	2
NTR-605	Sports Nutrition	2
NTR-606	Critical Analysis Multimedia	2
NTR-613	Advanced Nutrition Care III	2
CHS-620	Health Care in America	2
NTR-622	Micronutrient, Phytochemicals and Dietary Supplements in Nutrition	2
NTR-623	Maternal and Infant Nutrition	2
NTR-900	Independent Study	1-3
<b>Program Total:</b>		<b>67</b>



## Health Sciences

### Bachelor of Science Health Sciences (BS)

#### Philosophy

The Bachelor of Science in Health Sciences program prepares students for advanced learning by providing immersive and interprofessional experiences in a diverse setting.

We believe our students have strong desires to improve the health of their communities. We are committed to creating an environment where students can develop the skills to become critical thinkers, creative problem-solvers and self-directed learners. These tenets are woven throughout the BS in Health Sciences curriculum and educational experiences.

#### Mission

The mission of the Bachelor of Science in Health Sciences program is to prepare highly qualified, diverse graduates interested in pursuing health care careers that require advanced levels of professional education. The program seeks to create a bridge for students from a variety of backgrounds in order to improve the cultural competency of health care professionals.

#### Vision

The BS in Health Sciences program will be a recognized leader in providing pathways for diverse students into the health professions.

### Health Sciences (BS): Admission Requirements

#### Admissions Requirements

Admission to the program is on a competitive basis. We select students based on a number of factors, including the following:

- Overall grade point average
- Prerequisite grade-point average
- Coursework completed prior to application
- Interpersonal skills

**Please note:** An associate degree is not required for admission.

The following are required to be considered for admission into the Bachelor of Science in health sciences program:

1. A minimum of 60 semester (90 quarter) credit hours of lower division (100 or 200 level courses) undergraduate coursework from a regionally accredited college or university prior to matriculation
2. A recommended minimum cumulative and science GPA of 2.75 on a 4.0 scale
3. Completion of the following prerequisite courses with a grade of C or better

#### Application for Admission

**Entry term:** Fall (September)

**Application cycle:** Continuous

**Recommended application deadline:** Aug. 1

#### Complete these steps to apply to the Bachelor of Science in health sciences program:

1. Submit an application using the Allied Health Centralized Application Service, (AHCAS).
2. You will also need to submit the following through AHCAS:
  - A. Official transcripts from every U.S. college or university attended
  - B. International course evaluations for all courses and degrees completed at a college or university outside the United States
  - C. Three professional recommendations. References should be current or former academic advisers, professors, managers or supervisors.  
  
We will not accept evaluations from coworkers, colleagues, friends or family members.
  - D. Personal statement
3. If your native language is not English, submit Test of English as a Foreign Language (TOEFL) scores.
4. Participate in a personal interview with program faculty.

#### Prerequisites

All entering students must complete the following core general education requirements in order to be eligible for the Bachelor in Science degree in the Health Sciences program.

Requirements	Semester Hours	Quarter Hours
Two courses in communications (English composition) is required	6	9
One course in mathematics (college algebra or higher)	3	4
Two courses in life sciences (For example: anatomy, biology, microbiology, pathophysiology, or physiology)	6	9
One course in physical sciences (For example: earth science, astronomy, chemistry, or physics)	3	4
One course in social sciences (For example: government, history, political science, psychology, or sociology)	3	4
One course in humanities (For example: ethics, fine arts, literature, or philosophy) Note: Performance courses do not meet this requirement	3	4
Approximately 12 elective courses in communications, computer science, ethics, fine arts, humanities, life sciences, literature, philosophy, physical sciences, or social sciences	36	56
<b>Total Hours of Required and Elective Courses:</b>	<b>60</b>	<b>90</b>

### Health Sciences (BS): Technical Standards

Rush University is committed to diversity, and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values - I CARE (innovation, collaboration, accountability, respect and excellence) - translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Bachelor of Health Sciences program:

#### Acquire Information

- Acquire information from demonstrations and experiences in courses, such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval).
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies

#### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers/procedures
- Use and interpret information generated from diagnostic tools

#### Motor

- Possess psychomotor skills necessary to perform or assist with day-to-day responsibilities commensurate with the student's discipline
- Practice in a safe manner and perform universal precautions against contamination

#### Communication

- Communicate effectively and sensitively with patients and families.
- Communicate effectively with faculty, preceptors, employees, other professionals and all members of the health care team during practicum, internship and/or other learning experiences

#### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to the diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the health sciences role

- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment, management or treatment strategy

#### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

#### Character

- Demonstrate concern for others
- Integrity, accountability, interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and Health Sciences Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program, should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs.

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 Chicago, IL 60612  
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 Marie\_Lusk@rush.edu

## Health Sciences (BS): Academic Policies

### Academic Progression

High academic performance in all courses is expected. Students will be considered in good standing at Rush University unless placed on academic probation. A

cumulative grade-point average of at least 2.0 is required to be considered in good standing and to be eligible to continue in the baccalaureate program. Cumulative grade-point averages will be reviewed after each term.

The faculty reserves the right to request the withdrawal of a student whose conduct, health or performance demonstrates lack of fitness for continuance in a health profession. Any such student not voluntarily withdrawing will be dismissed from the University, regardless of grade-point average.

### Academic Probation

Academic probation is assigned to any student who receives a term grade point-average below 2.0 or whose cumulative grade-point average falls below 2.0. Students placed on probation have two terms to regain the status of good standing as follows:

- The student must attain a grade-point average of at least 2.0 in the term following the term when probation was assigned.
- Two terms after being placed on probation, the student must have a cumulative grade-point average above 2.0.

Failure to make the minimum term grade-point average one term after probation Blvd regardless of the cumulative grade-point average Blvd or failure to make the minimum cumulative grade-point average two terms after probation will result in dismissal from the University.

### D, F or N Grades in the Bachelor of Science in Health Sciences Program

Undergraduate students who receive an F or N grade in any course must repeat that course, with the F or N grade being replaced by the grade earned upon repeating the course. In the event that a student is required to repeat a course that is a prerequisite for an advanced course, the advanced course may not be taken until the student successfully passes the prerequisite course. Thus, the student's progression in the program may be affected. Students who receive a second D, F or N grade in the same academic year will be dismissed from the program, regardless of cumulative grade-point average.

### Residency Requirement

Students must complete their final 36 credit hours of course work in-residence at Rush University in order to graduate.

## Health Sciences (BS): Curriculum

### Upper Division Course Work

Rush University provides two years of upper-division coursework to complete the requirements for the Bachelor of Science in Health Sciences program. Upper-division course work consists of core courses required of all students and elective courses. Rush offers two organized concentrations though students are not required to choose a specific concentration to complete this degree program:

- Medical sciences
- Leadership and community wellness

Students must complete a minimum of 60 credit hours of upper-division coursework to include a minimum of 27 credit hours in the required core and at least 33 credit hours of courses approved by academic adviser.

### Core Courses Required of All Students

Course		Credits
HSC-354	Introduction to Health Professions	3
HSC-352	Professional Writing	3
HSC-448	Health Care Ethics	2
HSC-364	Health Care Systems and Policies	1
HSC-358	Global Health	3
HSC-488	Research Methods	3
Or		
IS-463	Research & Statistical Methods	3
HSC-462	Practicum	9
HSC-464	Capstone	3

### Electives

Elective courses must be approved by the student's academic adviser and the program director and correspond with the student's career goals. **Individualized plans of study are developed for each student based on their future academic goals with their advisor.**

Course		Credits
HSC-350	Medical Physiology	4
HSC-360	Human Anatomy/Lab	4
HSC-362	Clinical Immunology:	3
HSC-368	Genetics	3
HSC-371	Health Education	3
HSC-372	Medical Terminology	1
HSC-400	Independent Study	1-12
HSC 414	Patient Assessment	3
HSC-425	Health Care Informatics	2
HSC-435	Nutrition	3
HSC-445	Fundamentals of Neuroscience	3
HSC-455	Pathophysiology	3
HSC-458	Microbiology	3
HSC-459	Pharmacology	3
HSC-460	Management Principles	3
HSC-461	Leadership Theory & Practice	3
HSC-467	Issues and Trends in Health Care	3
HSC-480	Principles of Health & Wellness	3
HSC-483	Community Health	3
HSM-688	Topics in Health Systems Management	2
IS-305	Intro to Imaging Sciences	3
IS-307	Introduction to Patient Care	3
IS-310	Sectional Anatomy & Pathology	5
IS-318	Patient Assessment	3
IS-325	Pharmacology and Radiologic Contrast Agents	3
IS-340	MRI Safety	3
IS-454	Health Care Ethics and Cultural Competence	4
VAS-310	Patient Care	2
VAS-370	General Pathophysiology	3
VAS-390	Introduction to Research	2

## Medical Sciences Electives

Students who wish to choose the Medical Sciences track should choose their 33 credits from the below courses:

Course		Credits
HSC-350	Medical Physiology	4
HSC-360	Human Anatomy/Lab	4
HSC-362	Clinical Immunology	3
HSC-368	Genetics	3
HSC-372	Medical Terminology	1
HSC-414	Patient Assessment	3
HSC-445	Fundamentals of Neuroscience	3
HSC-454	Principles of Biochemistry	4
HSC-455	Pathophysiology	3
HSC-458	Microbiology	3
HSC-459	Pharmacology	3
IS-310	Sectional Anatomy & Pathology	5
VAS-310	Patient Care	2

## Leadership and Community Wellness Electives

Students who wish to choose the Leadership and Community Wellness should be sure to select all of the following courses as part of their 33 required elective credit:

Course		Credits
HSC-371	Health Education	3
HSC-425	Health Care Informatics	2
HSC-435	Nutrition	3
HSC-460	Management Principles	3
HSC-461	Leadership Theory & Practice	3
HSC-467	Issues and Trends in Health Care	3
HSC-480	Principles and Health & Wellness	3
HSC-483	Community Health	3
IS-454	Health Care Ethics and Cultural Competence	4

## Transfer of Credit

Students who desire to complete other elective courses, either offered at Rush University or at another regionally accredited college or university, may request to do so. These electives may be incorporated into the student's program plan with the approval of the student's academic adviser.

## Doctor of Philosophy Health Sciences (PhD)

### Educational Philosophy

We believe our students will become future stewards of health sciences, worthy of being entrusted as guardians of the vitality, quality and integrity of their field. Toward that goal, we teach the highest levels of competence and integrity in education, leadership and research, and provide professional development and research mentoring by established scholars across the continuum of health sciences.

The underlying educational philosophy of the program is grounded in a triad of learner-centered thought: progressivism in which the learners' experiences, needs and interests are explored and fostered; reconstructionism in which the learners see their growth applied to real-world problems; and existentialism by which learners are challenged to own their future and become leaders in the evolution of health care.

### Mission

Our mission is to produce experienced health science professionals with a broad-based, interdisciplinary education who are prepared to lead, teach, practice clinically and perform research at the highest levels of competency and integrity.

### Vision

To become the highest quality PhD in health sciences program in the United States.

### Curricular Design

We offer a rigorous curriculum that emphasizes fundamentals and advanced concepts in leadership, education, research and professional development. We provide high quality, asynchronous online courses in leadership, education and research. The role of the curricular design is to provide a logical progression to learner growth.

The guiding principal of the curricular design is three-fold and presented in a continuum of foundations (theory), application (real-world problem resolution) and vision (synthesis and creative/critical forward thinking regarding the future trajectory of health care). The curricular design first establishes a foundation of past and current thinking (epistemological framework) and theory associated with leadership, education and research. The curriculum challenges learners to address real-world applications through focused seminar courses and learner-centered projects. The curriculum

progresses and challenges the learners' axiological considerations, encouraging the value of moving health care forward through research, demonstration projects, dissertation focus, ownership of learning and philosophical challenges to the status quo.

The program director provides general academic support and oversees the professional development courses. Transition to doctoral candidate occurs upon successfully completing most core courses, passing a comprehensive qualifying exam and passing a dissertation proposal presented to the dissertation committee.

Doctoral candidates conduct research and publish under the guidance and supervision of a research mentor. The dissertation committee consists of the research mentor, the program director and at least three additional qualified members. The dissertation committee ensures students are well-prepared to identify and fill important gaps in knowledge through the generation and dissemination of new knowledge, and endorses the awarding of the PhD degree.

### Program Overview

The Doctor of Philosophy in Health Sciences program was launched by the College of Health Sciences in fall 2011. The program is designed to prepare health science professionals to assume major leadership, research and educational positions within their professions, as well as to foster career advancement opportunities.

The program provides a broad-based, interdisciplinary education that prepares graduates to teach, practice and perform research across the continuum of health care. The program prepares individuals for careers in research, education and leadership within allied health and, more broadly, within health care and higher education.

The program of study for the Doctor of Philosophy degree involves formal courses in leadership, education and research. It also involves mentored professional development within a health science specialty field. The publication of scholarly work in a peer-reviewed journal and the passing of a comprehensive oral examination are also required. In addition, students must complete and present a dissertation proposal that meets the approval of their advisory committee prior to beginning a dissertation research project that culminates in the writing and oral public defense of a dissertation.

The PhD degree demonstrates the capability for independent research and recognizes a unique contribution to

scientific knowledge. The program may be taken on a part-time basis, however, in all cases must be completed in seven years or less.

The program consists of five major core areas: leadership (12 CR), education (9 CR), research (18 CR), professional development (3 CR) and dissertation research (12 CR minimum). The professional development courses are based on learning contracts that provide opportunities for advanced mentored learning and skill development in the allied health profession matching the students' interests. Student learning objectives have been developed for each major core area and are mapped to individual courses.

Students entering the program must have a master's degree in an area related to health sciences/health care administration or substantial professional experiences in a health sciences related field.

### Program Objectives

1. Produce scholars who will generate new knowledge and innovative applications through research
2. Produce scholars who will disseminate knowledge through education and publications
3. Produce scholars who will shape the future of health sciences through leadership and cooperation
4. Produce scholars who will uphold the highest ideals of health sciences

## Health Sciences (PhD): Admission Requirements

Applicants must have completed a master's degree or higher degree - such as an MD, AuD or OTD - from a regionally accredited college or university, provide official transcripts from each college or university attended and hold appropriate certification/licensure in their individual health profession by a major U.S. certification/licensing agency, as applicable. Degrees obtained outside the United States must be evaluated by Education Credentials Evaluators and must be judged equivalent to at least a master's degree by U.S. standards.

Additional applicant requirements include the following:

- Possess a minimum overall cumulative grade-point average of 3.0 on a 4.0 scale.
- Provide three letters of recommendations from people who are knowledgeable about the quality of the applicant's scholarly activities and/or work experiences.

- Prior health science experience is required for admission. Prior research experience will also be considered favorably.
- If your native language is not English, submit Test of English as a Foreign Language, or TOEFL, scores.
- Specific admission requirements may be waived by the College of Health Sciences admissions office. These will be addressed on a case-by-case basis.

Admission is on a competitive basis. The basis for inviting an applicant for an interview includes the applicant's academic performance represented by coursework grades, course load, trends, degree of course difficulty and GRE or MCAT scores. In addition, the review includes consideration of the non-academic qualifications listed below in no particular order of preference or weight:

- Professional work experience
- Positions of leadership held
- Public/community service or volunteer-related activities
- Volunteer activities in areas related to health care
- Communication skills, as demonstrated in the essay and personal interview
- Reference letters or recommendations
- Research accomplishments

Once the College of Health Sciences admissions office has received all required documents, including the application fee, the application is forwarded to the program admission committee for review. If an applicant meets all the college and program admission criteria and, following an interview, the program admission committee agrees to admit the student, the College of Health Sciences admissions office writes the acceptance notification to the applicant.

For more information, please contact the program director:  
Douglas Kuperman, PhD, RRT  
PhD in Health Sciences Program Director  
(312) 942-8271  
douglas\_kuperman@rush.edu

### Admissions Applications

Application to the Rush University PhD in Health Sciences program must be completed online.

### Transfer of Credit

Credit for equivalent doctoral level courses may be transferred into the program using the petition to transfer credit form obtained from the Registrar. Only courses with grades of A or B are eligible. However, grades from courses transferred from another institution are not recorded on the student's academic record; the number of credits is recorded and added to the cumulative number of credits. Students must receive a minimum of 30 credit hours from Rush University to be eligible for the degree.

### Health Sciences (PhD): Technical Standards

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values - I CARE (innovation, collaboration, accountability, respect and excellence) - translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the PhD in Health Sciences program:

#### Acquire Information

- Acquire information from demonstrations and experiences in courses, such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies

#### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers/procedures
- Use and interpret information generated from diagnostic tools

### Motor

- Possess psychomotor skills necessary to perform or assist with day-to-day responsibilities commensurate with the student's discipline
- Practice in a safe manner and perform universal precautions against contamination

### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors, employees, other professionals and all members of the health care team during practicum, internship and/or other learning experiences

### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the PhD in health sciences role
- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment, management or treatment strategy

### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

### Character

- Demonstrate concern for others
- Integrity, accountability, interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and PhD in Health Sciences program Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine that require reasonable accommodation to fully engage in the program, should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs. Given the clinical nature of our programs, time may be needed to create and implement the accommodations.

Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Accessibility Services to learn more about accommodations at Rush University:

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### Health Sciences (PhD): Curriculum

#### Student Learning Objectives

1. Demonstrate knowledge of foundational content and an understanding of the historical and contemporary theoretical frameworks of leadership and education through active discussion and written projects, including leadership needs assessments, organizational culture evaluations, and self-assessment of learner's current leadership and educational operational basis with the development of individual action plans for improvement and growth
2. Apply the foundational knowledge to real-world settings, as demonstrated by the successful completion of course projects, group activities, advanced critical thinking related to health science educational program and course design, development, implementation, administration and evaluation, critical discussions and publications
3. Synthesize program content into a creative and unique forward-looking research project while applying current research ethics, theory and practice to influence the future of the health science professions
4. Integrate advanced skills and knowledge of composition, oral presentation, leadership, education and research into practice of the health science professions

Student Learning Objective 1 maps to HSC 631, HSC 632, HSC 633, HSC 641 and HSC 643.

Student Learning Objective 2 maps to HSC 631, HSC 634, HSC 641, HSC 642 and HSC 643

Student Learning Objective 3 maps to HSC 631, HSC 651, HSC 652, HSC 653, HSC 654, HSC 655, HSC 656 and HSC 699.

Student Learning Objective 4 maps to HSC 631, HSC 661, HSC 662 and HSC 663.

Prior to graduation, all students in the program will demonstrate achievement of the competencies described above in each of the core competency areas of education, research and leadership. Students will also demonstrate achievement of the required competencies by professional development in their individual professional disciplines.

Leadership Core Courses	Credits
HSC-631 Composition for Effective Professional Writing	3
HSC-632 Leadership Theory	3
HSC-633 Leadership in Higher Education	3
HSC-634 Issues and Trends in Health Care	3
Education Core Courses	Credits
HSC-641 Education Theory and Methods	3
HSC-642 Curriculum and Instruction	3
HSC-643 The Adult Learner	3
Research Core Courses	Credits
HSC-652 The Research Process I	3
HSC-653 The Research Process II	3
HSC-654 Grantsmanship	3
HSC-655 Ethical Conduct in Research Settings	3
HSC-656 The Dissertation Proposal	3
HSC-651 Advanced Biostatistics	3
Professional Development	Credits
HSC-661 Professional Development I	1
HSC-662 Professional Development II	1
HSC-663 Professional Development III	1
Independent Study	Credits
HSC-900 Independent Study <i>This variable credit course is optional.</i>	1-12
Dissertation Research	Credits
HSC-699 Dissertation Research <i>This course will be repeated for a minimum of 12 credit hours.</i>	3
<b>Program Total:</b>	<b>54</b>

## Health Systems Management

### Master of Science Health Systems Management (MS)

#### Philosophy

The Health Systems Management, or HSM, master's program, which started in 1979, educates students for highly successful careers in the rapidly growing field of health care management. We develop future leaders to transform health care in a professional program founded in research and evidence-based learning.

Students bring real-life experience to the classroom based on our internship model. Faculty bring real-life experience and teaching methods into the classroom based on our practitioner-teacher model and real-life applications.

Our program facilitates long-term involvement in the health care leadership profession as teachers, mentors and lifelong learners in the field. Application, innovation, excellence and leadership keep us on the cutting edge of experiential learning as we continue to evolve curriculum content based on industry trends.

#### Mission

Our mission is to prepare individuals for roles of increasing leadership in the field of health care management, with the ultimate goal of transforming health care organizations to deliver the highest-quality patient care and improve the lives of patients, their families and the community. Our practitioner-teacher model integrates lifelong learning, scholarship and service to ensure our diverse students, faculty and alumni are leaders in transforming health care.

Our curriculum is designed to provide the knowledge, skills, abilities and values required to succeed in the field of health care management. An emphasis on competency and professional skills development - and an orientation toward lifelong learning - ensures new graduates are well-prepared for early careerist positions and our alumni hold positions of increasing responsibility during their careers.

Our practitioner-teacher model provides leadership development opportunities for the faculty, ensuring they stay abreast of the most recent conceptual frameworks and best practices in the field. Their roles as practitioner-faculty provide them with opportunities to teach and mentor the next generation of health care leaders.

#### Vision

Our program will be recognized as one of the premier health administration graduate programs in the nation. Our practitioner-teacher model will be recognized as an ideal way to educate and train health administration graduate students. Through participation in the program's practitioner-teacher model, our faculty will be known for innovation and excellence in health care management practice, education and scholarship.

#### Values

Our program embraces the values of Rush University Medical Center, Rush University and the College of Health Sciences. These values include the following: innovation, collaboration, accountability, respect, excellence, diversity, inclusion and accommodation.

### Health Systems Management (MS): Admission Requirements

Applicants must have a bachelor's degree from an accredited college or university or anticipate completing that degree prior to the start of the HSM degree program. The two prerequisite courses, which consist of an undergraduate course in accounting and an undergraduate course in statistics, also must be completed prior to enrollment but you may apply to the program while this is in progress. An undergraduate course in microeconomics is highly recommended. Pre-requisites are required for matriculation but candidates may still apply to the program prior to completion.

Applicants fill out an online application, provide three letters of recommendation and submit official copies of their college/university transcripts from every college/university previously attended. In addition, they submit scores from either the -GRE graduate school entry exam or the Graduate Management Aptitude Test, or GMAT. International students also must submit a credentialing evaluation of their international education, as well as the results from the Test of English as a Foreign Language, or TOEFL.

Qualified applicants are invited to Rush for an admissions visit. The visit typically includes four faculty interviews, lunch with a current student and a tour of Rush campus.

### Health Systems Management: Academic Policies

#### Enrollment

While the program is primarily designed for full-time study, students can enroll in the program either on a full- or part-time basis. Full-time students typically attend the program for four terms over two academic years, with a summer break. Part-time students typically take two to three courses per term. *The part-time program holds classes during traditional hours and does not offer evening or weekend classes at this time.*

The program must be completed within a five-year time limit unless the student is granted a waiver by program officials.

#### Academic Progress

All students in the Department of Health Systems Management must achieve a grade-point average of 3.0 (A = 4.0) each term to maintain satisfactory academic status. A student is placed on academic probation when grades fall below a term or cumulative GPA of 3.0 or when a student receives a grade of F in any course. A student on academic probation remains on probation until meeting the requirements established by the program for removal from academic probation.

#### Academic Advising

During orientation week, all students are assigned an academic adviser from among the core faculty. By the end of the first term, students are also assigned a career adviser from among Rush practitioner-teacher faculty.

#### Graduation Requirements

To be eligible to graduate, a student must successfully complete all of the Department of Health Systems Management's academic requirements, which include earning a minimum of 58 term hours of credit and achieving a minimum cumulative grade point average of 3.0.

In addition, full-time students must complete a minimum of 440 hours of work in a health care management internship. Most students will complete this by working in a part-time student job during the academic program and registering for HSM-620 and 622. Part-time students complete a separate internship course, HSM 624 and 626. Please see course descriptions for more information.

Students need to have at least 16 documented contact hours of professional or community service.

## Faculty Work and Service Activities

Members of the faculty of the Department of Health Systems Management are actively involved in the operation of Rush University Medical Center as hospital administrators and health care planners, university administrators, financial managers, clinicians, attorneys, researcher, and information services managers. They serve as consultants to hospitals, planning bodies and other organizations.

Faculty members hold leadership positions, participate in seminars and engage in other professional activities sponsored by the American College of Healthcare Executives, the American Hospital Association, the Chicago Health Executives Forum, the Healthcare Financial Management Association, the Association of University Programs in Health Administration, the Commission on Accreditation of Healthcare Management Education, the Healthcare Information Management Systems Society and the Illinois Hospital and Health Systems Association.

## Career Services

Health Systems Management students receive ongoing career mentoring, counseling and related services throughout their academic career. During the first academic year, full-time students are placed in part-time jobs throughout Rush University Medical Center. Job sites include Perioperative Services, Revenue Cycle Management, Human Resources, Rush University Medical Group, Community Health, Quality, Rush University Children's Hospital, Patient Relations, Emergency Management, Emergency Department, Population Health and Aging, Population Health, Supply Chain, Department of Surgery, Women's Leadership Center, College of Nursing Faculty Practice and Internal Medicine. Please note, sites vary year to year. Incoming students will be given an up to date list of internship sites as they begin the program.

The jobs provide practical experience, reinforce the coursework, produce a more dynamic classroom experience and offer students a multifaceted perspective on the field of health care management. The student's manager also functions as a preceptor for the work experience. More information about internship onboarding will be given to students during their orientation week and applies to full-time students only.

Program faculty and staff help identify opportunities for summer internships and part-time work during the second academic year and counseling/assistance to secure post-graduate fellowships or jobs.

While students receive individualized input regarding their career goals, the program's Professional Seminar course provides systematic training, guidance and feedback in professional skills development and career planning.

## Rush Center for the Advancement of Health Care Value

The vision of the Rush Center for the Advancement of Health Care Value is to be recognized globally as an innovator in conducting research that prepares leaders for the future of health care.

Our center is housed within the Department of Health Systems Management at Rush University.

Our center's work is grounded in interdisciplinary research and focuses on translating research into practice and uses practice as a foundation for research. Our research is differentiated by the following:

- Academically based center with close ties to the practice community
- Strong focus on leadership development in health care research and practice
- Pursuit of objective knowledge
- Experts in advanced analytic methods
- Proficiency in large multisource database analyses

Our research focuses on evaluating ways to improve the value of care provided by health care organizations. This work addresses important challenges that relate to the following:

### Organizational excellence and leadership

The organizational excellence and leadership program focuses on improving health care value by understanding the critical roles of leadership, governance, leadership development and other high-performance work practices in organizational outcomes, such as patient experience and financial performance.

### The patient experience

Rush University Medical Center has a long history of providing and researching best practices in patient care. The Patient Experience Research Initiative, within the Health Systems Management program, works to further develop the understanding of the patient experience and promote scholarship to provide empirically based knowledge on the experience of patients.

## Health care value, quality and safety

The health care value, quality and safety program focuses on the following topics:

- Lean operations
- Throughput improvements
- Education in variation and standardization
- Just culture
- Informed decision-making and problem-solving
- Change management
- Sustainability strategies in health care organizations

## Population health

Population health research focuses on identifying the patterns of health determinants and their relationships with health outcomes among populations. The design is to implement evidence-based practice or interventions at an individual or societal level to reduce health disparities among vulnerable populations, such as racial and ethnic minorities, the uninsured, low-income children and women, and the elderly.

## International health

The department's international health care research program focuses on improving value by strengthening the evidence base for improving the value of health care through global exchange. Our research includes macro- and micro-level drivers of health care exports and international medical travel.

## Workforce of the future

Our research on the workforce of the future focuses on improving health care value by strengthening the pipeline of talented professionals into critical health care positions, with a special emphasis on understanding and addressing the challenges faced by early careerists from disadvantaged and underrepresented groups.

## Interprofessionalism

Interprofessionalism in health care delivery and health care education is becoming increasingly recognized as a cornerstone of improved service delivery. Research in this area focuses on the differential outcomes associated with a coordinated, team-based approach to service delivery.

For more information about our center, contact Tricia Johnson, PhD, associate chair of Research and Education, professor and director, at (312) 942-7107 or [tricia\\_johnson@rush.edu](mailto:tricia_johnson@rush.edu).

## Health Systems Management: Technical Standards

Rush University is committed to diversity and attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values - ICARE (innovation, collaboration, accountability, respect and excellence) - translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Health Systems Management program:

### Acquire Information

- Acquire information from demonstrations and experiences in courses such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies

### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers/procedures.
- Use and interpret information generated from diagnostic tools.

### Motor

- Possess psychomotor skills necessary to perform or assist with day-to-day responsibilities commensurate with the student's discipline
- Practice in a safe manner and perform universal precautions against contamination

### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors, employees other professionals and all members of the health care team during practicum, internship and/or other learning experiences

### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to the diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the health systems management role.
- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment, management or treatment strategy

### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

### Character

- Demonstrate concern for others
- Integrity, accountability, interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and Health Systems Management Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program, should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs.

Given the clinical nature of our programs, time may be needed to create and implement the accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Accessibility Services to learn more about accommodations at Rush University:

Marie Lusk, MBA, MSW, LSW  
Director, Office of Student Accessibility Services  
Rush University  
600 S. Paulina St., Suite 901  
Chicago, IL 60612  
(312) 942-5237  
Marie\_Lusk@rush.edu

## Health Systems Management (MS): Curriculum

The curriculum is designed to instruct students in the current theory and practice of health services management, including the study of organizational behavior, quantitative and analytical techniques, planning, finance and human resources management. The curriculum structure gives students the opportunity to apply managerial principles in real-world learning environments and design and conduct applied health-services research projects.

The curriculum content focuses on the following core content areas: professional development, operations and information systems, human resources and organizational design, health care business, finance, analytics and emerging content.

## Health Systems Management, Full-Time (MS)

First Year		Credits
<b>Fall Term</b>		
HSM-606	Health Care Organization & the Patient Experience	3
HSM-608	Human Resource Management	3
HSM-610	Professional Seminar	3
HSM-613	Health Care Accounting	2
HSM-614	Finance Fundamentals	3
HSM-620	HSM Internship	1
<b>Spring Term</b>		
HSM-616	Health Informatics	3
HSM-622	HSM Internship	1
HSM-628	Health Care Economics & Payment Systems	3
HSM-632	Statistics for Health Care Management	2
HSM-636	Quality, Safety & Operational Improvement in Health Care	4
HSM-688	Topics in Health Systems Management	2
Second Year		Credits
<b>Fall Term</b>		
HSM-640	Health Care Planning & Marketing	2
HSM-644	Health Care Managerial Finance & Seminar	4
HSM-648	Health Law & Ethics for Health Care Managers	3
HSM-652	Health Policy	2
HSM-656	Master's Project I	3
<b>Spring Term</b>		
HSM-660	Master's Project II	2
HSM-664	Organizational Analysis & Change Leadership and Lifelong Learning	4
HSM-668	Managerial Epidemiology	2
HSM-672	Capstone: Strategic Management of Health Care Organizations	2
HSM-688	Topics in Health Systems Management <i>Students take two sections of HSM-688 during the spring term of their second year.</i>	2
<b>Program Total:</b>		<b>58</b>

## Health Systems Management, Part-Time (MS)

First Year		Credits
<b>Fall Term</b>		
HSM-606	Health Care Organization & the Patient Experience	3
HSM-610	Professional Seminar	3
<b>Spring Term</b>		
HSM-632	Statistics for Health Care Management	2
HSM-616	Health Informatics	3
HSM-688	Topics in Health Systems Management	2
Second Year		Credits
<b>Fall Term</b>		
HSM-608	Human Resources Management	3
HSM-613	Health Care Accounting	2
HSM-614	Finance Fundamentals	3
<b>Spring Term</b>		
HSM-628	Health Care Economics & Payment Systems	3
HSM-636	Quality, Safety & Operational Improvement in Health Care	4
Third Year		Credits
<b>Fall Term</b>		
HSM-640	Health Care Planning & Marketing	2
HSM-644	Health Care Managerial Finance & Seminar	4
HSM-652	Health Policy	2
<b>Spring Term</b>		
HSM-664	Organizational Analysis & Change Leadership & Lifelong Learning	4
HSM-668	Managerial Epidemiology	2
HSM-688	Topics in Health Systems Management	2
Fourth Year		Credits
<b>Fall Term</b>		
HSM-648	Health Law & Ethics for Health Care Managers	3
HSM-656	Master's Project I	3
<b>Spring Term</b>		
HSM-660	Master's Project II	2
HSM-672	Capstone: Strategic Management of Health Care Organizations	2
HSM-688	Topics in Health Systems Management	2
<b>Internship Requirement</b>		
All part-time students are required to register for two credits of part-time internship coursework. This can be taken in either the second, third or fourth year of the part-time program and requires approval from an academic adviser.		
HSM-624	HSM Part-Time Internship	1-3
HSM-626	HSM Part-Time Internship	1-3
<b>Program Total:</b>		<b>58</b>

## Medical Imaging Sciences

### Bachelor of Science Imaging Sciences (BS)

#### About the Profession

Radiologic imaging science, also known as radiologic technology or medical radiography, is the allied health profession responsible for diagnostic and interventional medical radiographic imaging. Under the supervision of physicians, imaging sciences professionals provide medical imaging services to patients.

#### Program Overview

The Rush University Bachelor of Science in Imaging Sciences program offers an opportunity for registered radiologic technologists to advance their education by obtaining a bachelor's degree and skills that are significant to their current profession. This program offers the radiologic technologist an opportunity for advancement in employment and prepares advanced medical imaging technologists for professional leadership roles.

This program will provide graduates with the knowledge, skills and professional competencies needed to perform advanced-level imaging in computed tomography (CT), magnetic resonance imaging (MRI), cardiac-interventional (CI), vascular-interventional (VI) and other advanced imaging modalities.

The Bachelor of Science in Imaging Sciences is a career ladder program to provide advanced training and education for certified imaging technologists. In addition to the program prerequisites, the program requires a minimum of 74 term credit hours taken at the upper-division undergraduate level. The professional phase of the program, which consists of imaging sciences coursework and clinical fieldwork, is completed at Rush University and its affiliated clinical sites. The program is dedicated to clinical and academic excellence and includes more than 1,000 hours of in-hospital clinical practice. As a leadership program in imaging sciences, the program is designed to provide graduates with the opportunity to gain the foundation needed to assume professional leadership roles in clinical practice, clinical specialty areas, education and management.

Students accepted into the professional phase normally begin course work in the fall term of the first year of the program, though students may begin taking classes at other times during the year with permission of the program director. Coursework in the professional phase may be taken on

a full-time (over 24 months) or part-time basis. Each student will develop an individualized program to be approved by the program director. As a part of the program, graduates will complete the clinical training required to be eligible for post-primary pathway to certification in CT, MRI, CI or VI offered by the American Registry of Radiologic Technologists.

An entry-level MRI track is available to students who are not licensed in radiography or nuclear medicine. Licensure or eligibility for accreditation in the practice of medical radiation technology by the Illinois Emergency Management Agency is not required for successful completion of the MRI track, as MRI is a non-ionizing imaging modality. The MRI entry-level track is recognized as an MRI primary-pathway educational program by the American Registry of Radiologic Technologists.

### Imaging Sciences (BS): Admission Requirements

Requirements for admission to the professional phase of the Imaging Sciences program include the following:

- Completion of 60 semesters or 90 quarter hours of college or university credit at a regionally accredited college or university.
- Minimum overall GPA of at least 2.5 out of 4.0 in all college/university coursework.
- Prerequisite courses include English composition, college algebra, chemistry, human anatomy and physiology, physics, speech, humanities or social sciences, microbiology, statistics and computer science. Note: Some prerequisites may be taken concurrently while enrolled in the program. Contact the program for more information. All general education requirements must be met prior to the awarding of the bachelor's degree.
- Successful completion of program prerequisites with a grade of at least C or higher from a regionally accredited college or university.
- Associate degree in medical radiography or nuclear medicine technology (not applicable if applying to the entry-level MRI track) from a program accredited by the Joint Review Committee on Education in Radiologic Technology (or the Joint Review Committee on Educational Programs in Nuclear Medicine Technology. Applicants who have successfully completed an accredited hospital-based program should contact the program director to determine if they may be admitted on this basis.
- Licensure or eligibility for accreditation in the practice of medical radiation technology by the Illinois Emergency Management Agency (not applicable if applying to the



- entry-level MRI track).
- Completed application to the program and submission of official transcripts for all college coursework completed.
- Scheduled interview for selected applicants following review of the application materials.
- Ability to perform the essential functions of the job.
- All applicants whose native language is not English must present evidence of proficiency in English by satisfactorily completing the Test of English as a Foreign Language examination, or TOEFL. More information about this policy is in the main College of Health Sciences section of this catalog.

### Prerequisite Courses

General Education Courses	Semester Hours	Quarter Hours
Communications (English, composition)	6	8
Speech (oral communication)	3	4
Mathematics (college algebra or higher)	3	4
Humanities, philosophy or ethics	6	8
Fine arts (may not include a performance class)	3	4
Social and behavioral sciences (must include at least one course in psychology)	9	12
Elective courses in communications, humanities, fine arts, philosophy, ethics, social sciences, life sciences, physical sciences or computer science to total 60 semester credit hours for the core general education requirements for the college.	4	17
<b>Total</b>	<b>34</b>	<b>57</b>
Science Education Courses	Semester Hours	Quarter Hours
Human anatomy and physiology (4 hours anatomy and 4 hours physiology)	8	10
Chemistry (with lab)	4	5
Physics (with lab)	4	5
Computer science (includes computer literacy)	3	4
Statistics	3	4
Medical terminology	2	3
<b>Total</b>	<b>24</b>	<b>31</b>

### Imaging Sciences (BS): Technical Standards

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values Blvd | CARE (innovation, collaboration, accountability, respect and excellence) Blvd translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Imaging Sciences program:

#### Acquire Information

- Acquire information from demonstrations and experiences in courses, such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies.
- Recognize and assess patient changes in mood, activity, cognition, verbal and non-verbal communication

#### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers.
- Use and interpret information related to physiologic phenomena generated from diagnostic tools

#### Motor

- Possess psychomotor skills necessary to provide or assist in holistic imaging sciences care and perform or assist with procedures and treatments
- Practice in a safe manner and appropriately provide imaging sciences care and assessment in emergencies and life support procedures and perform universal precautions against contamination

#### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors and all members of the health care team during practicum and other learning experiences
- Accurately elicit information including a medical history and other information to adequately and effectively evaluate a population's, client's or patient's condition

#### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the imaging sciences role
- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment or treatment strategy

#### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

#### Character

- Demonstrate concern for others
- Integrity, accountability, interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and Imaging Sciences Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program, should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs.

Given the clinical nature of our programs, time may be needed to implement the accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Accessibility Services to learn more about accommodations at Rush University:

Marie Lusk, MBA, MSW, LSW  
 Director, Office of Student Accessibility Services  
 600 S. Paulina St., Suite 901  
 Chicago, IL 60612  
 (312) 942-5237  
 Marie\_Lusk@rush.edu

### Imaging Sciences (BS): Academic Policies

#### Good Academic Standing

High academic performance is expected in required courses. If a student earns grades lower than C or their cumulative GPA falls below a 2.5, the student may not be permitted to register for subsequent courses and may be subject to dismissal from the program. Students who withdraw or who have been dismissed from the program must reapply and will be considered as a new applicant. Students requesting readmission must submit a letter to Admissions.

#### Academic Probation

During the program, if a student's performance is unsatisfactory (GPA less than 2.5 or a letter grade of less than C), they may not be permitted to register for subsequent classes. The student will be subject to dismissal from the program. If the student wishes to reenter the program, they must reapply and will be considered on the same basis as any new applicant.

Students who voluntarily withdraw from the program, either passing or failing, have no guarantee of reinstatement to the program. Students requesting readmission to the program should submit a letter to that effect to the Committee on Progress and Promotion for Imaging Sciences.

#### Clinical Work

Students must maintain a cumulative GPA in the program of at least 2.5 unless otherwise described in each course syllabus, the minimum satisfactory grade for course credit is 75% (a letter grade of C), and all stipulated segments of a course must

be passed by this standard. Students must demonstrate proficiency in all clinical skills presented to pass clinical courses. For all clinical courses, the final exam must be passed at the designated cut score and a grade of C or better must be maintained to successfully complete each clinical practice to continue in the program.

### Grievance Policy - Student Appeals

Normal communication regarding course or program policy should be first directed to the instructor assigned to the course or clinical section involved. If the student is unable to satisfy an inquiry or request at that level, the matter should be referred to either the clinical director (in the case of clinical practice) or the department chairperson (in the case of academic coursework or policy). If the matter in question cannot be resolved at that level, it should be directed to the Committee on Progress and Promotions for Imaging Sciences. This committee will either resolve the matter in question to the student's satisfaction or instruct the student on available mechanisms for appeal as described in the University Catalog and University Student Handbook.

### Comprehensive Examination

At the end of the program, the student will complete an end-of-program competency assessment examination, as well as meet graduation and program completion requirements (see Graduation Requirements). Students who do not successfully complete the examination will receive an Incomplete for the third clinical rotation and will retake the examination prior to the beginning of the next quarter. Those failing the examination twice will be enrolled in a directed Independent Study during the next term for remediation. Those failing the examination on the third attempt will be subject to dismissal from the program. Those students may reapply to the program (see Procedures for Readmission).

### Proctored Exams

The Imaging Sciences Program requires course exams to be proctored and encourages the proctoring to be conducted at Rush University. For those students unable to come to Rush University, an official proctoring site may be approved by the program director. Any upfront proctoring charges are the responsibility of the student and will be reimbursed at the end of the semester term.

### Procedures for Students Seeking Accommodations

Rush University is committed to attracting and educating students who will help to make the health care profession representative of the national population, including

individuals with disabilities. Part of Rush University's mission is to promote diversity among its student population and to provide equal access to its facilities, programs, services and learning opportunities. In keeping with this mission, the University encourages students with disabilities to engage the Office of Student Accessibility Services as soon as they begin their program.

Students should feel free to contact Marie Ferro-Lusk, director of Student Accessibility Services for Rush University, to engage in a confidential conversation about the process for requesting reasonable accommodations in the classroom and clinical settings. Accommodations are not provided retroactively at the University. Additional information can be found online at the Office of Student Accessibility Services webpage ([www.rushu.rush.edu/office-student-accessibility-services](http://www.rushu.rush.edu/office-student-accessibility-services)) or by contacting the Office of Student Accessibility Services.

To respect student's privacy and ensure a thoughtful interactive discussion, students should not make accommodation requests to individual faculty members, lecturers, or course directors. Instead, please contact the Office of Student Accessibility Services:

Marie Ferro-Lusk, MBA, MSW, LSW  
Director, Office of Student Accessibility Services  
(312) 942-5237  
[Marie\\_S\\_Ferro-Lusk@rush.edu](mailto:Marie_S_Ferro-Lusk@rush.edu)

**Further information can be found at:**  
[www.rushu.rush.edu/office-student-accessibility-services](http://www.rushu.rush.edu/office-student-accessibility-services)

### Residency Requirement

Students in the Bachelor of Science in Imaging Sciences must complete their final 36 credit hours of course work in residence at Rush University in order to graduate.

## Imaging Sciences (BS): Graduation Requirements

Degree requirements that must be met include the following:

- Satisfactory completion of all general education coursework as listed
- Completion of each required Imaging Sciences professional course with a grade of C or better
- Cumulative GPA of 2.5 or better
- Successfully complete a comprehensive end-of-program competency assessment

## Imaging Sciences (BS): Curriculum

### Imaging Sciences (BS): Computed Tomography (CT) Track

First Year		Credits
<b>Fall Term</b>		
IS-310	Sectional Anatomy & Pathology	5
IS-314	Pathophysiology	4
IS-337	Computed Tomography Physics	3
IS-453	Computed Tomography Positioning and Protocols	3
<b>Spring Term</b>		
IS-318	Patient Assessment	3
IS-458	Leadership	3
IS-331	Education	3
IS-338	Advanced Radiation Biology	3
<b>Summer Term</b>		
IS-447P	Clinical Practicum I	6
IS-448	Clinical Seminar I	3
IS-325	Pharmacology and Radiologic Contrast Agents	3
Second Year		Credits
<b>Fall Term</b>		
CHS-364	Health Care Systems & Policies	1
IS-463	Research & Statistical Methods	3
IS-457P	Clinical Practicum II	6
IS-449	Clinical Seminar II	3
<b>Spring Term</b>		
IS-468	Clinical Seminar III	3
IS-467P	Clinical Practicum III	6
IS-454	Health Care Ethics & Cultural Competence	4
<b>Program Total:</b>		<b>65</b>

**NOTE:** All professional, leadership and clinical courses require a grade of C or better for the student to continue in the Imaging Sciences degree program course sequence. Failure to complete an Imaging Sciences professional course with a letter grade of C or better will subject the student to review by the Committee on Progress and Promotions and may result in the student being dismissed from the program. Students readmitted to the program at times other than the fall term of the second year will pick up the course sequence as prescribed by the Committee on Progress and Promotions for Imaging Sciences.

### Imaging Sciences (BS): Vascular Interventional Radiography (VIR) Track

First Year		Credits
<b>Fall Term</b>		
IS-310	Sectional Anatomy & Pathology	5
IS-314	Pathophysiology	4
IS-328	Vascular Interventional Technology	6
<b>Spring Term</b>		
IS-318	Patient Assessment	3
IS-331	Education	3
IS-338	Advanced Radiation Biology	3
IS-458	Leadership	3
<b>Summer Term</b>		
IS-448	Clinical Seminar I	3
IS-325	Pharmacology and Radiologic Contrast Agents	3
IS-447P	Clinical Practicum I	6
Second Year		Credits
<b>Fall Term</b>		
CHS-364	Health Care Systems & Policies	1
IS-449	Clinical Seminar II	3
IS-457P	Clinical Practicum II	6
IS-463	Research & Statistical Methods	3
<b>Spring Term</b>		
IS-467P	Clinical Practicum III	6
IS-468	Clinical Seminar III	3
IS-454	Health Care Ethics & Cultural Competence	4
<b>Program Total:</b>		<b>65</b>

**NOTE:** All professional, leadership and clinical courses require a grade of C or better for the student to continue in the Imaging Sciences degree program course sequence. Failure to complete an Imaging Sciences professional course with a letter grade of C or better will subject the student to review by the Committee on Progress and Promotions and may result in the student being dismissed from the program. Students readmitted to the program at times other than the fall term of the second year will pick up the course sequence as prescribed by the Committee on Progress and Promotions for Imaging Sciences.

## Imaging Sciences (BS): Magnetic Resonance Imaging (MRI) Track (ARRT Students)

First Year		Credits
<b>Credit by ARRT Proficiency</b>		
IS-305	Introduction to Imaging Sciences	3
IS-307	Introduction to Patient Care	3
<b>Fall Term</b>		
IS-310	Sectional Anatomy & Pathology	5
IS-463	Research & Statistical Methods	3
IS-314	Pathophysiology	4
<b>Spring Term</b>		
IS-336	MRI Physics	5
IS-318	Patient Assessment	3
IS-444	MRI Positioning and Protocols	4
<b>Summer Term</b>		
IS-447P	Clinical Practicum I	6
IS-448	Clinical Seminar I	3
IS-325	Pharmacology and Radiologic Contrast Agents	3
IS-340	MRI Safety	3
Second Year		Credits
<b>Fall Term</b>		
CHS-364	Health Care Systems & Policies	1
IS-458	Leadership	3
IS-457P	Clinical Practicum II	6
IS-449	Clinical Seminar II	3
<b>Spring Term</b>		
IS-454	Health Care Ethics & Cultural Competence	4
IS-331	Education	3
IS-468	Clinical Seminar III	3
IS-467P	Clinical Practicum III	6
<b>Program Total:</b>		<b>74</b>
(6 credits through AART proficiency)		

**NOTE:** All professional, leadership and clinical courses require a grade of C or better for the student to continue in the Imaging Sciences degree program course sequence. Failure to complete an Imaging Sciences professional course with a letter grade of C or better will subject the student to review by the Committee on Progress and Promotions and may result in the student being dismissed from the program. Students readmitted to the program at times other than the fall term of the second year will pick up the course sequence as prescribed by the Committee on Progress and Promotions for Imaging Sciences.

## Imaging Sciences (BS): Entry-Level Magnetic Resonance Imaging (MRI) Curriculum

The Bachelor of Science in Imaging Sciences' Magnetic Resonance Imaging (MRI) track was originally designed to accommodate applicants licensed in radiography or nuclear medicine. Since then, there has been increased interest from unlicensed, highly qualified applicants. This entry level MRI track adds three additional patient care courses to the existing MRI curriculum. These courses will serve as bridge courses to provide those students who are unlicensed in radiography or nuclear medicine the academic content needed to be successful in the program.

First Year		Credits
<b>Fall Term</b>		
IS-305	Introduction to Imaging Sciences	3
IS-307	Introduction to Patient Care	3
IS-310	Sectional Anatomy & Pathology	5
IS-314	Pathophysiology	4
<b>Spring Term</b>		
IS-336	MRI Physics	5
IS-444	MRI Positioning and Protocols	4
IS-458	Leadership	3
IS-318	Patient Assessment	3
<b>Summer Term</b>		
IS-325	Pharmacology and Radiologic Contrast Agents	3
IS-340	MRI Safety	3
IS-447P	Clinical Practicum I	6
IS-448	Clinical Seminar I	3
Second Year		Credits
<b>Fall Term</b>		
CHS-364	Health Care Systems & Policies	1
IS-457P	Clinical Practicum II	6
IS-449	Clinical Seminar II	3
IS-463	Research & Statistical Methods	3
<b>Spring Term</b>		
IS-467P	Clinical Practicum III	6
IS-468	Clinical Seminar III	3
IS-454	Health Care Ethics & Cultural Competence	4
IS-331	Education	3
<b>Program Total:</b>		<b>74</b>

**NOTE:** All professional, leadership and clinical courses require a grade of C or better for the student to continue in the Imaging Sciences degree program course sequence. Failure to complete an Imaging Sciences professional course with a letter grade of C or better will subject the student to review by the Committee on Progress and Promotions and may result in the student being dismissed from the program. Students readmitted to the program at times other than the fall term of the second year will pick up the course sequence as prescribed by the Committee on Progress and Promotions for Imaging Sciences.

## Vascular Ultrasound and Technology (BS)

### Description of the Profession

The vascular sonographer plays a vital role in the diagnosis and treatment of patients with disorders of arteries and veins. These include atherosclerosis that may result in strokes or gangrene of the extremities, blood clots in veins that may break off and travel to the lungs and possibly cause death, aneurysms that may burst and many other pathologies of the circulatory system. A vascular sonographer is responsible for taking the patient's history, performing the appropriate test using high-tech, noninvasive equipment such as ultrasound, documenting and analyzing the data and images, and preparing a preliminary report for the physician to interpret. The sonographer has extensive, direct interaction with patients, physicians, coworkers and other hospital personnel. The work requires physical, intellectual and communication skills.

## Vascular Ultrasound and Technology (BS): Overview

### Program Description

Students in the Vascular Ultrasound and Technology program are taught by vascular sonographers and physicians who are experienced practitioner-teachers in the field. The basic program is full-time and consists of 20 months (five terms) of study.

The first two terms consist of classroom instruction, student laboratory practice with models and observation of patient examinations. Second-year students primarily perform the vascular examinations learned during the first year on patients under the direction of credentialed and experienced vascular sonographers at two or more vascular laboratories during the year. The clinical sites include university hospitals in Chicago, as well as some community hospitals and out-of-state sites.

During the second year, students also participate in senior lectures and patient case presentations. Students earn a Bachelor of Science degree and are eligible to take the certification examination to become a registered vascular technologist, or RVT, before graduation due to the program's status as an accredited ultrasound program through the Commission on Accreditation of Allied Health Educational Programs.

### Program Accreditation

The program is accredited by the Commission on Accreditation of Allied Health Educational Programs (CAAHEP), through the Joint Review Committee on Education in Diagnostic Medical Sonography (JRC-DMS). CAAHEP information: 25400 U.S. Highway 19 N, Suite 158, Clearwater, FL 33763, www.caahep.org or (727) 210-2350.

## Vascular Ultrasound and Technology (BS): Admission Requirements

- A minimum of 60 semester (90 quarter) hours earned at an accredited college or university is required.
- The minimum cumulative GPA is 2.75 on a 4.0 scale.
- Effective Jan. 1, 2009, all entering students must complete the core general education requirements below with a minimum grade of C in order to be eligible for the Bachelor in Science degree awarded by Rush University.
- Required courses must be completed within the last 10 years.
- Applicants who have taken their prerequisite coursework at a university outside the United States must have their coursework evaluated by the Education Credential Evaluators.
- Three recommendations are required on the recommendation forms provided in the application. These recommendations should be from previous instructors and employers (preferably from two instructors and one employer).

Please email the College of Health Sciences admissions office at [chs\\_admissions@rush.edu](mailto:chs_admissions@rush.edu) if you have a question about which particular courses from your college will cover these prerequisites.

## Requirements Semester Credits Hours/Quarter Credit Hours

Requirements	Semester Credit Hours	Quarter Credit Hours
<b>Two courses in communications</b> English composition is required. The second course may be in composition, speech or other communication topic.	6	9
<b>One course in mathematics</b> College algebra or higher-level math is required. Additional math courses are highly recommended.	3	4
<b>Two courses in life sciences</b> Human anatomy and physiology is required (two semesters are highly recommended.)	6	9
<b>One course in physical sciences</b> General physics is required. Chemistry is highly recommended. Please be sure to fulfill this requirement by taking a physics course that is for science majors.	3	4
<b>One course in social sciences</b> (i.e., government, history, political science, psychology, sociology)	3	4
<b>One course in humanities</b> (i.e. ethics, fine arts, literature, philosophy) Ethics is highly recommended. Performance courses do not meet this requirement.	3	4
<b>Elective courses</b> Courses in communications, computer science, ethics, fine arts, humanities, life sciences, literature, philosophy, physical sciences or social sciences to total 36 semester (56 quarter) hours.	36	56
<b>Total</b>	<b>60</b>	<b>90</b>

### Advanced Placement

Admitted students who have passed the American Registry for Diagnostic Medical Sonography, or ARDMS, Sonography Principles and Instrumentation, or SPI, exam or earned the Registered Vascular Technologist, or RVT, credential may request advanced placement status after acceptance in the program. With proof of passing these credentialing exams, students can qualify to receive credits according to the advanced placement description on the Vascular Ultrasound program webpage: [www.rushu.rush.edu/vastech](http://www.rushu.rush.edu/vastech).

## Vascular Ultrasound and Technology (BS): Technical Standards

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values - I CARE (innovation, collaboration, accountability, respect and excellence) - translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable

culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Vascular Ultrasound and Technology program:

### Acquire Information

- Acquire information from demonstrations and experiences in courses, such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies
- Recognize and assess patient changes in mood, activity, cognition, verbal and non-verbal communication

### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers

- Use and interpret information related to physiologic phenomena generated from diagnostic tools

### Motor

- Possess psychomotor skills necessary to provide or assist in holistic vascular ultrasound and technology care and perform or assist with procedures and treatments
- Practice in a safe manner and appropriately provide vascular ultrasound and technology care and assessment in emergencies, and life support procedures and perform universal precautions against contamination

### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors and all members of the health care team during practicum and other learning experiences
- Accurately elicit information, including a medical history and other information to adequately and effectively evaluate a population's, client's or patient's condition

### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to the diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the vascular ultrasound and technology role
- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment or treatment strategy

### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

### Character

- Demonstrate concern for others
- Integrity, accountability, interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and Vascular Ultrasound and Technology Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program, should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs.

Given the clinical nature of our programs, time may be needed to implement the accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Accessibility Services to learn more about accommodations at Rush University:

Marie Lusk, MBA, MSW, LSW  
 Director, Office of Student Accessibility Services  
 600 S. Paulina St., Suite 901  
 Chicago, IL 60612  
 (312) 942-5237  
 Marie\_Lusk@rush.edu

## Vascular Ultrasound and Technology (BS): Academic Policies

### Good Academic Standing

High academic performance is expected in required courses. Students will be considered in good standing unless placed on academic probation. An annual cumulative grade-point average of at least 2.0 is required to be eligible to continue in the program. A grade of C or higher in the required courses is necessary to be eligible to continue in the program; a grade of D or F may result in dismissal from the program.

The faculty reserves the right to request the withdrawal of a student whose conduct, health or performance demonstrates lack of fitness for continuance in a health profession. Any such student not voluntarily withdrawing will be dismissed from the University.

### Academic Probation

Academic probation is assigned to any student who receives a term grade-point average below 2.0, or whose cumulative GPA falls below 2.0. Students placed on probation have one term to regain good standing. Failure to do so may result in dismissal from the University.

### Clinical Work

A student may not be paid as an employee during clinical credit hours. Also, a student may not count any paid work as an employee for clinical credit hours in the program.

### Blood-Borne Pathogen and Communicable Disease Policy

If a student is exposed to a blood-borne pathogen or communicable disease, he or she should report to the emergency room for care.

### Residency Requirement

Students in the Bachelor of Science in Vascular Ultrasound and Technology must complete their final 36 credit hours of course work in-residence at Rush University in order to graduate.

### Vascular Ultrasound and Technology (BS): Curriculum

1 credit hour compared to contact hours

1 class credit hour = 1 hour/week = 50 minutes

1 lab credit hour = 2 hours/week = 100 minutes

1 clinical credit hour = 40 hours/week

First Year		Credit Hours
<b>Fall Term</b>		
VAS-305	Vascular Anatomy, Physiology, and Pathophysiology	2
VAS-310	Patient Care	2
VAS-320	Ultrasound Physics and Physical Principles I	2
VAS-320L	Physics and Instrumentation Lab	1
VAS-330	Venous Ultrasound Procedures	2
VAS-330L	Venous Ultrasound Procedure Lab	1
VAS-340	Arterial Physiologic and Duplex Procedures	2
VAS-340L	Arterial Physiologic Procedures Lab	1
IPE-502	Interprofessional Patient Centered Teams	Non Credit
<b>Spring Term</b>		
VAS-325	Ultrasound Physics and Physical Principles II	2
VAS-345L	Advanced Duplex Ultrasound Procedures Lab	1
VAS-350	Cerebrovascular Procedures	2
VAS-350L	Cerebrovascular Procedures Lab	1
VAS-360	Abdominal Vascular Procedures Class and Lab	2
VAS-370	General Pathophysiology	3
VAS-380	Professional Practices in Ultrasound	3
VAS-390	Introduction to Research	2
IPE-502	Interprofessional Patient Centered Teams	Non Credit
Second Year		Credit Hours
<b>Summer Term</b>		
VAS-411	Clinical Skills in Vascular Ultrasound I	11
VAS-421	Professional Skills I	1
VAS-441	Senior Topics / Cases I	1
<b>Fall Term</b>		
VAS-412	Clinical Skills Vascular Ultrasound II	7
VAS-422	Professional Skills II	1
VAS-451	Cumulative Clinical Skills in Vascular Ultrasound I	4
VAS-442	Senior Topics / Cases II	1
<b>Spring Term</b>		
VAS-413	Clinical Skills-Vascular Ultrasound III	8
VAS-423	Professional Skills III	1
VAS-452	Cumulative Clinical Skills in Vascular Ultrasound II	4
VAS-443	Senior Topics III/Comprehensive Review Comprehensive Review	1
<b>Program Total</b>		<b>69</b>

### Medical Laboratory Science

#### Medical Laboratory Science

The Department of Medical Laboratory Science currently offers two degree programs: the Master of Science, Medical Laboratory Science program and the Clinical Laboratory Management program. In addition, a Specialist in Blood Bank Technology certificate program is offered online.

#### Philosophy

Our philosophy is that medicine requires today's medical laboratory scientist to be a highly qualified professional who is willing and able to expand and extend their theoretical knowledge and technical skills. The faculty of the Department of Medical Laboratory Science will provide students with the tools and resources necessary to attain the knowledge, skills and attitudes expected of laboratory professionals who work in a dynamic interprofessional environment. The medical laboratory scientist must maintain compassion and empathy and accept the patient's welfare as the highest priority.

#### Certificate

#### Specialist in Blood Bank Technology (CP)

#### Program Overview

The online Specialist in Blood Bank, or SBB, Technology certificate program is intended to meet the needs of experienced medical laboratory scientists seeking advanced knowledge of immunohematology and its related disciplines. The SBB program is designed to prepare students for the SBB certification examination offered by the American Society for Clinical Pathology Board of Certification.

#### Mission Statement

Our mission is to prepare outstanding Specialist in Blood Bank Technology laboratory professionals who will have a spirit of inquiry, a commitment to lifelong learning and service, and who are dedicated to advance the quality and availability of safe blood donations and transfusions.

#### Vision Statement

The Specialist in Blood Bank Technology certificate program will provide a high-quality, distance-learning program for blood banking and transfusion medicine laboratory professions that is recognized among the best in the United States.

### Student Learning Outcomes

At the completion of the Specialist in Blood Bank Technology program, the learner will be able to:

- Develop and evaluate blood bank and transfusion service protocols and procedures, including molecular testing and advanced technologies
- Incorporate current regulations and standards set by various agencies for blood banks and transfusion services into the daily operation of a clinical laboratory
- Identify and apply the most current theoretical principles and serological methods to the practice, supervision and management of blood bank and transfusion services
- Identify and resolve blood bank and transfusion questions, problems and clinical case studies through the application of theoretical principles and serological methods
- Engage in scientific investigations, questions and problems through applied research and appropriate use of resources, such as literature review and internet searches
- Apply basic finance and accounting principles to prepare and analyze budgets and cost justifications
- Develop technical and supervisory competencies in immunohematology, blood component manufacturing and transfusion medicine
- Function as managers, educators, researchers or technical consultants and work as part of the health care team in providing care to patients

#### Program Accreditation

The Rush University SBB certificate program is accredited by the Commission on Accreditation of Allied Health Education Programs, or CAAHEP, upon the recommendation of the AABB Committee on Accreditation of Specialist in Blood Bank Technology Schools.

Commission on Accreditation of Allied Health Education Programs

25400 U.S. Highway 19 N, Suite 158

Clearwater, FL 33763

(727) 210-2350

mail@caahep.org

#### Admissions Requirements

- A baccalaureate degree from a regionally accredited U.S. college or university in medical laboratory, biological or related science (The program will accept a BS/BA degree from a foreign institution for admission into the SBB program, with the following stipulations:

- The foreign transcript must be evaluated by Education Credentials Evaluators and the evaluation must result in a determination that the student has earned a BS/BA that is equivalent to a U.S. BS/BA
- The applicant must satisfy the CHS policy for the Test of English as a Foreign Language, or TOEFL, exam
- A minimum GPA of 3.0 (on a scale of 4.0)
- A minimum GPA of 3.0 (on a scale of 4.0)
- Documentation of MLS (ASCP), MT(ASCP) or CLS (NCA) certification
- Two years of working experience in an accredited blood bank laboratory
- For non-native English speakers: TOEFL scores to satisfy the College of Health Sciences' policy on the TOEFL
- Evaluation by the Educational Credential Evaluators of coursework completed at a non-U.S. college or university
- Official transcripts from each college or university attended
- Three reference letters
- A phone interview

### Graduation Requirements

- Completion of all required coursework with a grade-point average of 2.75 or better
- Completion of all University requirements for graduation

## Specialist in Blood Bank Technology (CP): Technical Standards

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values - I CARE (innovation, collaboration, accountability, respect and excellence) - translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Specialist in Blood Bank Technology program:

### Acquire Information

- Acquire information from demonstrations and experiences in courses such as lecture, group, and physical demonstrations.

- Acquire information from written documents and computer systems (e.g., literature searches & data retrieval).
- Identify information presented in accessible images from paper, slides, videos with audio description, and credible websites.

### Use and Interpret:

- Use and interpret information from assessment techniques/maneuvers/procedures. Use and interpret information generated from diagnostic tools.

### Motor:

- Possess psychomotor skills necessary to perform or assist with day-to-day responsibilities commensurate with the student's discipline.
- Practice in a safe manner and perform universal precautions against contamination.

### Communication:

- Communicate effectively and sensitively with patients and families.
- Communicate effectively with faculty, preceptors, employees, other professionals and all members of the healthcare team during practicum, internship and/or other learning experiences.

### Intellectual ability:

- Measure, calculate reason, analyze, and synthesize data related to diagnosis and treatment of patients and populations.
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the role of a Specialist in Blood Bank Technology.
- Synthesize information, problem solve, and think critically to judge the most appropriate theory, assessment, management or treatment strategy.

### Behavioral:

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances.
- Exercise skills of diplomacy to advocate for patients in need.
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings.

### Character:

- Demonstrate concern for others. Integrity, accountability, interest, and motivation are necessary personal qualities.
- Demonstrate intent and desire to follow the Rush University and Specialist in Blood Bank Technology program Code of Ethics.

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program, should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs.

Given the clinical nature of our programs, time may be needed to implement the accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Accessibility Services to learn more about accommodations at Rush University:

Marie Lusk, MBA, MSW, LSW  
 Director, Office of Student Accessibility Services  
 600 S. Paulina St., Suite 901  
 Chicago, IL 60612  
 (312) 942-5237  
 Marie\_Lusk@rush.edu

Fall Term		Credit Hours
SBB-560	Human Blood Group Systems and Principles & Methods of Antibody Identification	4
SBB-561	Clinical Immunohematology & Transfusion	3
Spring Term		
SBB-562	Blood Procurement and Blood Product Manufacturing	2
SBB-563	Blood Bank/Transfusion Service Operation	3
Summer Term		
SBB-564	SBB Project & Clinical Practicum	3
SBB-565	Blood Bank Comprehensive Review	2
<b>Program Total:</b>		<b>17</b>

## Master of Science Clinical Laboratory Management (MS)

### Mission Statement

Our mission is to prepare highly qualified graduates equipped to perform as clinical laboratory managers in a collaborative, diverse and rapidly changing health care environment. Students will be active participants in learning and developing into a competent, effective and ethical manager. We prepare graduates who have a spirit of inquiry, a commitment to lifelong learning and service, and are dedicated to advance the quality and availability of health care.

### Vision Statement

Our vision is to provide the highest quality clinical laboratory management graduate program that is recognized as the national leader for outstanding preparation of managers entering the clinical laboratories.

## Specialist in Blood Bank Technology (CP): Curriculum

The SBB curriculum is a one-year program consisting of six courses. Students may complete the program in three terms, including a summer term. A part-time option is available.

The SBB curriculum consists of both online lecture/discussion and clinical experience components. Clinical experiences may be arranged at blood centers and hospitals near the student's home. In some cases, the student's place of employment may qualify. Students with prior clinical experience may be eligible to earn credit by proficiency based on a standardized departmental evaluation.

## Clinical Laboratory Management (MS): Program Overview

The online Master of Science degree program in Clinical Laboratory Management, or CLM, is designed for the practicing medical laboratory scientist who desires formal but flexibly delivered graduate education in management. The CLM program emphasizes the following: management principles and quality management, organizational structure and management functions, managerial decision-making and process improvement, human resource management, financial management, compliance and regulatory issues, health care informatics and legal issues in health care. This program provides a practical approach to managing the day-to-day aspects of the clinical laboratory.

Clinical laboratory managers are employable as supervisory personnel in a hospital, reference laboratory, clinical pathology, physician's office laboratory, industry, public

health laboratory, clinical diagnostic company, educational institution or government agency. Students who successfully complete the CLM program and possess two years of full-time acceptable experience in clinical laboratory supervision or management within the last 10 years may apply for the Diplomate in Laboratory Management from the American Society for Clinical Pathology Board of Certification. Students can attend on a part-time or full-time basis.

### Student Learning Outcomes

At the completion of the Clinical Laboratory Management program, the learner will be able to:

- Compare traditional and non-traditional organizational structures and construct an organizational chart
- Create five steps that managers should take to make the best decisions and utilize the tools that are used in a decision-making process
- Summarize the various aspects involved in the management of human resources, such as employee benefits, recruitment, termination and compensation, along with the laws and regulations that affect them
- Construct a performance evaluation mechanism that incorporates the basic components of a job description
- Perform a cost/benefit analysis and justify the implementation of a new laboratory test, automation and/or information system
- Compare and contrast the different forms of reimbursement that are currently used to pay for costs associated with health care with regards to their impact on the clinical laboratory
- Reflect on current management skills, identify areas that need improvement and utilize course resources to become a more effective manager
- Demonstrate effective leadership and effective communication in the clinical laboratory
- Identify issues and trends in clinical laboratory management such that change can be anticipated and accommodated through appropriate planning
- Conduct a research project with faculty/mentor guidance to include applying principles of research design, evaluation of published research studies, accurate interpretation of data and dissemination of results

### Technical Standards

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values — I CARE (innovation, collaboration, accountability, respect and excellence) — translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Clinical Laboratory Management program:

#### Acquire Information

- Acquire information from demonstrations and experiences in courses, such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description, and transparencies
- Recognize and assess patient changes in mood, activity, cognition, verbal, and non-verbal communication.

#### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers
- Use and interpret information related to physiologic phenomena generated from diagnostic tools

#### Motor

- Possess psychomotor skills necessary to provide or assist in holistic clinical laboratory management care and perform or assist with procedures and treatments
- Practice in a safe manner and appropriately provide clinical laboratory management care and assessment in emergencies and life support procedures, and perform universal precautions against contamination

#### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors and all members of the health care team during practicum and other learning experiences
- Accurately elicit information, including a medical history and other information to adequately and effectively evaluate a population's, client's or patient's condition

### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to the diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the clinical laboratory management role
- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment, or treatment strategy

### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

### Character

- Demonstrate concern for others
- Integrity, accountability, interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and Clinical Laboratory Management Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program, should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs.

Given the clinical nature of our programs, time may be needed to implement the accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Accessibility Services to learn more about accommodations at Rush University

Marie Lusk, MBA, MSW, LSW  
Director, Office of Student Accessibility Services  
600 S. Paulina St., Suite 901  
Chicago, IL 60612  
(312) 942-5237  
Marie\_Lusk@rush.edu

## Clinical Laboratory Management (MS): Admission Requirements

- A baccalaureate degree from a regionally accredited U.S. college or university in medical laboratory, biological or related science. The program will accept a BS/BA degree from a foreign institution for admission into the CLM MS and CLMB MS programs with the following stipulations:
  - The foreign transcript must be evaluated by Education Credentials Evaluators and the evaluation must result in a determination that the student has earned a BS/BA that is equivalent to a U.S. BS/BA.
  - The applicant must satisfy the CHS policy for the Test of English as a Foreign Language, or TOEFL, exam
- A minimum GPA of 3.0 (on a scale of 4.0)
- Documentation of MLS (ASCP), MT (ASCP) or comparable certification
- Two years of working experience in an accredited laboratory (specifically blood bank if completing the SBB program)
- For non-native English speakers, Test of English as a Foreign Language, or TOEFL, scores to satisfy the College of Health Sciences' policy on the TOEFL
- Evaluation by the Educational Credential Evaluators of coursework completed at a non-U.S. college or university
- Official transcripts from each college or university attended
- Three reference letters
- A phone interview

## Clinical Laboratory Management (MS): Academic Policies

### Academic Progression

High academic performance in required courses is expected. Students will be considered in good standing at Rush University unless placed on academic probation.

A cumulative grade-point average of at least 3.0 is required in the CLM program. Cumulative grade-point averages will be reviewed after each term. The faculty reserves the right to request the withdrawal of a student whose conduct, health or performance demonstrates lack of fitness for continuance in a health profession. Any such student not voluntarily withdrawing will be dismissed from the University.

## Academic Probation

Academic probation is assigned to any student who receives a term grade-point average below 3.0 or whose cumulative grade-point average falls below 3.0. Students placed on probation have two terms to regain the status of good standing as follows:

- In the term after being placed on probation, the student must attain a term grade-point average of at least 3.0.
- Two terms after being placed on probation, the student must have a cumulative grade-point average above 3.0.
- Failure to make the minimum term grade-point average one term after probation, or the minimum cumulative grade-point average two terms after probation, will result in dismissal from the University.
- Note that the receipt of financial aid may also be impacted when the grade-point average falls below 3.0.

## C, D, F or N Grades

Students may not receive more than two grades of C or lower in the program. Students who receive a third grade of C or lower will be dismissed from the program. Students who receive a D, F or N grade in any course must repeat that course.

If a student is required to repeat a course that is a prerequisite for an advanced course, the advanced course may not be taken until the student successfully passes the prerequisite course. Thus, the student's progression in the program may be affected. Students who receive a second D or F grade will be dismissed from the program.

## Clinical Laboratory Management (MS): Curriculum

First Year		Credit Hours
<b>Fall Term</b>		
CLM-500	Principles of Laboratory Management	3
CLM-501	Evidence Based Research and Applied Statistics	3
CLM-502	Quality Systems & Regulatory Issues	3
<b>Spring Term</b>		
CLM-503	Method Comparison & Process Validation	3
CLM-504	Scientific & Technical Writing	3
CLM-505	Health Care Finance	3
<b>Summer Term</b>		
CLM-506	Management Project I	2
CLM-507	Issues & Practices in Human Resource Management	3
CLM-508	Health Care Informatics	3
Second Year		Credit Hours
<b>Fall Term</b>		
CLM-513	Legal Issues in Health Care	3
CHS-605	Introduction to Ethics in Health Care	2
<b>Spring Term</b>		
CHS-620	Health Care in America	2
CLM-509	Management Project II	2
CLM-510	Management Experience	4
<b>Program Total:</b>		<b>39</b>

## Clinical Laboratory Management (MS) With Specialist in Blood Bank Certificate: Curriculum

Students who are interested in completing the Specialist in Blood Bank Technology (SBB) certificate program along with the Master of Science in Clinical Laboratory Management, (CLM), will start by taking courses in the SBB certificate program followed by CLM courses.

Graduates of a CAAHEP-accredited SBB program other than the Rush program, must have their transcript evaluated to determine the transferability of the SBB courses and assignment of credit. Such students may need to take additional credit to be awarded the Master of Science in CLM.

First Year		Credit Hours
<b>Fall Term</b>		
SBB-560	Human Blood Group Systems and Principles & Methods of Antibody Identification	4
SBB-561	Clinical Immunohematology & Transfusion	3
<b>Spring Term</b>		
SBB-562	Blood Procurement and Blood Product Manufacturing	2
SBB-563	Blood Bank/Transfusion Service Operation	3
<b>Summer Term</b>		
SBB-564	SBB Project & Clinical Practicum	3
SBB-565	Blood Bank Comprehensive Review	2
Second Year		Credit Hours
<b>Fall Term</b>		
CLM-500	Principles of Laboratory Management	3
CLM-501	Evidence Based Research and Applied Statistics	3
CLM-502	Quality Systems & Regulatory Issues	3
<b>Spring Term</b>		
CLM-503	Method Comparison & Process Validation	3
CLM-504	Scientific & Technical Writing	3
CLM-505	Health Care Finance	3
<b>Summer Term</b>		
CLM-507	Issues & Practices in Human Resource Management	3
CLM-508	Health Care Informatics	3
CLM-511	SBB Management Research Project	4
<b>Program Total:</b>		<b>45</b>

**NOTE:** For students completing an SBB from another program, an SBB Course Equivalency Evaluation is required. Professional credits may be granted after completion of this evaluation for students graduating from an AABB/CAAHEP-accredited SBB program outside of Rush University.



## Medical Laboratory Science (MS)

### Program Overview

Medical laboratory scientists are a vital part of the health care team; they perform laboratory tests to analyze body fluids, which aids in the diagnosis, treatment, and monitoring of disease. Seventy percent of healthcare decisions are made based on the results from medical laboratory tests.

The Medical Laboratory Science (MS) degree program combines basic and advanced theoretical knowledge with clinical practice. The curriculum fosters problem-solving and diagnostic abilities. First-year students will learn basic theories and skills in the following areas:

- Clinical chemistry
- Clinical immunology
- Clinical microbiology
- Hematology
- Immunohematology
- Molecular diagnostics

Second-year students complete a clinical practicum at a laboratory within Rush University Medical Center or one of the following affiliated hospitals:

- Ann & Robert H. Lurie Children's Hospital of Chicago
- Northwestern Memorial Hospital
- The University of Chicago Medicine
- University of Illinois Hospital & Health Sciences System

### Mission

Our mission is to prepare highly qualified graduates equipped to perform as laboratory professionals in a collaborative, diverse and rapidly changing health care environment. Students will be active participants in learning and developing into a competent, ethical professional. We prepare graduates who have a spirit of inquiry, a commitment to lifelong learning and service, and who are dedicated to advance the quality and availability of health care.

### Vision

Our vision is to provide the highest quality Medical Laboratory Science programs and curricula that are recognized for excellence in preparation of diverse students who will be leaders in the laboratory profession.

### Student Learning Outcomes

Upon completion of the program, students will be able to conduct the following:

- Demonstrate entry-level competence in medical laboratory science
  - Perform venipuncture with 80 percent success
  - Identify tubes along with the correct order of draw for blood collection and label tubes with 100 percent accuracy
  - Perform, with a high level of competence, analytical tests on body fluids, cells and blood products
  - Identify possible sources of error in pre-analytical, analytical and post-analytical stages of laboratory testing
  - Predict the effect of error in pre-analytical, analytical and post-analytical stages of laboratory testing
  - Prepare a written laboratory report with accurate laboratory test results
- Practice principles of quality control related to laboratory practice
  - Identify appropriate quality control for different laboratory tests
  - Evaluate quality control data and follow a corrective action protocol if necessary
- Apply all safety and governmental regulations and standards
  - Follows established safety practices
- Demonstrate problem-solving and critical thinking skills
  - Formulate a reasonable differential diagnosis from information contained in a patient case description.
  - Evaluate laboratory test results in order to determine their relevance to a case and determine if and what additional tests need to be ordered.
- Demonstrate professional and effective oral and written communication skills.
  - Demonstrate effective oral communication skills in a thorough and creative presentation of a research article that engages the audience and relates the study to current clinical practice.
  - Deliver a clear and well-organized oral defense of the research project.
  - Compose a written manuscript for the research project that conforms to departmental specifications
- Behave in an ethical, culturally-sensitive, and professional manner in a diverse environment.
  - Display courteous and respectful behavior of others
  - Participate as a productive and positive member of a team.

- Describe and practice instructional techniques and terminology
  - Develop and present a lecture to include learning objectives and evaluation.
- Conduct a research project with faculty/mentor guidance
  - Assume a leadership role in conducting research in medical laboratory science
- Create a professional plan which supports ongoing professional career development
  - Construct a portfolio including evidence of professional service and continuing education.
  - Join a professional society as a student member

The Medical Laboratory Science professional program consists of two parts: didactic (classroom learning) and clinical (practice in the medical laboratory). After program completion, graduates should take a national certification examination.

All students entering one of the Medical Laboratory Science degree programs are required to have a criminal background check before matriculating. The student's ability to begin the clinical portion of the program and to complete certification and licensure requirements for entry into the profession may depend on documentation of such things as drug screening and a background check for a history of criminal offenses. A drug screen is required before entering the clinical practice. Students are prohibited from using academic or professional credentials until the satisfactory completion of a degree and appropriate credentials are awarded.

## Medical Laboratory Science (MS): Technical Standards

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values - I CARE (innovation, collaboration, accountability, respect and excellence) - translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Medical Laboratory Science program:

### Acquire Information

- Acquire information from demonstrations and experiences in courses, such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies

### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers/procedures
- Use and interpret information generated from diagnostic tools

### Motor

- Possess psychomotor skills necessary to perform or assist with day-to-day responsibilities commensurate with the student's discipline
- Practice in a safe manner and perform universal precautions against contamination

### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors, employees, other professionals and all members of the health care team during practicum, internship and/or other learning experiences

### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to the diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the medical laboratory science role
- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment, management or treatment strategy

### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

## Character

- Demonstrate concern for others
- Integrity, accountability, interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and Medical Laboratory Science Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require reasonable accommodation to fully engage in the program, should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs.

Given the clinical nature of our programs, time may be needed to create and implement the accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged. Contact the Office of Student Accessibility Services to learn more about accommodations at Rush University:

Marie Lusk, MBA, MSW, LSW  
Director, Office of Student Accessibility Services  
600 S. Paulina St., Suite 901  
Chicago, IL 60612  
(312) 942-5237  
Marie\_Lusk@rush.edu

## Accreditation

The Master of Science program in Medical Laboratory Science is accredited by the National Accrediting Agency for Clinical Laboratory Sciences, or NAACLS:

NAACLS  
5600 N. River Road, Suite 720  
Rosemont, IL 60018  
(847) 939-3597 or (773) 714-8880  
www.naacls.org

## State Licensure Requirements

Some states require medical laboratory scientists to be licensed in the state in order to work in the medical laboratory in that state. Illinois does not license medical laboratory scientists. The Medical Laboratory Science program at Rush University satisfies requirements for certification by the American Society for Clinical Pathology Board of Certification and complies with the standards of accreditation established by the National Accrediting Agency for Clinical Laboratory Sciences, but may not satisfy the licensing requirements for some states. In particular, our program may not satisfy the requirement for clinical training set by the state of California.

Students who intend on moving to a state that has licensure after completion of the program are encouraged to check with the requirements for state licensure before starting the program to make sure the Rush University curriculum will satisfy the requirements for licensure in that state.

## Medical Laboratory Science (MS): Admission Requirements

Applicants must complete the pre-professional requirements prior to enrollment at Rush University. An overall GPA of 3.0 on a 4.0 scale is required. Three letters of recommendation must be submitted with the admission application. Students are accepted at the beginning of the fall term.

In addition to fulfillment of academic requirements, a personal interview conducted by members of the Admission Committee is required for admission. Interviews are behaviorally oriented and take about two hours. Questions focus on commitment, problem-solving ability, team interaction and initiative. Applicants are asked for life experience situations in which these behavioral characteristics are demonstrated. At the time of the interview, each applicant will be asked to write a short essay. Essays are evaluated for grammar, spelling, content and overall quality of written communication.

Applications are ranked on the basis of grades in prerequisite courses, references, interview results and the written essay. The following prerequisites are required for admission:

- A Bachelor of Science degree from an accredited United States college or university documented with official transcripts from each college or university attended. The program will accept a BS/BA degree from a foreign institution for admission with the following stipulations:
  - The foreign transcript must be evaluated by the Education Credentials Evaluators, and the evaluation must result in a determination that the student has earned a BS/BA that is equivalent to a U.S. BS/BA.
  - The applicant must satisfy the College of Health Sciences' policy for the TOEFL exam.
- The following courses are required: 21 quarter/14 semester hours of chemistry (organic, quantitative analysis and biochemistry recommended); 18 quarter/12 semester hours of biology (anatomy and physiology, microbiology and genetics recommended); and 4 quarter/3 semester hours of mathematics (algebra and statistics recommended).
- An overall GPA of 3.0 on a 4.0 scale.

- Personal interview.
- Three letters of recommendation.
- TOEFL/TSE if English is not the applicant's first language.

Students who have not completed all requirements for entry into the Master of Science program may petition the Department of Medical Laboratory Science for consideration for admission. Such requests are handled on a case-by-case basis.

## Hepatitis B Virus Vaccination

Before students are allowed to begin the program, they must have on file documentation that they have either begun or have finished the course of inoculations for the hepatitis B virus vaccine. This documentation must be sent directly to Castle Branch.

If the student has started but not yet finished the series of inoculations at the start of the program, documentation showing completion of the course of inoculations should be provided as soon as possible in order for the student to remain in the program. This information will be reviewed quarterly, and the student will be notified if not in compliance with this requirement. Students who fail to complete the hepatitis B virus vaccination protocol in a timely manner will not be allowed to register for the following term until providing documentation of compliance. In addition, students must submit a hepatitis B virus titer as proof of immunity.

## Tuberculosis Testing

All students must provide the results from tuberculosis screening tests in order to begin the program. Students must be tested annually for tuberculosis and must submit the results to Castle Branch. Failure to comply with this policy can lead to dismissal from the program or prevention of attendance at the clinical site regardless of GPA.

In cases where the tuberculosis screen is positive or contraindicated, students must be screened annually by a physician for symptoms of active tuberculosis and submit documentation that they have been screened and are symptom-free.

## OSHA, HIPAA and Safety Training

Students are required to take all Rush University Medical Center training courses that apply to medical laboratory scientists. These courses must be taken annually and are available through Rush University's LEAP Online system. Students failing to remain current in these training areas will not be allowed in the clinical laboratories.

## Criminal Background Check and Drug Screen

All students entering the Master of Science in Medical Laboratory Science program are required to have a criminal background check before matriculating. The student's ability to begin the clinical portion of the program and to complete certification and licensure requirements for entry into the profession may depend on documentation of such things as drug screening and a background check for a history of criminal offenses. A drug screen is required before entering the clinical practica.

## Medical Laboratory Science (MS): Academic Policies

### Midterm Warning Notices

Students not maintaining a passing-level grade at midterm time will be given a written warning notice. It is the student's responsibility to contact the course instructor immediately to ascertain how the grade can be improved.

### Academic Progression

High academic performance in required courses is expected. Students will be considered in good standing at Rush University unless placed on academic probation.

A cumulative grade-point average of at least 3.0 is required in the graduate programs. Cumulative grade-point averages will be reviewed after each term. No student will be permitted into the clinical rotation portion of the program unless they have the required GPA.

The faculty reserves the right to request the withdrawal of a student whose conduct, health or performance demonstrates lack of fitness for continuance in a health profession. Any such student not voluntarily withdrawing will be dismissed from the University.

### Academic Probation

Academic probation is assigned to any student who receives a term grade-point average below 3.0 or whose cumulative grade-point average falls below 3.0. Students placed on probation have two terms to regain the status of good standing as follows:

- In the next term after being placed on probation, the student must attain a term grade-point average of at least 3.0.
- Two terms after being placed on probation, the student must have a cumulative grade-point average above 3.0.

- Failure to make the minimum term grade-point average one term after probation, or the minimum cumulative grade-point average two terms after probation, will result in dismissal from the University.
- Note that the receipt of financial aid may also be impacted when the grade-point average falls below 3.0.

### C, D, F or N Grades

Graduate students may not receive more than two grades of C or lower in the program. Graduate students who receive a third grade of C or lower will be dismissed from the program. Graduate students who receive a D, F or N grade in any course must repeat that course. If that a student is required to repeat a course that is a prerequisite for an advanced course, the advanced course may not be taken until the student successfully passes the prerequisite course. Thus, the student's progression in the program may be affected. Students who receive a second D or F grade will be dismissed from the program.

All work in practicum courses must be at or above the B grade level. If a student earns a grade less than B in a clinical practicum course, the course must be repeated but may be repeated only once and must be taken within one year, with the new grade replacing the failing grade in the cumulative grade-point average. A second grade below B in any practicum course will result in dismissal from the program.

### Comprehensive Examination

All students must take and pass a comprehensive examination at the end of the second year in order to graduate from the Medical Laboratory Science program. Any student who fails the cumulative examination must retake the examination until passing. A diploma will not be given until the student has passed all sections of the comprehensive examination.

### Graduate Research Projects

See the Graduate Research Bulletin and Department of Medical Laboratory Science policy document for policies and procedures regarding graduate research projects. This bulletin lists specific deadlines for each component of the research project. Failure to meet these deadlines will delay acceptance of the research project and graduation from the program.

### Certification

The comprehensive technical curriculum at Rush University prepares the student to enter the practice of medical

laboratory science. Graduates are eligible to take the medical laboratory scientist's certification examination given by the American Society of Clinical Pathology Board of Certification.

### Service Work Policy

Service work is defined as performing the duties expected of an employee who is paid to perform those tasks as an unpaid student. Service work by students is not required nor permitted by the program. Students are present in the clinical laboratory to learn the operation of the clinical laboratory. While learning, and upon demonstrating proficiency, students may perform clinical tests under the supervision of an instructor who is a certified medical laboratory scientist. As such, students work on actual patient samples but at no time are they expected to, or allowed to, perform service work without pay.

There are numerous work-study jobs available to our students in the clinical laboratories as well as throughout the Medical Center and at our affiliate hospitals. Students are notified of openings as the faculty are informed. Students and supervisors at the clinical site must make a distinction between the student's time in the laboratory as a student learning and not being paid and when the student becomes an employee and is working in the laboratory for pay on tasks they have been specifically trained to perform. Students should not be treated as employees during rotation time, which is typically from 7 a.m. - 3:30 p.m. What students do outside the time at which they are expected to be learning in the clinical laboratory is beyond the scope of control of the program.

### Graduation Requirements

The Master of Science degree in Medical Laboratory Science requires a minimum of 80 term hours. Candidates for the Master of Science degree must earn a 3.0 cumulative grade-point average in all computed upper-division credits taken at Rush University. A minimum of 40 term hours of academic credit shall be earned as a graduate student in academic residence at Rush University. Students must pass IPE courses in order to graduate.

### Educational Activities

The faculty of the Department of Medical Laboratory Science are responsible for providing both the didactic coursework and the clinical experiences necessary for students to successfully complete all degree requirements.

### Research Activities

Faculty members in the Department of Medical Laboratory Science engage in technical and educational research. Areas include biochemistry, education, hematology, hospital administration, immunohematology, immunology, molecular oncology and microbiology. The Department of Medical Laboratory Science supports, and is involved in, the administration of the Continuing Education Program offered to the professional staff of Rush Medical Laboratories.

### Service Activities

The Department of Medical Laboratory Science operates on the practitioner-teacher model. Faculty members are actively involved in the medical laboratories of Rush University Medical Center, maintaining active research, supervisory and clinical positions in their specialty areas. Several faculty members hold joint appointments in Rush Medical College. They provide the laboratory medicine courses for the Rush Medical College curriculum and the graduate College of Nursing curriculum.

## Medical Laboratory Science (MS): Curriculum

The program is built around a core of basic and advanced theoretical knowledge and clinical practice. This combination of both theory and practice enhances the development of skilled, knowledgeable professionals whose flexibility allows them to function at the highest level within the various laboratory settings available to graduates of the program. These areas include primary health care facilities, as well as research, educational and commercial laboratory settings across the country and the world.

Students integrate the theory of medical science with the practice of medical laboratory procedures, learning basic theory and skills in hematology, clinical chemistry, immunology, immunohematology, molecular techniques and clinical microbiology in the first year. They then go on to more advanced courses in those areas in the second year along with courses in management, education and research to prepare students for supervisory, teaching and research positions.

Students apply basic concepts learned in the first year of the program as they rotate through the laboratories of Rush University Medical Center and affiliated hospitals. Currently, affiliate hospitals include the University of Chicago Medicine, Northwestern Memorial Hospital, Ann and Robert H. Lurie

Children's Hospital of Chicago, and the University of Illinois Hospital and Health Sciences System. It is the policy of the Rush University Department of Medical Laboratory Science that all students admitted into the program who complete all first-year didactic courses will be guaranteed an opportunity to complete the clinical practicum at one of our affiliated hospitals.

This rigorous program requires students to achieve a 3.0 GPA on a 4.0 scale in order to graduate. Students will receive hands-on experience in laboratory techniques and will develop a thorough knowledge base in medical laboratory science, providing a firm foundation for development and growth after graduation. The mission of the faculty is to do more than train technical health care personnel, but to also educate medical laboratory professionals who can meet the current and future demands of laboratory medicine. It is expected that students completing the Master of Science degree in Medical Laboratory Science will be the supervisors, managers and educators of the future.

Students in the Master of Science in Medical Laboratory Science program will complete a rigorous research project consisting of identification of the research problem and stating a hypothesis, designing and performing experiments to solve the research problem, interpreting and analyzing the data, as well as presenting the research study in written and oral formats, which may result in publication in a peer-reviewed journal or presentation at a professional society meeting, or both.

Graduates are eligible to take the medical laboratory scientist certification examination given by the American Society of Clinical Pathology Board of Certification. After passing this examination, students become certified as Medical Laboratory Scientists, or MLS (ASCP). Students are not eligible to take the national certification examination until all degree requirements are met. Verification of degree completion is required from the program director by the American Society of Clinical Pathology Board of Certification. Graduation from the program is not contingent on successfully passing a certification examination.

## Medical Laboratory Science (MS): Curriculum

First Year		Credit Hours
<b>Fall Term</b>		
MLS-504	Clinical Chemistry I	4
MLS-514	Hematology I	6
MLS-523	Clinical Immunology	3
MLS-526	Molecular Techniques	3*
IPE-502	Interprofessional Patient Centered Teams	Non Credit
<b>Spring Term</b>		
MLS-505	Clinical Chemistry II	3
MLS-524	Clinical Immunochemistry	4
MLS-534	Clinical Microbiology I	6
MLS-541	Research in MLS I	2
CHS-610	Research Methods in Health Sciences	2*
IPE-502	Interprofessional Patient Centered Teams	Non Credit
<b>Summer Term</b>		
MLS-515	Hematology II	3*
MLS-535	Clinical Microbiology II	3*
MLS-542	Research in MLS II	6
CHS-620	Health Care in America	2*
CHS-605	Introduction to Ethics in Health Care	2*
Second Year		Credit Hours
<b>Fall Term</b>		
MLS-589	Clinical Laboratory Management	2
CHS-601	Introduction to Biostatistics	2
CLM-502	Quality Systems & Regulatory Issues Clinical Practica**	3*
<b>Spring Term</b>		
MLS-588	Comprehensive Review	2
MLS-543	Research in MLS III Clinical Practica**	2
<b>Clinical Practica**</b>		
MLS-586P	Patient Care Techniques	2
MLS-587P	Clinical Practicum-Microbiology	6
MLS-580P	Clinical Practicum-Chemistry	3
MLS-581P	Clinical Practicum-Hematology	3
MLS-584P	Clinical Practicum-Immunochemistry	3
MLS-585P	Clinical Practicum-Education	3
<b>Program Total:</b>		<b>80</b>

\* Courses offered online

\*\* Clinical Practica schedule will be determined by Program Administration

## Occupational Therapy

### Occupational Therapy

#### Mission

Through the use of the practitioner-teacher-investigator model, the Department of Occupational Therapy is committed to excellence in education, service, scholarship and health care delivery while fostering an environment of diversity and inclusion.

### Occupational Therapy: Program Overview

#### Professional Description

The Department of Occupational Therapy offers a graduate program that prepares students for unique contributions to the field of occupational therapy. This professional-level program is designed for people with baccalaureate degrees in other fields who are seeking to become occupational therapists.

#### Philosophy on Educational

Occupational therapists recognize humans as complex beings engaged in and organized around occupations occurring within the social, physical, temporal, cultural, personal and virtual environments (AOTA, 2014; AOTA 2017). When dysfunction or internal or external contexts limit or prevent participation, occupational therapists enable doing in a variety of ways. The practice of occupational therapy involves individuals, groups or organizations, their attributes and the multiple environmental contexts that comprise occupational performance. Occupational therapy interventions are designed to facilitate people to adapt and change in order to improve their engagement in occupational performance across the lifespan.

Rush University Department of Occupational Therapy faculty members fulfill roles as practitioner-teacher and investigator, a combination that infuses the curriculum with contemporary and scholarly perspectives to prepare students to meet the occupational needs of society. Graduate courses and clinical experiences build on students' past knowledge and skills to encourage transformative and integrative learning. The critical self-reflection of the transformative learning process encourages examining, questioning, validating and possibly revising prior knowledge so that new perceptions and meanings may evolve (Cranton, 2006).

Integrative learning expands on this process by facilitating students' ability to connect ideas, concepts and experiences to better adapt to novel and complex issues (Huber & Hutchings, 2004). The end result is a learner who is intellectually flexible to meet the needs of complex clients in a continually changing society. A program based on transformative and integrative learning builds on a student's past, connects it to present activities and predicts a future in which they are competent and capable to respond to the ongoing needs of the profession and the clients we serve.

The curriculum builds towards leadership in professional reasoning and meeting the needs of an increasingly dynamic profession. Self-directed learning and critical thinking using evidence-based research and practice are fostered through faculty mentorship, problem solving, collaborative activities and critical inquiry in the classroom, clinic and community to promote entry-level performance. The individualized doctoral experience establishes a trajectory that enables students to become an emerging leader in their professional practice. Rush occupational therapy graduates are prepared to work in traditional and emerging practice settings but, more importantly, are ethical, flexible, creative, autonomous and informed practitioner-teacher-investigators.

#### Professional Orientation

Since Rush graduate will be prepared to work in a variety of traditional and nontraditional settings, their practice base is the result of broad experiences within the many arenas of occupational therapy. Graduates have the ability to add increasing amounts of depth and validation to their intervention programs as a result of their involvement and experiences with problem-solving approaches to therapy.

Given the combination of breadth and depth of knowledge and experience related to occupational therapy intervention, the primary strength of Rush University graduates will be their ability to function as highly resourceful practitioners. As in the past, and for the foreseeable future, the role of the practitioner is the core of all occupational therapy. The practitioner who is able to base intervention on established fact, use internal and external resources and engage in professional reasoning and problem-solving is the practitioner who will contribute to the credibility and viability of the profession. It is this type of practitioner who is expected to be the product of the Rush program.

Graduates of the program are able to enter the clinical arena competently and confidently, applying their clinical skills and

expanding upon those skills as situations require. This continuous process of assessment and expansion contributes to the personal and professional growth vital to occupational therapists. The role of the clinician, as it is understood in this context, incorporates other major roles of the therapist. As the Rush program is designed, the students have the opportunity to explore the functions of the therapist as an educator, researcher and manager from the practitioner's perspective. The involvement of the student in these other roles is another major strength of the program. The additional roles of educator, manager and researcher cannot be separated from the practitioner's role.

#### Accreditation and Certification

The Rush University Occupational Therapy Doctorate program is fully accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at:

6116 Executive Boulevard, Suite 200  
North Bethesda, MD 20852-4929  
Phone: (301) 652-AOTA  
Fax: (240) 762-5140  
www.acoteonline.org

Graduates will be eligible to sit for the national certification examination for the occupational therapist that is administered by the National Board for Certification in Occupational Therapy, or NBCOT. For information regarding the OTD program's performance on the NBCOT exam, students can go to [www.nbcot.org/en/educators/home#schoolperformance](http://www.nbcot.org/en/educators/home#schoolperformance). Additional information can be obtained from:

NBCOT  
One Bank St. Suite 300  
Gaithersburg, MD 20878  
(301) 990-7979  
www.nbcot.org

After successful completion of this exam, the individual will be an Occupational Therapist, Registered, or OTR. In Illinois, occupational therapists must be licensed in order to practice, and state licensure is based on the results of the NBCOT certification examination. This is true in many other states, but specific requirements for licensure may be determined by contacting individual state licensing boards.

## Master of Science Occupational Therapy Doctorate Occupational Therapy (OTD)

### Admission Requirements

The applicant to the professional program in occupational therapy must have completed or show evidence of the following in order to be considered for admission:

- Completed application through the Occupational Therapy Centralized Application System, or OTCAS.
- A baccalaureate degree from an accredited college or university.
- Minimum grade-point average of a 3.0 on a 4.0 scale excluding your freshman and sophomore years.
- Submit to OTCAS official scores from the GRE graduate school entry exam general test taken within the past five years. A combined score (verbal and quantitative portions) of 302 and a minimum score of 4.0 on the analytical writing sample are required. Please use institution code 7122. Scores below 302 and 4.0 are acceptable if the applicant's grade-point average during the last two years of most recent degree exceeds a 3.0 out of 4.0 scale.
- If applicant's native language is not English, submit Test of English as a Foreign Language, or TOEFL, scores.
- Prerequisite courses with a grade of C or higher) completed prior to matriculation, including statistics, sociology or anthropology, human growth and development (must cover the entire lifespan), abnormal psychology, one additional psychology course, human anatomy (with lab, preferably cadaver) and human physiology (lab preferred). Human anatomy and human physiology must be taken within five years prior to admission to program. Two sequential courses with labs will also satisfy this prerequisite.\*
- Two references from individuals acquainted with the applicant's academic or professional aptitudes. One reference must be from an occupational therapy practitioner, health care provider, teacher, work or volunteer supervisor.
- Experience or familiarity with occupational therapy through observation of occupational therapy practitioners (at least 40 documented hours in at least two settings). In the instance you are unable to shadow at this time, familiarity with OT can also be demonstrated through

submitting documentation of successful completion of the online shadowing experience, plus an additional activity (as suggested below) with accompanying reflection paper. The reflection paper should be no longer than two pages and should articulate how the experience shaped your understanding of occupational therapy. If you choose to complete the online shadowing, upload documentation of completion as well as your reflection paper on OTCAS.

- 1. Online Shadowing Experience:** Password: LucasQU. Please submit the shadowing experience documentation form found on the online shadowing website created by Cheryl Lucas to OTCAS.
- 2. ADDITIONAL ACTIVITIES:**
  - Caretaker Experience:** Describe a time when you were a caretaker and how that shaped your understanding of occupational therapy.
  - Occupation Prerequisite:** Take a course (six-week minimum) in which you learn a novel challenging skill (knitting, karate, etc.). Describe the experience and how it shaped your understanding of occupational therapy.
  - Video Interview:** Interview an occupational therapist and write how the experience shaped your understanding of the profession.
  - Attend a professional association event:** The American Occupational Therapy Association or the Coalition of Occupational Therapy Advocates for Diversity host a number of free events or webinars. Attend an event and write a reflection on how it shaped your understanding of the profession.

*\*All courses must be taken from an accredited college or university. Online classes are acceptable except for anatomy and physiology, which must occur face-to-face. Exams testing out of course work and AP course work are not acceptable for prerequisite requirements. **Note: online courses for anatomy and physiology will be accepted for face-to-face courses that were disrupted due to COVID-19.***

The Admissions Committee will make decisions regarding the acceptability of the applicant to the program. All application materials will be evaluated. Academic and nonacademic factors, including extracurricular activities, job and life experiences will be taken into consideration.

Selected applicants will be required to participate in a faculty interview. Students accepted into the occupational

therapy program must complete a criminal background check. Students who have certain types of information in their criminal background checks may be ineligible to complete fieldwork rotations in specific facilities and may be ineligible for state licensure or national registry or certification.

Students accepted in the occupational therapy program must complete the Rush University required health and immunization history documentation.

Students accepted into the occupational therapy program must submit directly to Rush University prior to matriculation all official transcripts from every college or university attended.

Rush University and the OT program are committed to creating a class environment that mirrors our diverse community, and supports access and inclusion among our students. While all candidates must meet posted minimum admissions criteria, candidates with any of the following factors indicated on their OTCAS application are given additional consideration toward interview and admission to the program, to be reviewed on a case-by-case basis:

- Military veterans
- Persons from an underrepresented minority group in the health care sciences
- Persons from economically disadvantaged backgrounds
- First person to attend a higher education training program
- Recommended graduates from the Rush Bachelor of Science in Health Sciences program

### Application Deadlines

Admission for the entry-level doctorate in Occupational Therapy program is granted for the fall term of each year, which begins early September. Applications through the Occupational Therapy Centralized Application Service become available mid-July.

Completed applications will begin to be reviewed by the admissions committee beginning Oct. 15. The application deadline is Dec. 1. Interviews will be held during the months of November, December and January. Enrollment is limited to 36 students. Applicants are encouraged to apply as early as possible.

## Occupational Therapy (OTD): Program Requirements

### General Program Requirements

The Rush University OTD program is a full-time program, with classes occurring Monday to Friday. However, some evening and weekend hours may be required periodically for the completion of academic and clinical assignments. In these situations students will be given ample notice to arrange their schedules accordingly.

Although the majority of classes are on campus, there are several courses that are online with both asynchronous and synchronous sessions. Technology requirements for those courses and the entire program can be found in the technology section. Collaborative strategies are commonly used in the curriculum, which means that students will need to work with their peers outside of scheduled class periods. Attendance and active participation are important aspects of professional education and critical to professional development. Students are expected to be present for all class, lecture and lab meetings. They are fully responsible for all content presented to them. Excused absences must be requested prior to the class meeting time and must be validated by the instructor. Valid excuses include illness, doctor's instruction, notice of death in family, religious obligations and other special circumstances. Students must email or call the instructor in the case of an absence. The student is responsible for obtaining class information after an absence.

Business casual dress is required for the classroom and scrubs or business casual required for clinical assignments. Caribbean blue scrubs are required for all practicum and fieldwork experiences that occur at Rush University Medical Center. On clinical placements outside of Rush, students will be required to follow each site's dress code.

Students enrolled in the OTD program at Rush University are expected to have the skills necessary to function as an occupational therapist or occupational therapy student in the classroom, laboratory, and clinical/fieldwork settings. The technical standards required of all students enrolled in the OTD program can be found in the technical standards section.

### Graduation Requirements

Once admitted to the Occupational Therapy program, students embark on a journey that entails the accumulation of 107 term hours for graduation. In order to graduate and have

the Occupational Therapy Doctorate conferred, students must meet the following:

- Successfully complete all didactic coursework and fieldwork
- Pass the Department of Occupational Therapy competency exam
- Successfully complete all requirements of the individual doctoral experience and capstone project
- Pass the Rush University Interprofessional Patient Care Teams course (IPE 502)
- Complete a minimum of 16 contact hours of approved professional or community service

In order to be eligible to take the registration exam administered by the National Board for Certification of Occupational Therapists, students must have completed all graduation requirements as documented in official transcripts from Rush University. Students must complete all program requirements within 45 months from the time they begin the program. Students will have 15 months to complete Level II fieldwork after the final day of Semester 5 of the curriculum and 12 months to complete the doctoral experience/project after the last day of the final Level II fieldwork. Any student who expects to go beyond this timeframe must request an exception to the policy in writing to the program director.

### Scholarly Activities

Members of the department are increasingly involved in identifying research projects in occupational therapy. Students participate in one of a variety of faculty-supervised research projects, which may be carried out in one of Rush University Medical Center's occupational therapy clinics, other health care facilities or community organizations. Students are required to formally present their research projects to their research adviser, as well as submit for presentation at local, state and national conferences, and/or publication in a professional journal identified by the faculty research adviser.

Students are also required to independently complete a capstone project that will advance the knowledge of occupational therapy. A plan for dissemination of the project through presentation or publication is required.

### Professional Service Activities

Our faculty are outstanding practitioners/teachers/investigators involved in widely recognized professional and

scholarly activities. They provide a full range of assessment and therapeutic services for a variety of populations. Within the Medical Center there are more than 30 dedicated occupational therapy practitioners working with pediatric, adult and geriatric patients in both inpatient and outpatient settings.

In addition, faculty and clinicians are committed to serving with professional and community organizations. Students participate with faculty and clinicians in health fairs and service activities throughout the year. Students have an opportunity to join the Student Occupational Therapy Association, a service-based organization.

### Technology: Required Software/Online Tools

**Technology:** Required Software/Online Tools

**My Apps:** [myapps.rush.edu](http://myapps.rush.edu)

Students are recommended to use My Apps, which is a virtual desktop where Office software, Rush Email, and secure storage is provided. Visit [rushuportal.learning.rush.edu/faq](http://rushuportal.learning.rush.edu/faq) for more information about the My Apps virtual environment. Students are also able to log into RULearning from MyApps.

**RULearning Login Page:** [rulearning.rush.edu](http://rulearning.rush.edu)

Students are also able to access RULearning via the listed login page.

**Computer Requirements:** Students should have computers with audio/visual capabilities (including the ability to record presentation assignments) and computers should support learning management tools including but not limited to Respondus LockDown Browser and Monitor, Panapto and ExamSoft.

**Microsoft Office Suite: Word, Excel and PowerPoint:**

If you do not already have the Microsoft Office software, you can access the suite through My Apps or download a copy of the Microsoft Office suite at a reduced cost for Windows or Mac users: [rush.onthehub.com](http://rush.onthehub.com)

**Internet Browsers:** Students should have access to more than one browser, such as Internet Explorer, Chrome, Firefox or Safari. All browsers should be the most up-to-date version available.

**Internet Requirements:** Students must have access to a high-speed internet connection when working off campus.

**Adobe Acrobat Reader:** Students should have access to the most up-to-date Adobe Acrobat Reader.

## Occupational Therapy (OTD): Technical Standards

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values — I CARE (innovation, collaboration, accountability, respect and excellence) — translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

The following technical functions are required of all students enrolled in the Occupational Therapy program:

### Acquire Information

- Acquire information from demonstrations and experiences in courses, such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies
- Recognize and assess patient changes in mood, activity, cognition, verbal and non-verbal communication

### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers
- Use and interpret information related to physiologic phenomena generated from diagnostic tools

### Motor

- Possess psychomotor skills necessary to provide or assist in holistic occupational therapy care and perform or assist with procedures and treatments
- Practice in a safe manner and appropriately provide occupational therapy care and assessment in emergencies and life support procedures, and perform universal precautions against contamination

### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors and all members of the health care team during practicum and other learning experiences

- Accurately elicit information, including a medical history and other information to adequately and effectively evaluate a population's, client's or patient's condition

### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to the diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the occupational therapy role
- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment or treatment strategy

### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

### Character

- Demonstrate concern for others
- Integrity, accountability, interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and Occupational Therapy Code of Ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine that they require reasonable accommodation to fully engage in the program should contact the Office of Student Accessibility Services to confidentially discuss their accommodations needs. Given the clinical nature of our programs, time may be needed to create and implement the accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged. To learn more about accommodations at Rush University please contact:

Marie Lusk, MBA, MSW, LSW  
Director, Office of Student Accessibility Services  
Rush University  
600 S. Paulina St. AAC 901  
Chicago, IL 60612  
(773) 942-5237  
[Marie\\_Lusk@rush.edu](mailto:Marie_Lusk@rush.edu)  
[www.rushu.rush.edu/office-student-accessibility-services](http://www.rushu.rush.edu/office-student-accessibility-services)

## Occupational Therapy (OTD): Academic Policies

### Academic Progression

Students will progress through the program following the curriculum outline provided.

The faculty reserves the right to dismiss any student whose conduct, health or performance demonstrates lack of fitness for continuance in a health profession as identified by the faculty member and the Rush University Code of Conduct. Any such student not voluntarily withdrawing will be dismissed from the University. Only grades of A, B, C or P may fulfill degree requirements in all non-elective courses listed in the curriculum outline.

Students will be considered in good standing at Rush University unless placed on academic probation. Academic probation is assigned to any student who earns a term grade-point average of 2.99 and below. Full-time students placed on probation must earn a cumulative grade-point average of 3.0 or above by the end of the next term. Students who fail to meet minimum cumulative GPA requirements within the time frame specified above will be automatically dismissed from the program.

Students placed on academic probation for the first time must meet with their adviser and establish an action plan prior to the beginning of the next term. Students placed on probation a second time must petition and meet with the Student Performance and Academic Review Committee, or SPARC, and provide an action plan that is acceptable to SPARC in order to continue in the program. The student will also be responsible to meet on a regular basis with their adviser to monitor the progress of the aforementioned action plan's implementation. A student who is placed on probation for a third time for didactic course work will automatically be dismissed from the program.

A student receiving a grade D, F, N, WF or WN in a required course must repeat the course at the next academic offering and earn at least a B (or Pass for pass-no-pass courses) to remain in the program. Only one D, F, N or WN is allowed for the entire program. If a student receives a second D, F, N, WF or WN at any other time in the program, the student will be dismissed from the program.

Students must pass the occupational therapy competency exam (OCC 820 Capstone Competencies) prior to beginning the Independent Doctoral Experience course. Students who do not pass the exam will need to repeat the course. Completion of the doctoral experience and doctoral capstone project will be delayed.

## Occupational Therapy (OTD): Curriculum

First Year		Credit Hours
<b>Fall Term</b>		
OCC-600	Introduction to Occupation, Health and Wellness	3
OCC-608	Introduction to Clinical Practice	2
OCC-520	Health Conditions	4
OCC-501	Human Structure and Principles of Movement	3
OCC-501L	Functional Anatomy with Lab	2
IPE-502	Interprofessional Patient Centered Teams	Non Credit
<b>Spring Term</b>		
CHS-601	Introduction to Biostatistics	2
OCC-643	Health Care Systems	3
CHS-605	Introduction to Ethics in Healthcare	2
OCC-620	Foundational Theories in OT	3
OCC-576	Sociocultural Aspects of Care	2
OCC-579	Research Methods	3
OCC-609	Occupational Performance and Ability	3
IPE-502	Interprofessional Patient Centered Teams	Non Credit
<b>Summer Term</b>		
OCC-625	Functional Neuroscience & Cognition	4
OCC-607	Psychosocial Aspects of Care	3
OCC-610	Occupational Therapy Process	2
OCC-615	Developmental Disabilities I	3
OCC-617	Clinical Practice Skills/Fieldwork 1-A	2
OCC-683	Evidence-Based Practice Series I	1

Second Year		Credit Hours
<b>Fall Term</b>		
OCC-612	Physical Disabilities I	4
OCC-614	Mental Health Practice	4
OCC-618	Clinical Practice Skills/Fieldwork 1-B	2
OCC-630	Program Development	2
OCC-684	Evidence-Based Practice Series II	1
<b>Spring Term</b>		
OCC-685	Evidence-Based Practice Series III	2
OCC-810	Professional Reasoning and Doctorate Experience I	2
OCC-613	Physical Disabilities II	4
OCC-616	Developmental Disabilities II	3
<b>Summer Term</b>		
OCC-644	Leadership and Advocacy	2
OCC-795	Advanced Fieldwork I	9
OCC-811	Professional Reasoning & Doctorate Experience II	1
<b>Third Year</b>		<b>Credit Hours</b>
<b>Fall Term</b>		
OCC-820	Capstone Competencies	1
OCC-797	Advanced Fieldwork II	9
OCC-812	Professional Reasoning and Doctorate Experience III	1
<b>Spring Term</b>		
OCC-825	Individualized Doctoral Experiences	12
OCC-828	Capstone Dissemination	1
<b>Program Total:</b>		<b>107</b>

## Physician Assistant Studies

### Master of Science Physician Assistant Studies (MS)

#### Program Overview

The Master of Science in Physician Assistant Studies, or PA, program is designed to provide students with an outstanding education in preparation for careers as physician assistants or PAs, in general and specialty practice settings.

The innovative 30-month curriculum uses the extensive resources available at Rush University to provide its students with an excellent training experience.

- The 12-month didactic phase includes lecture, small group discussion and case-based training to prepare students for clinical rotations.
- The unique 18-month clinical training prepares students to practice as primary care providers, while providing a

one-of-a-kind immersion experience in an advanced clinical practice. Current areas for advanced clinical training include orthopedics, cardiothoracic surgery, vascular surgery, emergency medicine, internal medicine, pulmonary and critical care medicine, interventional radiology, urology, neurosurgery, geriatrics, physical medicine and rehabilitation, primary care and pediatrics.

#### Mission

The Rush University PA Program mission is to educate advanced health care providers to practice evidence-based medicine with competence, professionalism and compassion driven by academic excellence and service to diverse communities.

#### Vision

The Rush University PA Program strives to be a nationally recognized leader in educating advanced practice PAs to assume leadership roles in clinical and professional practice.

## Goals

The following are the goals of the Rush University PA Studies program:

- Prepare PAs to practice interprofessional, patient-centered care in diverse communities
- Promote leadership, service, and advocacy to the profession
- Provide enhanced training opportunities to students in various areas of clinical practice
- Prepare PAs who use evidence-based methods to plan, develop and deliver high quality, cost-effective health care services
- Promote an environment of inclusion and cultural humility

## Physician Assistant Studies (MS): Admission Requirements

Admission to the PA Program is competitive. Student selection is based on various factors, such as overall strength of academic performance, type and quality of prior health care experience, including experience working with or shadowing PAs, and interpersonal communication skills.

The program is rigorous and academic preparedness will be assessed based on general and science course grade-point average, prerequisite course work grade-point average, coursework completed prior to application, and performance on the GRE graduate school entry exam.

Requirements for admission into the PA Program include the following:

- A bachelor's degree from an accredited college or university prior to matriculation into the program.
- A minimum GPA of 3.0 on a 4.0 scale is required for both the total GPA and science GPA. GPAs greater than 3.3 each for total and science are considered competitive; GPAs greater than 3.5 each for total and science is considered highly competitive.
- GRE graduate school entry exam scores taken within five years prior to application submission. A minimal combined verbal and quantitative score of 1,000, or 302 in the new scoring system, is required for interview and admission consideration.
  - A combined score of 1,200 and above, or 309 in the new scoring system, is considered competitive; a combined score of more than 1,290, or 314 in the new scoring system, is highly competitive.
  - The score must be attained at a single seating of the exam. If you take the GRE more than once, batched and partial scores are not accepted.

- Original copies of your GRE scores must be sent directly to Rush University. **The PA Program GRE code is: 0962.**
- Documented hands-on, direct patient contact experience in a health care setting, accrued within seven years of application submission. Experience working with or shadowing PAs is required. A minimum of 1,000 hours direct patient contact experience is required at the time of application submission. Greater than 1,500 hours is competitive, and greater than 2,500 hours is considered highly competitive.
- A completed application submitted to the Central Application Service for Physician Assistants, or CASPA.
  - A supplemental application and \$40 fee is required only if you are invited to interview at the program. Information regarding this will be provided with an interview invitation.
- An on-campus interview with members of the PA Program faculty and admissions committee.
- All applicants must meet the minimum requirements to perform the essential functions of a PA. See the Technical Standards section for more information.
- Admission is contingent upon successful completion of a health assessment, criminal background check and drug screening processes prior to matriculation. Information regarding this requirement is discussed during interviews.
- Applicants with coursework or a bachelor's degree conferred outside of the United States must submit a course equivalence evaluation by either Education Credentials Evaluators or World Education Services.
- Scores from the Test of English as a Foreign Language (TOEFL) if English is not your native language.
- Attendance in the program is on a full-time basis only. Students entering the PA Program must complete the curriculum in its entirety. No advanced-standing or transfer credits will be awarded, regardless of previous professional or academic experience.
- The PA Program admits students into the class on a rolling admission basis. This means that at each interview session, offers are made to fill seats in the class. Under a rolling admissions process, it is possible to fill all the seats in the class before interviews are done. It is to the applicant's advantage to submit all application materials as early as possible.
- Due to the competitive nature of the application process, meeting posted admission criteria to the program does not guarantee an interview offer for the program.

### Additional Factors for Admissions Consideration

Rush University and the PA Program are committed creating

a class environment that mirrors our diverse community and supports access and inclusion among our students. While all candidates must meet posted minimum admissions criteria, candidates with any of the following factors indicated on their CASPA application are given additional consideration toward admission to the program, to be reviewed on a case by case basis:

- Military veterans
- Persons from an underrepresented minority group in the health care sciences
- Persons from economically disadvantaged backgrounds
- First person to attend a higher education training program
- Recommended graduates from the Rush Bachelor of Science in Health Sciences program

### Program Application

The application cycle is open from the end of April to Oct. 1 of each year.

Applications must be submitted online via CASPA at portal.caspaonline.org. CASPA application requires the following:

- Submission of official transcripts for all college coursework completed
- Three letters of recommendation. It is preferred that at least one of the letters be from a PA, physician or other health care provider who is familiar with the PA profession
- A personal statement
- Payment of an application fee as outlined by CASPA

### Required Prerequisites

The following courses must be completed prior to matriculation into the program:

- Human anatomy and human physiology or a two-course sequence combined human anatomy and physiology course
- Biochemistry
- Microbiology (with lab preferred but not required)
- Psychology or equivalent course work in the behavioral sciences
- Statistics

It is strongly recommended that all courses be taken within seven years prior to application to the program. Advanced placement or CLEP courses are not accepted toward meeting prerequisite course requirements. Candidates must have at least four of the required courses completed at the time of application submission. Course grades of C or better are mandatory for all prerequisite courses. Courses with grades of B or better are considered competitive for admission consideration.

The following prerequisite courses must be taken within the past seven years prior to application to the program:

- Human anatomy
- Human physiology
- Biochemistry
- Microbiology

## Physician Assistant Studies (MS): Technical Standards

The following are the universal technical standards that apply to all clinical training students in the Rush University College of Health Sciences at Rush University. These standards apply to all students enrolled in the PA Program.

Rush University is committed to diversity and to attracting and educating students who will make the population of health care professionals representative of the national population.

Our core values — I CARE (innovation, collaboration, accountability, respect and excellence) — translate into our work with all students, including those with disabilities. Rush actively collaborates with students to develop innovative ways to ensure accessibility and creates a respectful, accountable culture through our confidential and specialized disability support. Rush is committed to excellence in accessibility; we encourage students with disabilities to disclose and seek accommodations.

### Acquire Information

- Acquire information from demonstrations and experiences in courses, such as lecture, group and physical demonstrations
- Acquire information from written documents and computer systems (e.g., literature searches and data retrieval)
- Identify information presented in accessible images from paper, slides, videos with audio description and transparencies
- Recognize and assess patient changes in mood, activity, cognition, verbal and non-verbal communication

### Use and Interpret

- Use and interpret information from assessment techniques/maneuvers
- Use and interpret information related to physiologic phenomena generated from diagnostic tools

### Motor

- Possess psychomotor skills necessary to provide or assist in holistic PA care and perform or assist with procedures and treatments
- Practice in a safe manner and appropriately provide PA care and assessment in emergencies and life support procedures and perform universal precautions against contamination



### Communication

- Communicate effectively and sensitively with patients and families
- Communicate effectively and sensitively with patients and families
- Communicate effectively with faculty, preceptors and all members of the health care team during practicum and other learning experiences
- Accurately elicit information, including a medical history and other information to adequately and effectively evaluate a population's, client's or patient's condition

### Intellectual Ability

- Measure, calculate, reason, analyze and synthesize data related to diagnosis and treatment of patients and populations
- Exercise proper judgment and complete responsibilities in a timely and accurate manner according to the PA role
- Synthesize information, problem-solve and think critically to judge the most appropriate theory, assessment or treatment strategy

### Behavioral

- Maintain mature, sensitive, effective relationships with clients/patients, families, students, faculty, staff, preceptors and other professionals under all circumstances
- Exercise skills of diplomacy to advocate for patients in need
- Possess emotional stability to function under stress and adapt to rapidly changing environments inherent to the classroom and practice settings

### Character

- Demonstration of concern for others, integrity, accountability, interest and motivation are necessary personal qualities
- Demonstrate intent and desire to follow the Rush University and Physician Assistant code of ethics

The technical standards delineated above must be met with or without accommodation. Students who, after review of the technical standards, determine they require accommodation to fully engage in the program, should contact the Office of Student Accessibility Services at ([www.rushu.rush.edu/office-student-accessibility-services](http://www.rushu.rush.edu/office-student-accessibility-services)) to confidentially discuss their accommodations needs. Given the clinical nature of our programs, time may be needed to implement accommodations. Accommodations are never retroactive; therefore, timely requests are essential and encouraged.

## Physician Assistant Studies (MS): Curriculum

Phase I: Coursework		
Summer Term		Credits Hours
PHA-510	Human Physiology	2
PHA-511	Human Anatomy	4
PHA-512	History and Physical Examination	3
PHA-513	PA Professionalism & Practice I	2
PHA-514	Clinical Medicine I	4
PHA-515	Diagnostic Methods	1
Fall Term		Credit Hours
PHA-520	Principles of Clinical Pharmacology I	3
PHA-521	Research and Statistics	2
PHA-522	Diagnostic Reasoning I	2
PHA-523	Professionalism & Practice II	2
PHA-524	Clinical Medicine II	6
PHA-525	Principles of Advanced Practice I	2
Spring Term		Credit Hours
PHA-530	Principles of Clinical Pharmacology II	3
PHA-532	Diagnostic Reasoning II	2
PHA-533	Professionalism & Practice III	2
PHA-534	Clinical Medicine III	6
PHA-535	Principles of Advanced Practice II	2
PHA-536	Emergency & Surgical Medicine	2
Phase II: Clinical Rotation Courses		
PHA-581	Family Medicine	4
PHA-582	Internal Medicine I	4
PHA-583	Internal Medicine II	4
PHA-584	General Surgery I	4
PHA-585	General Surgery II	4
PHA-586	Women's Health	4
PHA-587	Pediatrics	4
PHA-588	Behavioral Health	4
PHA-589	Long-Term Care/Geriatrics	4
PHA-590	Emergency Medicine	4
PHA-591	Elective I	4
PHA-592	Elective Rotation II	4
Phase III: Advanced Clinical Rotation Courses		
Summer Term		Credits Hours
PHA-593	Advanced Clinical Practice I	15
PHA-595	Master's Research Project I	1
Fall Term		Credit Hours
PHA-594	Advanced Clinical Practice II	15
PHA-596	Master's Research Project II	1
<b>Program Total:</b>		<b>130</b>



Rush University

The Graduate College

## Welcome to the Graduate College



At Rush University Graduate College, we have created an environment that fosters innovation through an interdisciplinary approach to scientific discovery. Our students not only learn leading-edge scientific techniques but also, perhaps more importantly, critical thinking and analytical problem-solving skills that will serve them no matter their next steps after earning their MS or PhD. Students who select the Graduate College as their home for graduate education are committed to scientific advancement through research and will become next-generation thought leaders. Through rigorous training, customized curricula, and hands-on experience, students will become alumni who have strong connections and networks and are well-prepared to enter the scientific and clinical workforce where they will solve complex problems and lead organizations that will chart the future.

**Strong networks.** Rush University has a network of over 16,000 alumni throughout the world. They work in academic and corporate settings, successfully compete for funding, train the next generation of researchers and educators, and make discoveries that enhance human health. Thus, we are building a strong community with robust student-alumni relations that will enable current students to access Rush's Alumni Association programming to advance their career and professional development while allowing alumni to tap into our stream of newly minted graduates poised to accelerate progress.

**Customized and personal.** The Graduate College offers doctoral and master's programs that allow you to choose the track and coursework that complements your research interests. Small class sizes give you a greater opportunity to ask questions, participate in discussions, and provide curricular flexibility based on the needs and desires of each class. You will really get to know the faculty and be exposed to their research while learning about their experiences and networks in clinical and basic biomedical research settings.

**Outcomes.** The success of the Graduate College's approach to the training of its students can be measured by alumni outcomes. Over 60 percent of Graduate College's doctoral alumni remain in research or research-related careers. Further, more than 90 percent of the Graduate College's master's graduates have entered professional school, doctoral programs, or found employment in a research career within three months of graduation.

At Rush Graduate College we have great educational programs, engaging faculty, and leading-edge research. I hope you will consider joining an MS or PhD program at the Graduate College where you can be a part of the solution to clinical and biomedical problems that will ultimately improve human health. Contact us to learn more about the education and programs at the Graduate College.

Andrew Bean, PhD  
Dean

RUSH UNIVERSITY  
GRADUATE COLLEGE

## The Graduate College: Mission, Vision and Philosophy

### Mission

The mission of the Graduate College at Rush University is to enhance the intellectual life of Rush University by providing students with expertise in their chosen fields, creativity to cross disciplinary boundaries, courage to challenge convention and confidence to ask unexpected questions and articulate new perspectives. The Graduate College provides a fertile environment where trainees refine their critical and analytical thinking and problem-solving skills, embrace a collaborative approach to problem solving, address critical biomedical problems strategically and advance medical science. To this end, the Graduate College will: 1) collaborate with our partners at other Rush colleges to provide broadly based graduate education that supports the research and scholarship of students, faculty and the University as a whole; 2) foster an inclusive environment to ensure the educational benefit that can only come from diversity across the academic community; 3) emphasize the critical role of graduate education to the mission of the research university; 4) prepare our graduates for success in competitive national and global economies by providing contemporary professional development and career planning resources.

### Vision

The Graduate College provides strategic leadership and administrative and academic structures within which a diverse group of students and faculty find the support and encouragement to advance academic excellence through innovative scholarship, research, teaching and programming.

### Philosophy

*Rush University provides outstanding health sciences education and conducts impactful research in a culture of inclusion, focused on the promotion and preservation of the health and well-being of our diverse communities.*

The Graduate College was established in 1981 and provides opportunities for students to work with nationally recognized faculty while earning graduate degrees in basic and clinical sciences. The Graduate College curricula is interdisciplinary. All graduate students participate in a common, integrated first year curriculum that explores the shared foundations of biomedical sciences. This approach leverages student interactions, interests across biomedical sciences, team-based research training.

## The Graduate College: Program Organization

### Integrated Biomedical Sciences Doctor of Philosophy Program

The PhD in integrated biomedical sciences is designed to educate science professionals for leadership in research and academic positions, as well as to provide career path education relevant to their specialized fields. Since collaborative interdisciplinary teams of scientists perform most biomedical research, our doctoral program emphasizes an integrated interdisciplinary approach to biomedical research. Graduates of this program will perform high-quality, impactful biomedical research at colleges and universities, government agencies, hospitals and nonprofit agencies and in industry. Students in the program will work with faculty and scientists to generate new knowledge in the fields of biomedicine using sophisticated research methods. As a part of the program, students are required to demonstrate their knowledge of core and concentration-specific courses and pass a comprehensive preliminary examination based on their research proposal. They will design and conduct research that culminates in a dissertation, and they will disseminate their scientific findings through scholarly publications and presentations.

### Nursing Science Doctor of Philosophy Program

The Nursing Science Doctor of Philosophy Program prepares students to be a clinical researcher who advances the nursing care of individuals and communities through scientific discovery.

This program will help students do the following:

- Integrate knowledge from biological, behavioral and clinical sciences
- Perform clinical research that contributes to the scientific basis of care provided to individuals across the lifespan, and in any setting where care is provided
- Gain the leadership skills necessary to serve as a senior academician and influence health care systems and policy
- Develop and submit manuscripts for publication

A three-year accelerated plan of study is available to qualified students. Accelerated students are given full-tuition support and a stipend.

Learn about additional scholarships and research support for PhD students here.

This program is delivered by the College of Nursing faculty in conjunction with the Graduate College. The full description of the doctorate is provided at [www.rushu.rush.edu/college-nursing/programs-admissions/nursing-science-phd](http://www.rushu.rush.edu/college-nursing/programs-admissions/nursing-science-phd)

### Health Sciences Doctor of Philosophy Program

The program of study for the Doctor of Philosophy degree involves a rigorous curriculum that emphasizes fundamentals and advanced concepts in leadership, education, research and professional development. The guiding principal of the curricular design is three-fold and presented in a continuum of foundations (theory), application (real world problem resolution) and vision (synthesis and creative/critical forward thinking regarding the future trajectory of health care). First, an epistemological framework is established associated with leadership, education and research. The curriculum then challenges the learners to address real-world applications through focused seminar courses and learner-centered projects. The curriculum culminates with challenging the learner's axiological considerations through research, demonstration projects, dissertation focus, ownership of learning and philosophical challenges to the status quo.

Transition to doctoral candidate occurs upon successfully completing all core courses, passing a comprehensive qualifying examination and approval of dissertation proposal. Doctoral candidates conduct research and publish under the guidance and supervision of a research mentor.

#### Program Objectives

To produce scholars who will:

1. Generate new knowledge and innovative applications through research
2. Disseminate knowledge through education and publications
3. Shape the future of health sciences through leadership and cooperation
4. Produce scholars who will uphold the highest ideals of health sciences

This program is delivered by the College of Health Sciences faculty in conjunction with the Graduate College. The full description of the doctorate is provided at [www.rushu.rush.edu/college-health-sciences/academic-programs/doctor-philosophy-health-sciences](http://www.rushu.rush.edu/college-health-sciences/academic-programs/doctor-philosophy-health-sciences).

### Integrated Biomedical Sciences Master's of Science Program

The MS in Integrated Biomedical Sciences (IBS) is a research master's degree that will introduce students to the scientific approach and provide an opportunity for the student to pursue a directed research project. Graduates will be prepared to perform advanced biomedical research at colleges and universities, government agencies, hospitals, non-profit agencies and industry. Our integrated program emphasizes an interdisciplinary approach to biomedical education and research. Students in the program will work with faculty to generate new knowledge in biomedicine using sophisticated research methods and approaches.

Students can choose research experiences and advisers from among the many qualified faculty from Rush University Medical Center's academic and clinical departments.

### Biotechnology Master's of Science Program

The Master of Science in Biotechnology (BTN) is a non-thesis research and laboratory training program designed to prepare the student for careers in research-related fields, education and/or graduate or professional school. This flexible degree program is designed for students with earned Bachelor's degrees that are interested in furthering their scientific education. The customized curriculum helps students meet their career and professional goals. There are three tracks in the Program including: 1. Pre-professional, 2. Research and 3. Education. Students will participate in hands-on laboratory courses designed to cover the common and most important techniques and methods employed in research today. The program director, in consultation with the Graduate College dean, has oversight of the program and its faculty. The program director is responsible for the implementation of program goals and assessment of student learning outcomes.

### Clinical Research Master's of Science Program

The Master of Science in Clinical Research (MSCR) is a rigorous program that meets the needs of health professionals engaged in the full spectrum of patient-oriented research. This flexible and personalized degree program is designed for a variety of students including: those who seek to understand, and/or conduct, supervise, co-ordinate varied aspects of clinical research (including clinical trials). These students may be physicians, researchers and research study personnel (research nurses; study coordinators; managers in clinical research and site management organizations (CROs and SROs); and bachelors prepared individuals with interests in applied clinical research in the pharmaceutical, biotechnology and medical device industries.

## The Graduate College: Admission Requirements

The Graduate College prepares students for Master's of Science and Doctor of Philosophy degrees. An undergraduate record of scholastic excellence is an important background for the Graduate College experience. The process of application review includes a search for evidence of creativity and scholarly potential in the applicant. The Graduate College also values diversity of thought, ability, expertise, and background, and therefore seeks to admit thought leaders that will solve complex problems related to human health. Thus, the Graduate College uses the following guidelines to evaluate candidates for admission.

### Application Deadlines:

#### Doctor of Philosophy Programs

- Health Sciences (Jan. 1)
- Integrated Biomedical Sciences (Jan. 4)
- Nursing Science (Jan. 2)

#### Master's of Science Programs

- Biotechnology (Rolling admission for fall and spring terms)
- Clinical Research (Rolling admission for fall and spring terms)
- Integrated Biomedical Sciences (May 1)

International students may have earlier deadlines. Please check with the Graduate College Admissions Office early in the application process.

1. **Application form** - The application must be submitted by the deadline.
2. **Statement of purpose** - Describes the past and current research interests as they pertain to graduate school in the biomedical sciences.
3. **Curriculum vitae** - Includes academic honors, awards received in college and/or graduate school, employment history, internships, summer research programs, education history, etc.
4. **Three letters of recommendation** - Recommendation letters should come from professional or academic sources. Letters must be on official letterhead and uploaded by the online application by recommenders.

5. **Standardized test scores** - Applicants applying to the Doctor of Philosophy and Master's of Science programs in Integrated Biomedical Sciences are required to submit GRE scores. MCAT, DAT, PCAT, or USMLE scores are accepted in lieu of GRE for Biotechnology and Clinical Research master's programs. Applicants with an international medical degree must submit USMLE Step 1 and Step 2 scores.
6. **Official transcript(s)** - Applicants must hold a bachelor's degree from an accredited institution. Students with an international degree must submit official transcripts and a course-by-course evaluation from Educational Credential Evaluators (ECE). FL scores must be submitted for international applicants who have received a diploma from a university at which English is not the language of instruction.
7. **TOEFL scores** - TOEFL scores must be submitted for international applicants who have received a diploma from a university at which English is not the language of instruction. TOEFL scores will be waived for non-native English speakers who have completed a bachelor's degree or higher from a US accredited institution and have demonstrated language proficiency supported by the interview.
8. **An interview** with Graduate College faculty is required for Integrated Biomedical Sciences Doctor of Philosophy candidates.
9. **Applicant fee** - A \$50 application fee is required to submit the application.

**Non-degree Students:** Non-degree students may take selected courses but are not candidates for advanced degrees. Upon approval by a course director, any individual may audit a course.

## The Graduate College: Shared Curricula

Some Graduate College courses are shared by more than one program. The curriculum is designed to provide basic knowledge base deemed necessary to become successful in science. The Graduate College shared curricula elements provide introductory training in molecular genetics, genomics, cellular biochemistry, cell biology and tissue biology. Students will learn basic theories underlying modern scientific techniques. Courses in ethics, scientific writing and basic statistics are key components of the curriculum and can be selected from the list below.

The following courses comprise the Graduate College shared curriculum:

- GCC - 501 Molecular Biology: Genome to Proteome
- GCC - 502 Cellular Biochemistry: Proteins, Transport and Signaling
- GCC - 503 Functional Cell Biology
- GCC - 504 Functional Tissue Biology
- GCC - 505 Techniques in Biomedical Sciences
- GCC - 506 Research Ethics
- GCC - 546 Principles of Biostatistics I
- GCC - 547 Principles of Biostatistics II
- GCC - 548 Bioinformatics I
- GCC - 549 Bioinformatics II
- GCC - 551 Ethics in Biomedical Research and the IRB
- GCC - 593 Introduction to Grantsmanship

## The Graduate College: Master's of Science and Doctor of Philosophy Degrees

### Doctor of Philosophy

The Doctor of Philosophy (PhD) is the highest degree conferred by Rush University. The Doctor of Philosophy is awarded in recognition of high achievement in a particular field of scientific research as evidenced by submission of a dissertation that demonstrates independent investigation and contributes new information to the body of existing knowledge. The PhD program integrated and research-oriented; it should culminate in a work of literary and scholarly merit, which is indicative of the candidate's

ability to conduct original research in a recognized specialty. Specifically the program is composed of formal courses, guided individual study in a chosen field or discipline; cognate subjects recommended by the candidate's advisory committee, original research that serves as the basis of scientific publication and a scholarly dissertation. A first-authored scientific manuscript of the student's original research is a degree requirement.

### Admission to Candidacy

Admission to candidacy is evidence that the doctoral student has successfully completed all preliminary coursework and is prepared to move into the intensive research experience. Depending upon the requirements of the Program, these exams will test accumulated knowledge, scientific reasoning and the ability to critically and analytically think. Admission to candidacy is a demonstration of confidence that the student will successfully accomplish the remaining requirements of the program. Students failing to achieve admission to candidacy may apply the coursework and completed research toward a related Master's of Science degree.

### Dissertation

A doctoral student must complete a dissertation. This document is developed through faculty-guided independent research projects. The dissertation must be original and cannot have been used to meet the requirement of any other degree, either at Rush University or any other university.

Each student will have a Dissertation or Advisory Committee whose role is to assure that the student's dissertation is of high quality and meets the standards of the Program and the College for originality, contribution to the field and scholarly presentation. The Committee is also to assure that the student is making satisfactory progress toward completion of the degree. The Committee is chosen by the student in conjunction with the student's primary adviser and should consist of at least five total members. The composition of this committee should be approved by the Academic Standards Committee and should comply with any specific requirements of the Graduate College. Advisory Committee members must be members of the Graduate College. At least one member of the committee should be external to Rush University. Once the Committee convenes, it will choose a chairperson who cannot be the student's primary adviser. In addition to the five committee members, the program director will serve as an ex officio member of the Committee.

The public defense will be comprised of a public one-hour lecture attended by the Dissertation Committee and faculty and students of the University. The Dissertation Committee then meets in closed session to examine the candidate and approve the dissertation. Typically the meeting immediately follows the public lecture. The Committee strives for a consensus, but the dissertation can be approved over the objections of a single committee member.

### Master of Science

The Master's of Science degree is designed to enhance the scientific and professional preparation of students aspiring for a career in the health professions or in a related field requiring graduate level biomedical sciences. Students will bolster their preparation for further study or entry into the biomedical workforce by completing a rigorous combination of multidisciplinary graduate level coursework, immersive experiential learning, individualized electives, advising and professional development.

The College offers two types of Master's of Science degrees: thesis and non-thesis. The Integrated Biomedical Sciences and Clinical Research Master's of Science programs are thesis-requiring and traditionally take five terms to complete. The Biotechnology Master's of Science degree is a two-term, non-thesis accelerated program designed to provide laboratory and research skills at the graduate level.

### Thesis

The thesis is a record of the research experience of the student and must be original work with the potential to be published in a peer-reviewed journal. The student will identify an area of interest and submit the name of a potential adviser to the Academic Standards Committee for approval.

After the student selects a research adviser and begins to collect preliminary data, the student and adviser will select an Advisory Committee. This Committee will advise the student and evaluate their proposal and thesis documents. The Committee will consist of the adviser and two additional Graduate College faculty members. Committee members should be familiar with either the research area or crucial technical aspects of the student's project. Committee members are intended to be a resource for the student and their adviser to enhance didactic and technical knowledge towards the completion of the student's project. Upon completion of the thesis, the student will present their findings in a public forum open to the University community. All voting members of the Committee must approve the thesis document and certify that the student has completed all requirement for the Master's of Science degree.

## The Graduate College: Academic Policies

The Graduate College follows University-wide policies and procedures and reviews Program-specific regulations. However, The Graduate College reserves the right to make substantive changes in its Programs after a student has matriculated. Students will be informed in writing if any requirements are changed. Students re-entering the college after an absence will be guided by policies and procedures in effect at the time of re-entry.

### Examination Policy

It is the responsibility of the individual course director to inform students about the examination requirements for their course. A period at the end of the term is provided for final examinations; however, any form of assessment can be conducted at any week of the semester. This information will be included in the course schedule and syllabus.

### Pass/No Pass Grades

Required courses are taken for a letter grade and not under the pass/no pass (P/N) option. Research hours are generally graded using the P/N option.

### Good Academic Standing

To remain in good academic standing, students must earn a B (3.0) or better in core and cognate courses, meet the requirements of their Program and maintain a cumulative 3.0 GPA. A student must be in good academic standing to be admitted to candidacy and to graduate. Students who fail to remediate their deficiencies within one academic term or are placed on probationary status a third time, are subject to dismissal by the Graduate College.

### Academic Difficulty

The responsibility to inform students of their academic deficiencies and for establishing conditions to remedy said deficiencies and regain good academic standing resides within the Graduate College. The program director also monitors the progress and promotion of students and gives approval to award students' degrees.

### Dismissal

Recommendations for student dismissal are initiated by the programs or the Graduate College and follow the Rush University process. Should a program recommend the dismissal of a student, the program director will forward such recommendation to the Academic Standards Committee for

final recommendation to the dean. Letters of dismissal come from the dean. Appeal of a dismissal action begins within the appropriate program.

### Full-time Enrollment

Full-time enrollment is required of all Graduate College students with the exception of the Clinical Research, Nursing Science and Health Sciences students. Full-time students must register for at least nine term hours each term or at least two term hours when enrolled in thesis and dissertation research courses. Students receiving a thesis-based Master's degree from the Graduate College as a full-time student must be enrolled for all terms between their matriculation and graduation. At the time of graduation, the student must be enrolled in the College.

### Extension of Program

Doctor of Philosophy (PhD) candidates are expected to meet all requirements for graduation within five enrolled academic years in the Graduate College (excluding leaves of absence). This period begins with the term in which the student formally matriculates. Exceptions to the time limitation must be submitted to the Academic Standards Committee in writing. The request must identify the reasons for the extension and provide a written plan with reasonable deadlines for completion. This document will be co-signed by the student's research adviser and program director. The Academic Standards Committee will vote on the extension (simple majority) as a recommendation to the dean of the Graduate College. If the extension is approved, the student's adviser will then provide an update on the student's progress after six months. One year after the extension is granted the student is expected to complete all requirements. A second request may be made by the student's adviser and program director, but will be approved for a recommendation to the dean of the Graduate College by a two-thirds majority of the voting members present at a formal hearing of the Academic Standards Committee. Within one year of that second request, the student must complete all requirements for the Doctor of Philosophy degree or face dismissal. Alternatively, the student may be awarded a Master's of Science degree upon the recommendation of the student's graduate program.

### Readmission

Any student who has withdrawn from the University or any dismissed student may apply for admission to the Graduate College. A re-entering student must meet the

conditions for re-enrollment, and all policies, requirements, including course sequence in effect at the time of re-entry. Application deadlines may vary by program.

### Academic Progression

The Graduate Programs, in concert with the rules of the College and Rush University, develops specific regulations governing the process that results in final awarding of the degree. While such regulations differ slightly from one program to another, the Academic Standards Committee reviews the regulations of each program for approval. Programs must be explicit and clear about regulations concerning academic policies and procedures surrounding qualifying, preliminary, and final examinations when they are required. Programs must provide candidates with the support needed to plan and conduct thesis/dissertation research. Students must become familiar with the regulations and expectations of their chosen program. These regulations and expectations are included in this catalog within the sections devoted to each program. The student is responsible for understanding the regulations, and monitoring changes that may occur during their tenure in the program.

### Student Academic Appeals Policy

Any student in the Graduate College may appeal a final course grade, failure on a preliminary or comprehensive examination, or failure of the thesis or dissertation that results in his or her academic probation or dismissal from the University. A student may also appeal an unreasonable delay in his or her graduation from the University. No other issues may be appealed through this process.

The process for filing an appeal will be completed within one term. If a resolution cannot be achieved at the Program level, the procedure outlined below should be followed. At any step in the process, the student may withdraw the appeal by written notification to the dean. In the event of a dismissal decision, a student may continue to enroll until the appeal process is completed or the student withdraws the appeal.

**Step 1:** If the student wishes to appeal the decision beyond the program, within two weeks of receiving a decision from the program, the student will submit a written statement to the Academic Standards Committee requesting consideration of his or her case by an advisory panel. The student must provide the following in the written statement:

- Course number and grade being appealed or other cause for probation or dismissal, i.e., failure of preliminary or comprehensive examination, or thesis or dissertation
- Action being requested
- Justification for the request
- An outline of the efforts and actions already taken to obtain consideration of the request

The student will send copies of this communication to the Academic Standards Committee. In addition, if a course grade is being appealed, the student will send a copy to the course director. If the evaluation of a thesis or dissertation is being appealed, the student will send a copy to the chairperson of the thesis or dissertation committee. The advisory panel will be the Academic Standards Committee.

**Step 2:** Within two weeks after notification to the Academic Standards Committee, the committee will meet to review the appeal, and submit a written recommendation to the Associate Dean.

**Step 3:** Within two weeks following receipt of the recommendation from the Academic Standards Committee and upon discussion with the student and with others as appropriate, the Associate Dean shall reach a final decision and notify each party of the decision.

If the student wishes to appeal the decision of the associate dean, they may appeal to the Graduate College Council who will consider the evidence and render a recommendation to the Dean regarding the appeal. The decision of the dean is final. If the Dean recuses themselves from the appeal process, the recommendation of the Graduate College Council on the appeal will be rendered by the Provost or their designee.

### Academic Honesty and Student Conduct

The Graduate College and its programs follow the University policies on academic honesty and the University statement on student conduct. Each student is expected to conduct themselves at all times in a professional manner — a manner which conforms to the ethics of the profession and which instills confidence in one's abilities as a working scientist. Irresponsible, unprofessional or unethical behavior, as determined by the Graduate College Honor Code Committee may result in dismissal from the program. The College and its programs will not condone cheating in any form. Allegations of cheating will be reviewed by the program director with the help of an ad hoc committee. If merited, the report will be forwarded to the Graduate College Honor Code Committee.

### Rush University Academic Policies

The Academic Resources and Policies section of this catalog contains additional Rush University academic policies.

This Rush University catalog also details the policies regarding inclusion of minorities and those with disabilities, as well as the policies and procedures for reporting harassment. Students who may need special accommodations can access this information at [www.rushu.rush.edu/office-student-accessibility-services](http://www.rushu.rush.edu/office-student-accessibility-services).

## The Graduate College Academic Programs

Biotechnology (MS)

Clinical Research (MS)

Integrated Biomedical Sciences (PhD)

Integrated Biomedical Sciences (MS)



## Biotechnology (MS)

### Master of Science

## Biotechnology (MS)

### Program Overview

The Master of Science in Biotechnology (BTN) is a non-thesis research and laboratory training program designed to prepare the student for careers in research-related fields, education, and/or graduate or professional school. This flexible degree program is designed for students with earned bachelor's degrees that are interested in furthering their scientific education. The customized curriculum helps students meet their career and professional goals. There are three tracks in the program including: 1. Pre-professional, 2. Research, and 3. Education. Students will participate in hands-on laboratory courses designed to cover the common and most important techniques and methods employed in research today. The program director, in consultation with the Graduate College dean, has oversight of the program and its faculty. The program director is responsible for the implementation of program goals and assessment of student learning outcomes.

## Biotechnology (MS): Academic Policies

### Academic Standing

To maintain good academic standing all Biotechnology students must have a cumulative 3.0 grade-point average at the time of program completion. Any student who falls below this academic standard will be considered to be in academic difficulty. A student in academic difficulty is not eligible for graduation.

### Graduate College/Rush University Academic Policies

Academic policies specific to the Graduate College are located earlier in this catalog. In addition, the Academic Resources and Policies section of this catalog contains Rush University academic policies.

## Biotechnology (MS): Curriculum

### Degree Requirements

The program consists of three components:

- Minimum of 34 graduate credits
- Track components
  - 1. Pre-professional: Human Anatomy, standardized test preparation and test anxiety workshops, and experiential opportunities
  - 2. Research: Capstone independent research project, internship/practicum
  - 3. Education: Capstone independent research project, internship/practicum

Courses in the following subject areas are required (34 total credit hours):

- Biomedical informatics
- Biostatistics
- Molecular Biology
- Biochemistry
- Cell Biology
- Career Professional Development
- Pre-professional Track: Professional school preparation, experiential learning and graduate Human Anatomy
- Research Track: Internship/practicum, and Capstone
- Education Track: Internship/practicum, and Capstone

It is the student's responsibility to register for all core courses that are offered within a given term to fulfill Program requirements. The following are courses that meet the course requirements listed above:

### Required Courses for All Students (23 credits)

BTN-523	Career Planning	1
BTN-531	Laboratory Techniques I	2
BTN-532	Laboratory Techniques II	2
BTN-533	Laboratory Techniques III	2
BTN-534	Laboratory Techniques IV	2
GCC-501	Molecular Bio: Genome/Proteome	3
GCC-502	Cell Biochem: Pro, Trans, Signl	3
GCC-503	Functional Cell Biology	1
GCC-506	Biomedical Ethics	1
GCC-546	Principles of Biostatistics I	2
GCC-547	Principles of Biostatistics II	2
GCC-548	Bioinformatics	1
GCC-549	Bioinformatics II	1

### Additional Courses dependent on track choice

BTN-537	Research Capstone	4
GCC-590	Graduate Human Anatomy	5
GCC-900	Independent Study	1-9
<b>Program Total:</b>		<b>34</b>

Students are allowed to take one elective course from Graduate College course offerings per term. No transfer credits from other Rush University Colleges or other institutions will be accepted.

### Internship Practicum

Students who choose to participate in an internship/practicum in addition to their didactic and capstone projects. If students choose to participate in an internship/practicum, a minimum of eight weeks of participation is required for completion of this requirement and will typically be conducted in the spring semester. The goal of the internship/practicum component is to provide the student hands-on exposure to research in a variety of environments. The student will work with a mentor and will be actively involved in the development, execution and evaluation of a research project or an aspect of research-related activity. During the internship/practicum, the student will be exposed to research-related activities that are aligned with the career goals of the student. For example, a student in the pre-professional track may shadow physicians, while those in the research track will conduct an independent project in a faculty mentors lab, and those students in the education track may perform independent research focused on projects that are transferrable to the classroom.

The internship/practicum may be completed with a mentor who is actively conducting research studies within a research or hospital setting. A practicum may also be performed under the direction of a professional within a drug, device, or biotechnology company, a clinical research organization (CRO) or site management organization (SMO).

### Capstone Research

Students in the Research and Education tracks of the BTN program are required to complete a capstone project that provides a culminating experience and applies the principles and methods learned in the coursework to an independent research project. Students generally identify their mentor and develop their research proposal between the first and second semesters. The research project must involve the analysis and interpretation of data. Students are encouraged, but are not required, to conduct primary data collection. Students will present their capstone projects in a public presentation that includes their capstone mentor, BTN students, and faculty members, and any other interested parties.

## Master of Science Clinical Research (MS)

### Program Overview

The Master of Science in Clinical Research (MSCR) is a rigorous program that meets the needs of health professionals engaged in the full spectrum of patient-oriented research. This flexible and personalized degree program is designed for a variety of students including: those who seek to understand, and/or conduct, supervise, co-ordinate varied aspects of clinical research (including clinical trials). These students may be physicians, researchers and research study personnel (research nurses; study coordinators; managers in clinical research and site management organizations (CROs and SROs); and bachelors prepared individuals with interests in applied clinical research in the pharmaceutical, biotechnology, and medical device industries.

Upon completion of the MS in Clinical Research, students are expected to:

1. Demonstrate the ability to design and conduct clinical research, analyze data, and interpret results to answer research question
2. Demonstrate the ability to read and critique the clinical research literature
3. Present clinical research findings (from literature and/or their own research) to peers

Our mission is to provide students with a rigorous academic experience, and hands-on exposure to and practical experience in clinical research. MSCR graduates will be prepared to enter the workforce as competently trained clinical research professionals.

### LEAP Funding

Rush employees can qualify for tuition reimbursement through the Linking Education and Performance, or LEAP, program. Contact your benefits specialist for LEAP benefit and qualification information. John H. Stroger, Jr. Hospital of Cook County affiliates can qualify for a reduced tuition rate.

## Clinical Research (MS): Academic Policies

### Academic Standing

Students must earn a 3.0 or above in core courses, earn a pass in courses with a pass/no pass option, meet the requirements of their program and maintain a cumulative 3.0 grade-point average at the end of each term to remain in good academic standing. Any student who falls below this academic standard are academically deficient and not eligible for graduation. Failure to remediate deficiencies within one academic semester can result in dismissal by the Graduate College.

### Graduate College/Rush University Academic Policies

Academic policies specific to the Graduate College are located earlier in this catalog. In addition, the Academic Resources and Policies section of this catalog contains Rush University academic policies.

## Clinical Research (MS): Curriculum

### Degree Requirements

The program consists of three components:

- Minimum of 32 graduate credits
- Capstone clinical research project resulting in a written research paper document
- Oral presentation/defense

### Master of Science in Clinical Research curriculum:

There is a core curriculum (20 credits) that is supplemented with additional didactic, experiential, and research options (12 credits). Curriculum in the following subject areas is required:

- Bioinformatics
- Biostatistics
- Capstone/Thesis Research
- Clinical Research Design
- Ethics, Regulatory, and Compliance for Clinical Research
- Healthcare Outcomes

Transfer credits from other Rush University Colleges or other institutions will be accepted upon approval of the program director.

The following courses are examples of courses that meet the core subject area requirements listed above:

### Required Core Courses (20 credits)

Students are required to complete 20 credits of core coursework. This includes all of the following courses:

CRE-556	Clinical Research Design	4
GCC-546	Principles of Biostatistics I	2
GCC-548	Bioinformatics	1
GCC-551	Ethics and IRB	2
PVM-553	Observational Epidemiology	1
PHR-556	Tools for Research	1
CRE-900	Independent Study	1-9

(Note: CRE-900 is a variable credit course. Clinical Research students must take a minimum of 4 credits of CRE-900 to earn their degree.)

Students also select an additional 5 credits of coursework from the following courses. Students select courses based on their specific career goals:

GCC-552	Intro to Regulatory Process	2
CRE-559	Readings in Special Populations	1
GCC-547	Principles of Biostatistics II	2
GCC-549	Bioinformatics II	1
GCC-593	Introduction to Grantsmanship	1

### Additional Required Coursework (12 credits)

CRE-597	Thesis Research	1-9
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### Example Curricula

The program curricula is personalized and will depend on the prior training and interests of each student.

The following are examples of curricula choices:

**Track 1.** Clinically-trained students that are interested in becoming physician-researchers might choose to enroll in:

1. Tools for Research
2. Biostatistics I (and II)
3. Bioinformatics I (and II)
4. Ethics and IRB
5. Clinical Trials I and II
6. Introduction to Grantsmanship
7. Epidemiology
8. Readings in Special Populations
9. Healthcare Outcomes

**Track 2.** A student interested in Analytics focusing on Quality, Safety and Value might choose:

1. Tools for Research
2. Biostatistics I (and II)
3. Bioinformatics I (and II)
4. Clinical Trials I and II
5. Ethics and IRB
6. Introduction to Grantsmanship
7. Epidemiology
8. Healthcare Outcomes

**Track 3.** Non-clinically trained students interested in becoming a clinical research professional might choose:

1. Tools for Research
2. Biostatistics I (and II)
3. Bioinformatics I (and II)
4. Clinical Trials I and II
5. Ethics and IRB
6. Intro to Regulatory Process
7. Epidemiology
8. Readings in Special Populations
9. Practicum in Clinical Research

### Practicum

Students can choose to participate in an optional practicum or independent study in clinical research in addition to their capstone/thesis research project. The goal of the practicum is to provide the student hands-on exposure to clinical research. The student will work with a mentor and will be actively involved in the development, execution and evaluation of a clinical research project or projects. During the internship/practicum, the student will be exposed to a variety of research activities that may include: clinical research planning, protocol preparation, interaction with Institutional Review Boards, regulatory requirements, selection of subjects/patients for the clinical trial, study monitoring and data analysis. The practicum may be completed with a mentor who is actively conducting clinical research studies within a clinical research or hospital setting. It may also be performed under the direction of a clinical research professional within a drug, device or biotechnology company, a clinical research organization (CRO) or site management organization (SMO) actively involved in clinical trials. A minimum of eight weeks of participation is required for completion of the practicum course.



## Capstone/Thesis Research

Students in the MSCR program are required to complete a capstone/thesis that provides a culminating experience and applies the principles and methods learned in the coursework to a real-life research project. The goal of the capstone/thesis is to demonstrate the student's understanding of the clinical research process from both a theoretical and a practical point of view. Students can conduct their thesis research in a wide variety of settings including, but not limited to, academia, biotechnology, pharmaceutical or device companies.

Students generally identify their mentor and advisory committee, and develop their research proposal while they are completing their coursework. The research project must involve the analysis and interpretation of data. Students are encouraged but are not required to conduct primary data collection (e.g. preexisting patient health information). Students must meet with their advisory committee at least once every six months, and the committee is responsible for reviewing and approving the capstone/thesis. Once approved, the student defends the thesis in a 45-minute public defense that includes their committee, capstone mentor, MSCR students and faculty members and any other interested parties. The public defense is immediately followed by a closed-door defense with their committee only. The purpose of the oral presentation is to demonstrate the student's ability to (1) clearly describe the research topic, methods and results; (2) demonstrate their understanding of study design and analytic principles and methods; and (3) place their research into a clinical context.

All students will be required to submit the capstone/thesis to ProQuest to be eligible for graduation. All students are encouraged to formulate their original research into a scientific journal article and submit the manuscript as a publication in a peer-reviewed journal.

## Course of Study

The MSCR Program can be completed either part-time or full-time depending on the goals of the student. Courses will take place either online, asynchronously, or in the late afternoons or early evenings. The program is designed so that a full-time student may complete their coursework in one academic year, including summer. Practicum and capstone components of the program should begin as soon as mentors have been identified, and the time frame for finishing requirements will be determined on a student-by-student basis by the research mentor, committee, and program directors. Part-time students must register for at least four but not more than 11 credits each academic term until all course requirements are fulfilled.

## Doctor of Philosophy

### Integrated Biomedical Sciences (PhD)

#### Philosophy

The PhD in integrated biomedical sciences is designed to educate science professionals for leadership in research and academic positions, as well as to provide career path education relevant to their specialized fields. Since collaborative interdisciplinary teams of scientists perform most biomedical research, our doctoral program emphasizes an integrated interdisciplinary approach to biomedical research. Graduates of this program will perform high-quality, impactful biomedical research at colleges and universities, government agencies, hospitals and nonprofit agencies and in industry. Students in the program will work with faculty and scientists to generate new knowledge in the fields of biomedicine using sophisticated research methods. As a part of the program, students are required to demonstrate their knowledge of core and concentration-specific courses and pass a comprehensive preliminary examination based on their research proposal. They will design and conduct research that culminates in a dissertation, and they will disseminate their scientific findings through scholarly publications and presentations.

### Integrated Biomedical Sciences (PhD): Curriculum

#### First Year

The goal of the course work in the first year is to expose the student to the biomedical sciences to enable them to design and approach a research problem from molecular, biochemical, cellular and organ system perspectives. This broad based approach to disease is the core of the Integrated Biomedical Sciences program. Students will need to complete 37 credits of core course work.

First Year		Credit Hours
<b>Fall Term</b>		
GCC-501	Molecular Biology: Genome to Proteome	3
GCC-502	Cellular Biochemistry: Proteins, Transport and Signaling	3
GCC-503	Functional Cell Biology	1
GCC-505	Techniques in Biomedical Sciences	2
GCC-530	Laboratory Rotations I	1-9
GCC-546	Principles of Biostatistics I	2
GCC-548	Bioinformatics	1
<b>Spring Term</b>		
GCC-504	Functional Tissue Biology	3
GCC-506	Biomedical Ethics	1
GCC-515	Advanced Studies on Molecular, Cellular, and Functional Tissue Biology	2
GCC-530	Laboratory Rotations I	1-9
GCC-531	Topics in Biomedical Integration I	2
GCC-533	Laboratory Rotations II	1-9
GCC-534	Laboratory Rotations III	1-9
GCC-598	Pre-Proposal Research for Integrated Biomedical Sciences	1-9
<b>Summer Term</b>		
GCC-532	Topics in Biomedical Integration II	3
GCC-534	Laboratory Rotations III	1-9
GCC-598	Pre-Proposal Research for Integrated Biomedical Sciences	1-9
Second Year		Credit Hours
<b>Fall Term</b>		
GCC-593	Introduction to Grantsmanship	1
GCC-598	Pre-Proposal Research for Integrated Biomedical Sciences	1-9
GCC-699	Dissertation Research	1-9
<b>Spring Term</b>		
GCC-598	Pre-Proposal Research for Integrated Biomedical Sciences	1-9
GCC-699	Dissertation Research	1-9
GCC-549	Bioinformatics II	1
GCC-547	Principles of Biostatistics II	2
PHR-556	Tools for Research	1
<b>Summer Term</b>		
GCC-699	Dissertation Research	1-9

#### Notes:

GCC-530 is taken once for a minimum of 2 credits. The student can choose to take this course during the fall or spring semester of their first year.

GCC-534 is taken once for a minimum of 2 credits. The student can choose to take this course during the spring or summer semester of their first year.

Two credits of GCC-699 Dissertation Research is defined as full-time. Students are expected to register for a low number of research credits each term as 18 credits of dissertation research are required for graduation. Two credits are considered to be a full-time commitment to research.

In years three through five, the emphasis is on research. A student works with their dissertation adviser, Advisory Committee and program director, to determine the most appropriate mix of cognates, electives and research hours each term.

- Advanced Topics courses count as cognates and are taken for one term of credit each fall and spring term starting in the spring of the first year for a maximum of eight credits. This course is not required during the term when a student intends to graduate. The Advanced Topics Seminar course should align with the student's research area of interest.
- Pre-dissertation Research: Predissertation Research and Laboratory Rotations are part of the core curriculum.

While registration appears similar in years three through five, the nature and character of the research changes and the student passes through a number of milestones towards completion of the PhD.

Course	Credit Hours
GCC-598 Pre-Proposal Research for Integrated Biomedical Sciences	1-9
GCC-694 Advanced Topics for Translation Cancer Research	1
GCC-695 Advanced Topics Seminar for Cardiovascular & Respiratory Biology	1
GCC-696 Advanced Topics Seminar in Immunity, Infection & Inflammations	1
GCC-697 Advanced Topics Seminar for Musculoskeletal Track	1
GCC-698 Advanced Topics Seminar for Neuro Research	1
GCC-699 Dissertation Research	1-9

### Cognates and Electives

For graduation, students will need 16 credits of cognate hours and nine credits of elective hours in courses that they select. The courses can be taken at any time throughout their tenure as a PhD student.

## Integrated Biomedical Sciences: Concentration Focused Cognates and Electives

Course	Credit Hours
BMC-506 Human Movements and Kinematics	2
BMC-507 Bioengineering Materials	2
BMC-508 Techniques in Orthopedic Biomechanics	2
BMC-509 Mechanics of the Musculoskeletal System	2
BCH-571 Med Biochem for Grad Students	3
BCH-624 Connective Tissue Biochemistry	2
GCC-611 Cancer Biology I	3
GCC-612 Cancer Biology II	3
GCC-621 Vascular Biology	2
GCC-630 Microbiome in Health and Disease	2
GCC-642 Biosolid Mechanics	3
GCC-650 Neuroscience for Basic & Clinical Applic	3
GCC-652 The Changing Nervous System	2
IMM-507 Basic Immunology I	3
IMM-508 Basic Immunology II	3
IMM-610 Special Topics	1-12
NEU-591 Advanced Neuroscience Proseminar	2
PHY-503 Physiology of the Striated/Cardiac Muscle	3
IMM-510 Advanced Immunology I	4

## Integrated Biomedical Sciences (PhD): Dissertation Program Progression

### Year 1 Classes and Comprehensive Exam

The goal of the coursework in the first year is to expose the student to the biomedical sciences to enable them to design and approach a research problem from molecular, biochemical, cellular and organ system perspectives. This broad based approach to disease is the core of the Integrated Biomedical Sciences program. The Topics in Biomedical Integration course (GCC 531) is offered in the spring semester of the first year. In this course, a specific disease will be studied from the molecular perspective to organ system failure under faculty direction. The students will then be assigned a group project in which they use the approaches they have learned to study another disease. This project will strengthen student skills in preparation for the comprehensive exam. In the summer, Topics in Biomedical Integration II (GCC 532) is the comprehensive examination in which students will be given an individualized disease topic related to their planned research. They will be required to write a literature review approaching the topic from each biomedical perspective.

### Year 1 Research Experience

During the first year, students will have a minimum of two laboratory rotations that must be in different laboratories. A student registering for the three required laboratory rotations should use consecutive laboratory rotation course codes. These laboratory rotations will expose the students to a range of research environments. Students are expected have a project with a hypothesis and aims, to learn techniques and attend all lab meetings. Based on these rotations, students will submit the names of three potential research advisers with a priority ranking to the Academic Standards Committee for approval. The Committee in consultation with the potential advisers will approve adviser-student matches. Students committed to a particular laboratory (funded by the Research Advisor's grants) are also required to perform a minimum of two laboratory rotations. Exposure to other laboratories and research will give the student a greater breadth of knowledge. Students are expected to select a research adviser and an area of research interest by the end of their first summer term. IBS PhD students will follow their area of interest courses and may either do Laboratory Rotation III or, if they did not change laboratories, they may immediately begin dissertation research with their research adviser. All advisers must meet the criterion established by the Graduate College.

GCC-530 Laboratory Rotations I	Credits 1-9
GCC-533 Laboratory Rotations II	Credits 1-9
GCC-534 Laboratory Rotations III	Credits 1-9

### Year 2 Course Selection, Research Experience, Qualifying Examination

The selection of research adviser will significantly influence the student's selection of a research area of interest. Subsequent classes will be dictated by the area specific cognates and electives and by relevant electives offered. The selection of electives should complement research activity and the interests of the students and should help prepare them for the career path identified through the use of the Individual Development Plan (IDP) website ([myidp.sciencecareers.org](http://myidp.sciencecareers.org)) and additional resources provided by the Graduate College. The goals of the second year are to learn the relevant laboratory techniques and to develop a research proposal in conjunction with their research adviser. The research project will advance knowledge in a specific discipline and yield first-author scientific publications for the student. The student's research proposal should include specific aims and be written in the format of a NIH F31 grant proposal (See <https://researchtraining.nih.gov/programs/fellowships/F31>). The student must select a Dissertation Committee and defend the proposal in front of the committee by the end of the second year. The written proposal and its defense in front of the committee constitutes the qualifying examination. Passing the qualifying examination in front of the Dissertation Committee means the student is a candidate for the PhD.

The student's assessment at this time relates to the following Student Learning Outcomes: The graduate will be able to acquire research skills, collect and analyze data, and interpret results in order to address an original research question.

In addition, this step begins the continuing assessment of the following outcomes: A graduating student will be capable of independent critical thinking and writing as well as proposing, performing and effectively presenting their research.

The student will be able to work collaboratively with other scientists, physicians and health care professionals to give and obtain feedback concerning the approach to research problems, data analysis and implications of research.

The work environment in basic and clinical science is evolving. Students should be aware of the many different types of opportunities available in the workplace and need to prepare themselves for the opportunities and challenges that they will encounter when they graduate. In addition to the research and the coursework, the student will create an Individual Development Plan (IDP) each year to define their areas of interest, skills and values. Students will review their IDP yearly with their research mentor, program director or

Graduate College designee to refine their career interests and define their gaps in knowledge or skills that can be pursued in the following year. By the time of graduation, students should have used the IDP, along with mentorship and experiential or other training opportunities to refine their career path.

Student progress is assessed at the end of years two through five. At the end of two, student progress toward meeting expected outcomes will be evaluated by the student's research adviser and program director. See section on Dissertation Proposal and Presentation.

### Qualifying Examination

The goals of the second year are to learn the relevant laboratory techniques and to develop a research proposal in conjunction with the student's research adviser. The research project will advance scientific knowledge in a specific discipline and yield first-author scientific publications. For the Qualifying Examination, the student's research proposal should include a hypothesis and specific aims and be written in the format of an NIH F31 grant (<https://researchtraining.nih.gov/programs/fellowships/F31>). The student must select a Dissertation Committee and defend the written proposal as an oral defense in front of the committee by the end of the second year. All members of the Committee or appropriate substitutes must be present at the Qualifying Examination and the dissertation defense either in person, on the phone or using electronic media.

If the student does not complete the Qualifying Examination by the end of the summer of their second year they will be reported to the Academic Standards Committee and placed on probation during the fall of their third year. If the student has not taken the examination by the end of the term of probation the student will be again reported to the Academic Standards Committee for potential dismissal. Since the adviser shares in the responsibility to ensure student academic progress, including completion of program milestones in a timely manner, advisers of students who do not take the qualifying examination by the end of fall term of their third year will not be allowed to take a new student into their laboratory for the subsequent two years.

Following the defense of their Qualifying Examination, students will submit their written proposal as an Individual National Research Service Award (F31) [<https://researchtraining.nih.gov/programs/fellowships/F31>] or a comparable grant application. While a student is conducting dissertation research the student will present their progress every six months to their committee in an identical format as the original proposal meeting until the committee

has agreed that the student can write their dissertation. The Advisory Committee meetings will consist of an oral presentation of research progress by the doctoral student to the committee. This oral presentation will be followed by a discussion of progress and career development. A detailed written account of progress will be distributed by the student to their committee prior to this meeting. It is recommended that the Rush career development IDP (<https://rushedu-avvic.formstack.com/forms/idp>) be used for IDP tracking.

### Year 3-5 Research Progress/Publications/Dissertation

For evaluation in years three through five, the student will submit a written report documenting their progress. The research adviser and program director will also submit their assessment of student progress for each year. A meeting with the student, research adviser and program director will take place at the end of each year to discuss the student's progress.

The research adviser monitors the day-to-day progress of the student. The Dissertation Committee will meet at least every six months to monitor progress and to approve any changes to the proposed research project. They may meet more frequently, especially after the approval of the student's research proposal. The student is expected to attend national meetings, make presentations, posters etc. and become a part of the scientific community. Likewise, the student should be submitting research articles. The Integrated Biomedical Science PhD Program requires that the research project yield at least one first authored research article accepted for publication in a scientific peer-reviewed journal. The publication requirement is necessary for graduation but not sufficient. The Dissertation Committee will continue to assess student progress on the aims and determines when the student has completed their dissertation. (See Dissertation Proposal and Presentation below).

The student's assessment continues on the outcomes listed above with emphasis on the growth of research and communication skills. Likewise, it is expected that the communication outcomes will also become more centered on written communication in the form of abstracts, peer-reviewed journal articles and the dissertation as the student begins to complete the following outcome:

- The graduate is able to contribute to the scientific literature in an area of expertise via published abstracts, a dissertation and by the publication of a first-authored research article in a scientific refereed journal.

### Dissertation Document, Presentation and Approval

The student is expected to write a dissertation (format approved by the Center for Academic Excellence) and present the work in a public forum attended by the Dissertation Committee, and University faculty and students. The Dissertation Committee will then meet with the student in a closed session to address any additional questions and to deliberate on approval of the dissertation. Typically the meeting immediately follows the public defense. The student may be asked to make revisions before final approval of the dissertation by the committee. The student must notify the Registrar's Office of impending completion of the degree by the submission of an Intent to Graduate Form at the beginning of the final term. Prior to completion, the student should consult with the Center for Academic Excellence to ensure that the dissertation is formatted correctly. Once the dissertation is approved, the student will complete the degree approval form.

### Minimal Credit Hours Required for the Integrated Biomedical Sciences (PhD) Degree

The PhD in Integrated Biomedical Sciences should be completed in five years and requires completion of 80 credits distributed as follows: core courses (37), concentration specific cognates (16), electives (9) and dissertation research (18). Students must also pass the Comprehensive Examination and the Qualifying Examination and publish a first-authored, scientific, peer-reviewed manuscript on their research project. The core curriculum, which is common to all students, builds knowledge and skills in research theories and methodology, data analysis and statistics, laboratory applications and skills, and the molecular and cellular sciences basic to health and disease. These courses provide systematic exposure to the contemporary process of scientific discovery and will serve as the basis for the remainder of the curriculum. Advanced students entering with a Master of Science (MS) degree in a biomedical science or a Doctor of Medicine (MD or DO) degree may have satisfied the requirement for some of the core classes based on their prior records. Therefore, some core course requirements may be waived, the requirement of core course hours can be compensated by taking extra hours of laboratory rotations or pre-dissertation research. These students may be able to complete the degree in a shorter time period providing that they progress through the other program requirements. IBS MS students who enter the IBS PhD program will be on a separate plan of study which requires fewer cognate and elective credits based on the number required for the IBS MS program.

Students are required to select from concentration-focused cognates. The selection of coursework should involve the participation of the research adviser and committee. All students will be required to participate in area-specific advanced topic seminars and to complete a minimum of 18 credits of dissertation research following admission into candidacy for the PhD. Dissertation credits in the Graduate College typically involve laboratory-based research required for completion of the dissertation, and include training in various types of skills including: analyzing published data; developing a research proposal; learning and applying advanced methodologies and statistical data analyses; developing skills to write and submit a pre-doctoral training grant application; practicing presentation skills to disseminate one's own research findings in national conferences; writing a research publication; and developing and defending a dissertation project.

### Integrated Biomedical Sciences (PhD): Academic Policies

#### Research Adviser Selection

During the first year the student will select up to three laboratories for research rotations. Based on these rotations, the student will identify their laboratories of interest and submit the names of three potential advisers with a priority ranking to the Academic Standards Committee. The Committee, in consultation with the potential adviser(s) will approve the adviser-student matches. Students who are already committed to a particular laboratory (funded by the research adviser's grants) are required to perform a minimum of two laboratory rotations. The student's research project should advance knowledge in a specific discipline and yield first-author, peer-reviewed, scientific publications for the student.

#### Integrated Biomedical Sciences (PhD): Research Opportunities

The research areas of interest for the Integrated Biomedical Sciences PhD Program are translational cancer research; cardiovascular and respiratory biology; immunity, inflammation and infection; functions and disorders of the musculoskeletal system; and functions and disorders of the nervous system. These include qualified faculty from Rush University Medical Center who have an interest in research in these areas. They come from academic departments as well as clinical departments, which enables students to select a variety of individuals with basic and clinical expertise to serve on their advisory committees and guide them through their projects.

## Milestone Exams

- **Comprehensive Examination** - In the summer term of the first year of classes, all students will take Topics in Biomedical Integration II (GCC-532). This course is the Comprehensive Examination. Students are given an individualized disease topic related to their planned research and are required to write a literature review from each biomedical perspective. The Comprehensive Examination assures that the student can approach a research or clinical problem from a variety of perspectives, accounting for the published literature that illuminates the molecular, cellular and organ systems manifestations of the disease process.
- **Qualifying Examination** (Dissertation Proposal and Presentation) - For the Qualifying Examination, the student will write a research proposal in the style of the NIH F31 fellowship, including a hypothesis, specific aims, and a detailed research strategy (see: <https://researchtraining.nih.gov/programs/fellowships/F31>). The student must select a Dissertation Committee and present the proposal to the Committee by the end of the second year.
- GCC - 532 Topics in Biomedical Integration II Credit(s): 3

## Advisory Committee

By the end of the summer term of the first year the student should have selected a research adviser and begun to collect preliminary data. Once a research adviser has been selected, a Dissertation Committee must be selected by the end of the following term. This committee advises the student and serves as the Qualifying Examination committee and the Dissertation Committee. The Graduate College requires that the committee is comprised of five members. One member will be the student's research adviser. A majority of the committee (at least three members) must be faculty at Rush University who are members of the Graduate College. The chair of this committee, who cannot be the student's research adviser, will be chosen at the first committee meeting and will preside at all subsequent meetings and arrange for a timely completion of the dissertation work. The Dissertation Committee strives for consensus in all its actions. A majority vote of the committee's membership, however, is sufficient for all activities except the final approval of the dissertation.

In addition to the five committee members, the program director will serve as an ex officio member of the committee. The ex officio member can participate in the meetings but cannot vote. The purpose of having an ex officio member is to monitor the quality of the examination experience. The ex officio member will ensure that the Graduate College rules are followed.

## Data Defense and Dissertation

In the candidate's final year, a dissertation data defense will be presented to their Dissertation Committee demonstrating that satisfactory progress has been made on the project to justify development of a plan to complete all experiments and to start writing their dissertation. Upon completion of the data defense and writing of the dissertation, the student will provide the dissertation to their Committee for approval at least two weeks prior to their public defense. The public defense will be comprised of a public one-hour lecture attended by the Dissertation Committee and faculty and students of the University. The Dissertation Committee then meets in closed session to examine the candidate and approve the dissertation. Typically the meeting immediately follows the public lecture. The committee strives for a consensus, but the dissertation can be approved over the objections of a single committee member. However, if two or more committee members disapprove of either the written dissertation or its oral defense, then the dissertation is not approved. The awarding of the PhD degree requires the demonstration of a capability for independent research and a contribution to scientific knowledge. Similar to the Qualifying Examination, all members of the committee or appropriate substitutes must be present at the dissertation defense either in person, on the phone, or using electronic media.

Since a peer-reviewed first authored research article is required for the degree, the dissertation is not considered complete until the publication of at least one peer-reviewed first authored publication. If publication is pending, the committee may approve the dissertation, but the Graduate College will not sign the degree approval form until the paper is accepted or published as verified by appearance on PubMed.

## Integrated Biomedical Sciences (PhD): Tuition Scholarship and Stipend

Acceptance into the doctoral program is limited by the availability of stipends. Accepted doctoral students receive a competitive University supported stipend and tuition scholarship, are supported by a faculty member, or have stipends from external sources. University funded stipends are awarded to U.S. residents. The stipend and tuition scholarship is renewed each year providing the student is making satisfactory progress towards the degree. Outside employment is not acceptable without prior Graduate College approval as it interferes with the time and effort necessary to complete the program.

## Master of Science

### Integrated Biomedical Sciences (MS)

The MS in Integrated Biomedical Sciences (IBS) is a research master's degree that will introduce students to the scientific approach and provide an opportunity for the student to pursue a directed research project. Graduates will be prepared to perform advanced biomedical research at colleges and universities, government agencies, hospitals, non-profit agencies and industry. Our integrated program emphasizes an interdisciplinary approach to biomedical education and

research. Students in the program will work with faculty to generate new knowledge in biomedicine using sophisticated research methods and approaches.

### Integrated Biomedical Sciences (MS): Research Opportunities

Students can choose research experiences and advisers from among the many qualified faculty from Rush University Medical Center's academic and clinical departments.

## Integrated Biomedical Sciences: MS Curriculum

First Year		Credit Hours
<b>Fall Term</b>		
GCC-501	Molecular Biology: Genome to Proteome	3
GCC-502	Cellular Biochemistry: Proteins, Transport and Signaling	3
GCC-503	Functional Cell Biology	1
GCC-505	Techniques in Biomedical Sciences	2
GCC-530	Laboratory Rotations I	1-9
GCC-546	Principles of Biostatistics I	2
<b>Spring Term</b>		
GCC-504	Functional Tissue Biology	3
GCC-506	Biomedical Ethics	1
GCC-515	Advanced Studies on Molecular, Cellular, and Functional Tissue Biology	2
GCC-533	Laboratory Rotations II	1-9
GCC-593	Introduction to Grantsmanship	1
PHR-556	Tools for Research	1
<b>Summer Term</b>		
GCC-599	Thesis Research for Integrated Biomedical Sciences	1-9
Second Year		Credit Hours
<b>Fall and Spring Terms</b>		
GCC-599	Thesis Research for Integrated Biomedical Sciences	1-9

### Note:

The specific courses or hours of cognates and electives will vary each semester depending upon the student's research area of choice and specific course selections.

For graduation, students will need seven credit hours of cognates and four credit hours of electives. Students may take these courses any time during their tenure as an MS student after consulting with the program director.

## Integrated Biomedical Sciences: MS Program Progression

### Year 1: Classes

The goal of course work in the first year is to expose students to the biomedical sciences in a logical progression and to provide the students with tools for approaching their future research experience. The reading courses provide a critical understanding of the literature and existing base of knowledge. They will also show students how new knowledge in these areas can help us understand diseases and use this information to identify new therapeutics. This broad-based approach to disease is the core of the integrated biomedical sciences program.

### Year 1: Research Experience, Adviser and Research Area Selection

During the first year, students will typically have two lab rotations in different laboratories. Laboratory rotations will expose students to diverse research environments and allow them to assess how they fit in to a particular laboratory or mentor situation. Students are expected to learn techniques and attend all scheduled experiments, lab meetings, mentor/student discussions, etc. Based on these rotations, students will submit the name of a potential adviser to the Academic Standards Committee for approval. The Academic Standards Committee, in consultation with the potential adviser, will approve adviser-student matches. Specific research projects will be determined by the thesis adviser after adviser-student discussions. If a student cannot choose a thesis adviser based on the first two laboratory rotations, a third rotation may be taken in the spring or summer.

### Year 2: Classes and Research Experience

Classes in year two will be determined by the research area specific cognates and electives available that academic year. Course selection should complement the student's interests and their research activity. When the student is not working on coursework they should be working on their research project. The student's assessment at this time is related to the following learning outcomes:

- Acquisition of research skills, collection of data and data analysis, as well as interpretation of results related to research addressing an original research question
- Capable of independent critical thinking and writing, as well as proposing, performing and effectively presenting their research.

- Working collaboratively with other scientists, physicians and health care professionals, to provide and obtain feedback concerning the approach to research problems, data analysis and implications of research

The student creates an individual development plan (IDP) to better define their areas of interests, skills, and values. Career guidance is available in the Graduate College office of career development and using the Rush career development IDP (<https://rushedu-auvic.formstack.com/forms/idp>).

### Minimal Credit Hours Required for the Integrated Biomedical Sciences MS Degree

The Program is designed to be completed in five consecutive terms and requires completion of at least 37 credits. These include 20 credits of core courses, seven credits of track-specific cognates, four credits of elective courses and six credits of Thesis Research.

The core curriculum focuses on developing knowledge and skills in research theories and methodology, data analysis and statistics, laboratory applications and skills, and the molecular and cellular sciences basic to health and disease. Students will each have a research project, write a thesis and give a thesis presentation at project completion.

The core curriculum, which is common to all students, builds knowledge and skills in research theories and methodology, data analysis and statistics, laboratory applications and skills, and the molecular and cellular sciences basic to health and disease. These courses will provide systematic exposure to the contemporary process of scientific discovery and will serve as the basis for the remainder of the curriculum.

Students will be required, in conjunction with their adviser(s), to select seven credits of courses from concentration-focused cognates in their chosen area and a minimum of four elective credits from the Graduate College courses offered. Finally, students will be required to accrue a minimum of six credits of Thesis Research.

### Research Adviser Selection

During the first year, the student, in consultation with the program director and with the approval of the Academic Standards Committee, students will select and complete two laboratory rotations. Based on these rotations, the student will identify an area of interest and submit the name of a potential adviser to the Academic Standards Committee for approval.

### Master's Thesis Research Committee

After the student selects a research adviser and begins to collect preliminary data, the student and adviser will select a Thesis Committee. This Committee will advise the student and evaluate their proposal and thesis documents. The committee will consist of the adviser and two additional Graduate College faculty members. Committee members should be familiar with either the research area or crucial technical aspects of the student's project. Committee members are intended to be a resource for the student and their adviser to enhance didactic and technical knowledge towards the completion of the student's project. The program director (or designated representative) will serve as an ex-officio non-signing member of the Thesis Committee to oversee the procedural aspects of the committee meetings and student progression through the program. The Thesis Committee will strive for consensus in all its actions; however, a majority vote of the committee's membership is sufficient for all activities except the final approval of the thesis, in which case only one member may disagree with the final decision.

### Research Proposal

Each student will write a succinct research project proposal to be presented to the Thesis Committee for approval. The proposal serves to keep the student focused on achieving project aims and allows the Committee to track student progress based on the stated aims. Proposals should contain the following elements:

- A background section with relevant literature citations in the specific research area
- The specific aim or aims (appropriately limited in scope)
- The experimental design and methods to be utilized
- Any preliminary data collected

The target date for proposal presentations is within the first 45 days of the fall term of year two; it is also acceptable for the proposal presentation to be held in the summer term between years one and two. The Thesis Committee evaluates the feasibility and scope of the project and recommends alterations as needed to ensure adequate student progress through the program in a timely fashion.

## Integrated Biomedical Sciences: Concentration Focused Cognates and Electives

Course		Credit Hours
BCH-624	Connective Tissue Biochemistry	2
BCH-571	Med Biochem for Grad Students	3
BMC-506	Human Movements and Kinematics	2
BMC-508	Techniques in Orthopedic Biomechanics	2
BMC-509	Mechanics of the Musculoskeletal System	2
GCC-611	Cancer Biology I	3
GCC-612	Cancer Biology II	3
GCC-621	Vascular Biology	2
GCC-630	Microbiome in Health and Disease	2
GCC-642	Biosolid Mechanics	3
GCC-650	Neuroscience for Basic & Clinical Applic	3
GCC-652	The Changing Nervous System	2
IMM-507	Basic Immunology I	3
IMM-508	Basic Immunology II	3
IMM-510	Advanced Immunology I	4
IMM-610	Special Topics	1-12
NEU-591	Advanced Neuroscience Proseminar	2
PHY-503	Physiology of the Striated/Cardiac Muscle	3
BMC-507	Bioengineering Materials	2



## Rush University Course Descriptions

### **ANA - 7EI Basic Science Individualized Elective**

Students may receive credit for an individually arranged elective with a Rush faculty member. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter stating the student's activities, responsibilities, amount of supervision, and specific dates of the rotation. The sponsoring faculty member must complete an evaluation of the student's performance at the conclusion of the elective. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the assistant dean of Clinical Curriculum before beginning the rotation. Students may receive four weeks of credit for an individually arranged elective. Credit for a maximum of only one individually arranged elective will count toward graduation requirements. Elective Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

### **ANA - 500 Neuroscience for Basic and Clinical Applications**

This course is a survey of the nervous system integrating information and topics from the disciplines of anatomy, histology, neurobiology and neurology. The course integrates the structure, function and organization of nervous tissue from the cellular through gross anatomic aspects, including central, peripheral and autonomic portions of the system. The course includes a series of clinical correlation lectures designed to support and augment the basic science content. Beyond an understanding of the normal structure and function of these systems, students will study the development and growth of these components as well as the changes noted in maturation and ageing processes within these systems. Control mechanisms will be considered as the study during this course moves into the specific clinical scenarios. The basic knowledge of the structure and function of the components of the nervous system will then be applied to the abnormal functions that are the basis for disorders and diseases of this system. The course objectives below represent the content of this course. Individual learning objectives for each lecture as well as for the lab and small group sessions are contained within the educational materials for these sessions. Course cross-listed with GCC-650. Prerequisite: courses in human biology or anatomy and physiology or comparative anatomy, and permission of instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **ANA - 599 Master's Thesis Research**

Laboratory research project and preparation of the master's thesis. A letter grade is provided for this course. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-9

### **ANA - 699 Doctoral Research**

Research devoted to the preparation of a dissertation in partial fulfillment of the requirements of the degree program. Prerequisite: permission of program director. This is a pass/no pass course. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 1-9

### **ANA - 781 Research in Anatomy**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout the academic year. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the Director of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of eight weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Clinical Curriculum. Retake course for credit: Yes. Pass/No Pass Grading: No. Credit(s): 4

### **ANA - 791 Surgical Anatomy**

A laboratory program of special dissections and demonstrations. The applied, clinical and surgical aspects of anatomical regions are emphasized. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

### **ANA - 793 Advanced Histology/Cell Biology**

The program will focus on in-depth study of histology/cell biology of regions designated by the participant and agreed upon by the course director. The program will incorporate didactic material with special emphasis on independent study and presentations on topics of interest at the forefront of the designated field. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

### **ANA - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

### **AUD - 592 Grand Rounds**

Scientific, clinical and professional issues in audiology are examined through student case presentations in a clinical rounds format. Oral presentation skills as well as analytical and clinical problem-solving skills are highlighted. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

### **AUD - 602 Anatomy and Physiology of the Auditory System**

This course examines anatomy and physiology of the auditory system: outer, middle, and inner ear and central auditory pathways. Anatomy and physiology of the vestibular system and speech production is also included. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **AUD - 606 Introduction to Neuroscience**

Central and peripheral nervous system structures that form the neurologic foundation for speech, hearing and language are presented. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **AUD - 607 Pathophysiology of the Auditory System**

Students discuss risk factors, symptoms and pathogenesis of various ear diseases and auditory system disorders. Audiologic assessment as well as medical/surgical treatments are explained. Students will also be introduced to concepts related to tinnitus, including the origins, clinical assessment and treatment efficacy. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **AUD - 611 Embryology and Genetics of the Auditory System**

After reviewing basic biology, this course presents basic patterns of biological inheritance and basic human genetics

terminology. Embryologic development of the auditory, vestibular, and craniofacial systems is presented and related to Auditory/speech/balance function following birth. Focus is on genetics and hearing loss. Topics include gene therapy and hearing loss, syndromic and nonsyndromic hearing loss and consideration of pharmacogenomics. The importance of genetic counseling, family history and beliefs, prevention, and ethical/legal issues are discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

### **AUD - 613 Acoustics and Psychoacoustics**

This course describes the basic principles in acoustics regarding sound production, measurement, analysis and perception of sound. Psychoacoustic principles, theories of auditory perception and their relationship to normal hearing are presented. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **AUD - 614 Acoustic Phonetics & Speech Perception**

This course examines the roles of major acoustic, phonetic, linguistic and cognitive factors in speech perception and considers relevant theoretical models. Consideration is also given to cultural, cross-language, developmental and life-span aspects of speech perception. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **AUD - 615 Pharmacology**

The general principles of drug action related to hearing and balance function will be presented. Emphasis will be on activity, mode of action, side effects, toxicity and drug interactions relevant to the practice of audiology. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **AUD - 621 Clinical Methods in Audiology**

This lab course teaches key clinical protocols, methods, procedures and audiologic assessment techniques necessary for clinical practicum experience. The course includes practice with instrumentation, case history, otoscopy, standard audiometric techniques and lab exercises to promote skill development. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **AUD - 622 Clinical Observation in Audiology**

Students learn to identify and apply key elements necessary for introduction to clinical practice, including relevant policies and procedures, infection control, electronic medical records, ethics, privacy and multicultural issues. Students also observe diagnostic and rehabilitative audiologic and

speech and language procedures with infants, children, adults and geriatrics in outpatient, inpatient, and short-term care settings. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **AUD - 623 Audiologic Assessment**

This course presents behavioral tests of the auditory system that provide a differential diagnosis of auditory function, emphasizing a test battery approach. This course is taken in conjunction with AuD-621 Clinical Methods in Audiology. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **AUD - 630 Electrophysiologic Assessment I**

This course introduces principles and practices of electrophysiologic methods in audiologic assessment through both didactic coverage and hands-on practicum. Emphasis is on the auditory brainstem response (ABR) and its contributions to neurodiagnostic assessment of the auditory system and objective estimation of hearing sensitivity. Electrocochleography (ECOG) and electroneurography (ENOG) are also considered. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **AUD - 637 Electrophysiologic Assessment II**

This course builds on the content presented in AUD 630. Topics include advanced concepts in ABR and OAEs, visual and somatosensory responses, and intraoperative monitoring. Theoretic bases and clinical applications are considered for ASSR and late potentials. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **AUD - 640 Basic Amplification**

This course introduces the hearing aid fitting process, including candidacy, selection, verification, orientation and validation. Students learn about the components of personal amplification devices and their role in signal processing strategies. Students obtain hands-on experience, including making earmold impressions, conducting electroacoustic analyses on and troubleshooting hearing aids and measuring real-ear responses. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **AUD - 641 Adult Amplification**

This course expands upon basic hearing instrument technology presented in AUD 640 Basic Amplification. Selection, verification and validation issues surrounding hearing aid fittings with adults are presented. Emphasis is on advanced concepts and practices as well as current research and

trends. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **AUD - 642 Amplification Seminar**

This seminar focuses on contemporary, innovative, evidence-based fitting and rehabilitation issues related to personal amplification systems. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **AUD - 645 Adult and Geriatric Rehabilitative Audiology**

Examination of adult audiologic rehabilitation includes the use of visual, auditory and bisensory stimuli in communication. Assessment of communicative function, auditory training, speechreading, amplification, assistive listening devices, rehabilitative strategies and the psychosocial aspects of adult hearing impairment are examined. Focus is on patient-centered care of adults with hearing loss and incorporating communication partners. Treatment outcome measurement is emphasized. The geriatric population and working-age adults are considered as separate rehabilitative challenges. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **AUD - 650 Vestibular Assessment and Rehabilitation**

Anatomy and physiology of the vestibular and oculomotor systems is reviewed. Emphasis is on VNG/ENG test battery components, delivery, and interpretation, with both didactic coverage and hands-on practicum. Central- and peripheral-based pathologies are discussed and emphasized through interactive case studies. Additional specialized vestibular tests, including SVV, cVEMP, oVEMP, rotary chair, and posturography, are also considered. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **AUD - 651 Vestibular Seminar**

This seminar expands upon concepts and test techniques presented in AUD 650. Advanced concepts, including unilateral peripheral vestibular differentiation, bedside tests of assessment of VOR and VSR, ENG and VNG, rotational test techniques, VEMP testing, posturography, fall risk assessment, and measurement of dizziness handicap are presented via lecture and hands-on practicum, with additional emphasis on vestibular function and dysfunction in pediatric patients and older adults. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **AUD - 660 Pediatric Audiology**

Topics in this course include an overview of cognitive, motor, and language development; pediatric auditory behaviors;

the impact of hearing loss on speech/language development; and age-appropriate procedures for the audiologic evaluation of children. Issues related to audiologic intervention, multiculturalism, and interprofessionalism using team approaches to case management and family counseling are presented. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **AUD - 663 Pediatric Amplification and Habilitation**

Students learn about strategies involved in the management of children with hearing impairment and deafness. Topics include the pediatric fitting process for infants and children, assistive listening devices for classroom and home, communication modalities, auditory skills development, and case management. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **AUD - 664 Educational Audiology**

The broad-based practice of audiology in the school setting involves special issues and considerations. This course covers federal legislation, identification and assessment practices, case management, IEP development, and the effects of hearing loss on educational programming. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **AUD - 665 Auditory Implants**

This course describes and compares various types of brainstem, cochlear, middle ear, and osseointegrated implant technologies. Appropriate assessment, treatment, and management options for implant patients are described. Principles of speech processing and psychoacoustics are related to the cochlear, middle ear, and osseointegrated implant technologies. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **AUD - 667 Auditory Processing**

Students learn the neurophysiologic bases of central auditory processing. The course includes consideration of screening and diagnostic test batteries, results interpretation and implications, and management approaches to central auditory processing disorders. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **AUD - 670 Seminar in Hearing Conservation**

This course includes an introduction to the effects of noise on hearing, sound measurement, noise descriptors, testing, and follow-up. Prevention, hearing conservation procedures, and protective devices are presented. Federal, state, and

local regulations; workmen's compensation; and litigation are also discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **AUD - 671 Seminar in Supervision and Mentorship**

This course addresses key elements of supervision and mentorship, focusing on students. Components include processes that contribute to the goals and various forms of supervision and mentorship; knowledge and skills needed by supervisors and mentors; research and outcome issues in supervision; leadership and supervision; challenges to effective supervision; and other related topics. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **AUD - 672 Seminar in Current Professional Issues**

This course includes exploration, discussion and analysis of 21st century professional issues facing the audiology profession. Technological, political, legal, legislative, and societal changes impacting the practice of contemporary audiology are examined. Topics will reflect current issues and may include career planning and development, credentialing, specialty certification and licensure, cultural competence, scope of practice, and the use of technology in clinical practice. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **AUD - 673 Practice Management Across Settings**

Service delivery models, including private practice, clinics, medical centers, non-profit agencies, industry, government, and other settings are introduced. Issues associated with clinical operations and practice management include business plan development, private practice orientation, trends in healthcare, marketing, cost/benefit ratios, and financial and accounting considerations. Personnel issues, conflict management, and strategic planning are discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **AUD - 682 Investigative Project Planning Seminar**

This course will prepare students for conducting an investigative project. In consultation with the course director and other departmental faculty, students will generate potential research topics for their investigative projects; evaluate their merits; review methods and regulatory requirements for conducting experimental, clinically focused, and evidence-based review projects; perform initial literature review; and determine the appropriate research design. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2



**AUD - 683 Investigative Project**

In this directed course, the student will select and analyze a specific clinical or research question. Completion of the project includes a professionally written paper and a presentation. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**AUD - 690 Clinical Practicum I**

Students are involved in supervised clinical experience with patients of all ages displaying various hearing and balance impairments. Practicum experiences focus on development of specific skills and competencies in the areas of clinical writing, diagnostic evaluation, case history, counseling, and treatment techniques for patients from diverse cultural backgrounds. The relationship of audiology to other health care professions is also examined. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**AUD - 691 Clinical Practicum II**

Students are involved in supervised clinical experience with patients of all ages displaying various hearing impairments. Practicum experiences focus on development of specific skills and competencies in the areas of clinical writing, diagnostic evaluation, case history, counseling, and treatment techniques for patients from diverse cultural background. The relationship of audiology to other health care professions is also examined. Increasing knowledge and skill are expected with each subsequent practicum experience. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**AUD - 692 Audiology Practicum III**

Students are involved in supervised clinical experience with patients of all ages displaying various hearing impairments. Practicum experiences focus on development of specific skills and competencies in the areas of clinical writing, diagnostic evaluation, case history, counseling, and treatment techniques for patients from diverse cultural backgrounds. The relationship of audiology to other health care professions is also examined. Increasing knowledge and skill are expected with each subsequent practicum experience. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**AUD - 800 Internship I**

A four-semester sequence of supervised audiologic patient care in a variety of sites on and off campus. Student clinicians assume increasing responsibility for the full range of basic and intermediate level audiologic diagnostic procedures and interpretation and rehabilitative follow-up. Student clinicians assume caseload management under supervision and develop increased critical thinking skills. Students also

experience administrative and practice management activities. The internship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**AUD - 801 Internship II**

A four-semester sequence of supervised audiologic patient care in a variety of sites on and off campus. Student clinicians assume increasing responsibility for the full range of basic and intermediate level audiologic diagnostic procedures and interpretation and rehabilitative follow-up. Student clinicians assume caseload management under supervision and develop increased critical thinking skills. Students also experience administrative and practice management activities that are consistent with their clinical progress. The internship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**AUD - 802 Internship III**

A four-semester sequence of supervised audiologic patient care in a variety of sites on and off campus. Student clinicians assume increasing responsibility for the full range of basic and intermediate level audiologic diagnostic procedures and interpretation and rehabilitative follow-up. Student clinicians assume caseload management under supervision and develop increased critical thinking skills. Students also experience administrative and practice management activities that are consistent with their clinical progress. The internship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**AUD - 803 Internship IV**

A four-semester sequence of supervised audiologic patient care in a variety of sites on and off campus. Student clinicians assume increasing responsibility for the full range of basic and intermediate level audiologic diagnostic procedures and interpretation and rehabilitative follow-up. Student clinicians assume caseload management under supervision and develop increased critical thinking skills. Students also experience administrative and practice management activities that are consistent with their clinical progress. The internship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 5

**AUD - 850 Externship I**

This externship sequence is a full-time advanced audiologic clinical placement under the direction of the audiology clinical education coordinator and preceptor. Externship is off campus and emphasizes increasing independence with clinical practice as well as participation in clinical operations, administrative, and professional activities. Student demonstrates skill levels commensurate with Externship competencies. The Externship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 7

**AUD - 851 Externship II**

This externship sequence is a full-time advanced audiologic clinical placement under the direction of the audiology clinical education coordinator and preceptor. Externship is off campus and emphasizes increasing independence with clinical practice as well as participation in clinical operations, administrative, and professional activities. Student demonstrates skill levels commensurate with Externship competencies. The externship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 7

**AUD - 852 Externship III**

This externship sequence is a full-time advanced audiologic clinical placement under the direction of the audiology clinical education coordinator and preceptor. Externship is off campus and emphasizes increasing independence with clinical practice as well as participation in clinical operations, administrative, and professional activities. Student demonstrates skill levels commensurate with Externship competencies. The Externship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 7

**AUD - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**BCH - 571 Med Biochem for Grad Students**

Medical Biochemistry for graduate students. Graduate students take same lecture classes as medical students (BCH 501, 502). Instead of classes devoted to clinical studies or case studies in small group discussions, the graduate students receive supplemental lectures focused on experimental techniques, experimental design and biochemical calculations, pH and buffers, bioenergetics and redox chemistry, proteomics, carbohydrate chemistry, lipids, hormone receptors, signaling, and protein turnover. Essay examinations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**BCH - 624 Connective Tissue Biochemistry**

Biochemistry of the extracellular matrix in connective tissues. Topics include collagen genes, structure, types, biosynthesis and diseases; proteoglycan structure, synthesis and diseases, hyaluronan; calcification of connective tissues, bone morphogenic proteins, basement membranes, elastin, fibronectin, extracellular matrix receptors, matrix metalloproteinases, and matrix metalloproteinase gene regulation. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**BCH - 699 Doctoral Research - Biochem**

Biochemistry dissertation research for doctoral students. (P/N only) Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-9

**BCH - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

**BHV - 751 Sleep Disorders**

Diagnosis and treatment of sleep and arousal disorders as recognized by the Association of Sleep Disorders Centers. Major diagnostic categories are reviewed in terms of clinical presentation, etiology, laboratory findings, and potential therapies. Students sit in with outpatients, interview

in-patient consults, and review sleep studies. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **BMC - 506 Human Movements and Kinematics**

This course will cover the following: anatomy of joints — upper extremity: movement of arm, identify the muscle, muscle strength, contribution in daily activity. Lower extremity: movement, alignment, contribution in daily activity. Trunk: spine, lumbar discs, lower back movements, muscles that contribute. Linear kinematics — gait analyses, displacement-velocity-acceleration relationships, examples. Angular kinematics — upper-extremity and lower-extremity joint movement angles, relationship between angular and linear motions, angular velocity and acceleration examples. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **BMC - 507 Bioengineering Materials**

Introduction to biomaterials used in implants and medical devices with an emphasis on orthopedic biomaterials, definition of properties of implant materials, clinical significance and regulatory implications of materials. Properties of metal, ceramic, polymers, composites used in human implant devices. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **BMC - 508 Techniques in Orthopedic Biomechanics**

Orthopedic material testing methods with focus on fatigue testing, corrosion and tribological testing, sensing and measuring techniques in orthopedics, testing methods for hard and soft tissues, motion measurements in gait lab, regulatory aspects of orthopedic implants, use of biomedical imaging in orthopedic biomechanics, modeling of human joints. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **BMC - 509 Mechanics of the Musculoskeletal System**

Loads in musculoskeletal system: static analysis, joint stability, contact forces, Newton's law, Impulse, Moment of Inertia, center of mass, impulse-moment relationship. Tissue Mechanics: Hard Tissue: composition of bone, anisotropy, cortican and cancellous bone, bone adaption. Soft Tissue: articular cartilage, intervertebral disc, muscles. Structural Analysis of Musculoskeletal Systems: bending of beams, twisting, contact stress. Bone-implant Systems: implant materials, joint replacements and their design, hip replacement, knee replacement, shoulder replacement, spinal-disc replacement. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **BMC - 590 Special Topics Biom: Computational Method**

Computer models are being increasingly used for the solution of many complex problems in biomechanics. This course will give the students an insight on how computer models based on numerical methods are applied in orthopedic biomechanics. Students will receive weekly homework, sit for two exams and complete a mini-project based on the applications discussed in this course. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **BMC - 631 Doctoral Research in Biomechanics**

Biomechanics dissertation research for doctoral students. (variable) Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-9

#### **BTN - 523 Career Planning**

The landscape of the job market for biomedical graduates has changed over the past decade in that a wider range of career paths are being pursued. This alteration in the job market requires not only more individualized career planning for each student but also practical adjustments to the traditional course offerings in graduate school to enable our graduates to be more competitive for post-training careers. This course will expose students to essential information that will complement their other didactic and laboratory-based training, and help them identify their strengths to use them to help develop a concrete and effective goal-oriented individualized plan for their career development. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **BTN - 524 Communication & Lab Management**

All aspects of seeking and obtaining the career start with employment are covered. Professional communication is introduced. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **BTN - 525 Exper Models in Disease & Exper Design**

This course will study the role of experimental models in research. The various aspects of experimental models, computer (in silico) to animal models, will be discussed building on principles of experimental design. This course requires the student to critically evaluate published work and develop their model for a given disease. Research problems posed by faculty will be understood, developed and solved by students in a cooperative, interactive application of computer and library resources. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **BTN - 526 Laboratory Management**

The Laboratory Management course introduces the theory, practical application and evaluation of laboratory management principles in research and healthcare, including safety, research, educational methodology, quality control, ethics, laboratory operations and laboratory information systems. Opportunities for building critical thinking, problem-solving and teamwork, communication, management and leadership skills are provided. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **BTN - 527 Introduction to Clinical Bioinformatics**

This course represents a hands-on training in clinical bioinformatics. The students will be tasked with learning the data architecture at Rush University Medical Center. Leveraging this knowledge, the students will be asked to answer several clinical questions. After completion of this course, the students will have generated a clinical query, acquired data on this query, and successfully analyzed the data. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **BTN - 531 Laboratory Techniques I**

Introduction to laboratory techniques, basic techniques with proteins and cells, laboratory safety training and good laboratory practices training with qualifying examination. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

#### **BTN - 532 Laboratory Techniques II**

Cell isolation and cell culture techniques; experimentation with cell cultures; cell cycle, survival, protein and DNA content determination. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

#### **BTN - 533 Laboratory Techniques III**

Basic and extended molecular biology techniques; DNA and RNA work, cloning and protein expression techniques. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

#### **BTN - 534 Laboratory Techniques IV**

Animal husbandry, experimental procedures and techniques. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

#### **BTN - 535 Laboratory Techniques V**

Modern techniques in sample analyses. Protein sample preparation and analysis by HPLC, 2-D electrophoresis, IEF,

mass spec. Intro to proteomics. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **BTN - 536 Laboratory Techniques VI**

Histology and immunohistochemistry techniques. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

#### **BTN - 537 Research Capstone**

This is the seventh course in a series of seven laboratory courses for biotechnology students. The overall purpose of this biotechnology degree is to train students to become effective laboratory technicians. This course will provide an opportunity for BTN students to do independent research projects where they can utilize all their laboratory training to address a specific question. This capstone research project is a culmination of their training. In collaboration with a laboratory partner, the students will design their experiments, plan their time management and execute their design to answer a scientific question. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **BTN - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CDS - 574 Transition Counseling**

Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CDS - 576 Issues in Counseling**

The major focus is on understanding the process of the helping relationship in counseling individuals with communication disorders and their families. Students will consider the impact of cultural and age-related issues, and they will develop skills and competencies needed to influence effectiveness as a communicator. Knowledge of selected counseling theory as it integrates into practice will be acquired. Course may be audited by thesis-track students.

Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CDS - 592 Appl Topics: Comm Disor ds/Sci**

Scientific, clinical, and professional issues in audiology and speech-language pathology are examined using a variety of formats that include student case presentations presented in a clinical rounds format, expert guest speakers and journal club. Oral presentation skills as well as analytical and clinical problem-solving skills are emphasized. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CDS - 615 Pharmacology**

The general principles of drug action related to hearing and balance function will be presented. Emphasis will be on activity, mode of action, side effects, toxicity and drug interactions relevant to the practice of audiology. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CDS - 642 Advanced Topics in Amplification**

Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CDS - 651 Vestibular Assessment II**

This course expands upon concepts and test techniques presented in Vestibular Assessment and Rehabilitation. Advanced concepts, including unilateral peripheral vestibular differentiation, bedside tests of assessment of VOR and VSR, ENG and VNG, rotational test techniques, VEMP testing, posturography, fall risk assessment, and measurement of dizziness handicap are presented via lecture and hands-on practicum, with additional emphasis on vestibular function and dysfunction in pediatric patients and older adults. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CDS - 659 Seminar in Tinnitus Assessment & Management**

The purpose of this seminar is to provide the fundamental knowledge and skills necessary to help individuals with tinnitus self-manage this symptom and to minimize the negative impact on tinnitus on everyday function and quality of life. This seminar will (1) review research on the current understanding of the mechanisms of tinnitus, (2) discuss various approaches toward counseling, assessment, and management and (3) examine the treatment of efficacy of current audiological, medical, and cognitive-based management options. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CDS - 663 Pediatric Ampli & Habilitation**

Students learn about strategies involved in the management of children with hearing impairment and deafness. Topics include the pediatric fitting process for infants and children, assistive listening devices for classroom and home, communication modalities, auditory skills development and case management. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CDS - 664 Educational Audiology**

The broad-based practice of audiology in the school setting involves special issues and considerations. This course covers federal legislation, identification and assessment practices, case management, IEP development and the effects of hearing loss on educational programming. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CDS - 665 Auditory Implants**

This course describes and compares various types of brainstem, cochlear, middle ear and osseointegrated implant technologies. Appropriate assessment, treatment and management options for implant patients are described. Principles of speech processing and psycho-acoustics are related to the cochlear, middle ear and osseointegrated implant technologies. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CDS - 667 Auditory Processing**

Students learn the neurophysiologic bases of central auditory processing. The course includes consideration of screening and diagnostic test batteries, results interpretation and implications, and management approaches to central auditory processing disorders. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CDS - 670 Hearing Conservation**

This course includes an introduction to the effects of noise on hearing, sound measurement, noise descriptors, testing and follow-up. Prevention, hearing conservation procedures, and protective devices are presented. Federal, state and local regulations; workmen's compensation; and litigation are also discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CDS - 671 Seminar in Supervision**

This course addresses key elements of supervision and mentorship, focusing on students. Components include processes that contribute to the goals and various forms of supervision and mentorship, knowledge and skills needed by supervisors

and mentors, research and outcome issues in supervision, leadership and supervision, challenges to effective supervision; and other related topics. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CDS - 672 Seminar in Career Topics**

This course includes exploration, discussion and analysis of 21st century professional issues facing the audiology profession. Technological, political, legal, legislative and societal changes impacting the practice of contemporary audiology are examined. Topics will reflect current issues and may include career planning and development, credentialing, specialty certification and licensure, cultural competence, scope of practice and the use of technology in clinical practice. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CDS - 673 Practice Management & Clinical Operation**

Service delivery models including private practice, clinics, medical centers, non-profit agencies, industry, government and other settings are introduced. Issues associated with clinical operations and practice management include business plan development, private practice orientation, trends in healthcare, marketing, cost/benefit ratios, financial and accounting consideration. Personnel issues, conflict management and strategic planning are discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CDS - 682 Investigative Proj Prep Sem**

This course will prepare students for conducting an investigative project. In consultation with the course director and other departmental faculty, students will generate potential research topics for their investigative projects, evaluate their merits, review methods and regulatory requirements for conducting experimental, clinically-focused and evidence-based review projects, perform initial literature review and determine the appropriate research design. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CDS - 683 Investigative Project**

In this directed course, the student will select and analyze a specific clinical or research question. Completion of the project includes a professionally written paper and a presentation. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CDS - 692 Transition Practicum III & IV**

Students are involved in supervised clinical experience with patients of all ages displaying various hearing impairments. Practicum experiences focus on development of specific skills and competencies in the areas of clinical writing, diagnostic evaluation, case history, counseling, and treatment techniques for patients from diverse cultural backgrounds. The relationship of audiology to other health care professions is also examined. Increasing knowledge and skill are expected with each subsequent practicum experience. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CDS - 800 Transition Internship I**

A four-semester sequence of supervised audiologic patient care in a variety of sites on-and off-campus. Student clinicians assume increasing responsibility for the full range of basic and intermediate level audiologic diagnostic procedures and interpretation and rehabilitative follow-up. Student clinicians assume caseload management under supervision and develop increased critical thinking skills. Students also experience administrative and practice management activities. The internship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CDS - 801 Internship II**

A four-semester sequence of supervised audiologic patient care in a variety of sites on-and off-campus. Student clinicians assume increasing responsibility for the full range of basic and intermediate level audiologic diagnostic procedures and interpretation and rehabilitative follow-up. Student clinicians assume caseload management under supervision and develop increased critical thinking skills. Students also experience administrative and practice management activities. The internship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CDS - 802 Internship III**

A four-semester sequence of supervised audiologic patient care in a variety of sites on-and off-campus. Student clinicians assume increasing responsibility for the full range of basic and intermediate level audiologic diagnostic procedures and interpretation and rehabilitative follow-up. Student clinicians assume caseload management under supervision and develop increased critical thinking skills. Students also

experience administrative and practice management activities. The internship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CDS - 803 Internship IV**

A four semester sequence of supervised audiologic patient care in a variety of sites on-and off-campus. Student clinicians assume increasing responsibility for the full range of basic and intermediate level audiologic diagnostic procedures and interpretation and rehabilitative follow-up. Student clinicians assume caseload management under supervision and develop increased critical thinking skills. Students also experience administrative and practice management activities. The internship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 5

#### **CDS - 850 Externship I**

This externship sequence is a full-time advanced audiologic clinical placement under the direction of the audiology clinical education coordinator and preceptor. Externship is off-campus and emphasizes increasing independence with clinical practice as well as participation in clinical operations, administrative and professional activities. Student demonstrates skill levels commensurate with Externship competencies. The Externship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 7

#### **CDS - 851 Transition Externship II**

This externship sequence is a full-time advanced audiologic clinical placement under the direction of the audiology clinical education coordinator and preceptor. Externship is off-campus and emphasizes increasing independence with clinical practice as well as participation in clinical operations, administrative and professional activities. Student demonstrates skill levels commensurate with Externship competencies. The Externship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 7

#### **CDS - 852 Externship III**

This Externship sequence is a full-time advanced audiologic clinical placement under the direction of the audiology clinical education coordinator and preceptor. Externship is

off-campus and emphasizes increasing independence with clinical practice as well as participation in clinical operations, administrative and professional activities. Student demonstrates skill levels commensurate with Externship competencies. The Externship experience includes patients across the life span and from diverse cultural backgrounds. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 7

#### **CDS - 900 Independent Study**

Independent study courses give students a unique opportunity to pursue a course of study not commonly included in the curriculum. If you are interested in pursuing an independent study, meet with the faculty member you want to work with to define the coursework and expectations. Prerequisites: Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 1-12

#### **CDS - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CHS - TRN External Course Credit-CHS**

This course is used if the content of such courses applies directly to the student's program of study in the college. Courses used can be from another accredited college or university, if approved by the college. A grade of B or better must have been received. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1-15

#### **CHS - TRNR Internal Transfer Credit-CHS**

Rush University recognizes that courses delivered within the colleges in different programs may lead to essentially the same learning outcomes. With the department assigning an equivalency status to courses, this course allows students to receive an internal transfer of credit for identical or equivalent courses when entering another program of study. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1-15

#### **CHS - 364 Health Care Systems & Policies**

This course is designed to inform students of the present structure and design of the health care system. This course discusses the organization and delivery of health services, the economics and financing of health care, the nation's health care workforce, access to and quality of health services. The course explores topics that address current issues in America's health care system. The student will understand what is prompting reform and the significant changes in healthcare reform legislation. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CHS - 601 Introduction to Biostatistics**

This course is designed to develop knowledge of the application of statistics for the health care professional. Material covered in this course includes an understanding of basic descriptive statistics, normality, parametric and non-parametric hypothesis testing and simple linear regression. The focus of the course is to develop a familiarity with statistical concepts and use basic statistics to help with decision making. The course will also provide a basic framework of statistical knowledge, should the student be interested in pursuing additional coursework later in their careers. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CHS - 605 Introduction to Ethics in Health Care**

This interprofessional course will introduce students to the foundational theories and common language of health care ethics. Through review of major ethical issues in health care, students will explore the distinction between law and ethics, the development of professionalism in health care, the clinician-patient relationship, the conceptual and practical challenges of informed consent, and the challenges of distributive and social justice for health policy and clinical practice. This course is highly interactive and divided equally between the classroom and the internet. The classroom portion of the course is a 50 minute weekly lecture covering the assigned readings and objectives, followed by a 50-minute case-based discussion section. The online portion of the course is a webinar and includes weekly lesson activities and related online discussion. The readings for each week are available through the course website and will bridge the classroom and online contents of the course. The course is open to students in the College of Health Sciences. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CHS - 610 Research Methods in Health Sciences**

This course provides an introduction to basic, clinical, and translational research methods. It emphasizes the development of skills to enable the health science student evaluate research articles and participate in clinical research activities. Quantitative research designs, sampling techniques, measurement, and interpretation of common statistical findings are also reviewed. Principles of evidence-based practice are incorporated. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CHS - 620 Health Care in America**

Health Care in America is designed to provide an interdisciplinary overview of the health care system for students entering a health profession. Contemporary issues in America's health care system are addressed to include the organization, delivery, economics and financing of health care; the national's health care workforce; major public health issues to include acute and chronic disease management; issues related to health care disparities, cultural competency and diversity; biomedical ethics; health policy; global health and future directions of the health care system. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CHS - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CLM - 500 Principles of Laboratory Management**

The rapidly changing laboratory environment is constantly responding to diverging trends in health care. This mandates the requirement for effective management. Laboratory managers will need to create new solutions to today's problems. This course is designed to provide a web-based learning approach to teaching the principles of laboratory management. The focus is to present underlying managerial concepts and then assist the learner in the successful application of this information to real-life situations. Book

chapters, Internet references and website resources permit the learner to acquire advanced and current information in each of the major topic areas. Learning units are organized to cover four major areas of management: Basic Principles and Organizational Structure, Human Resources, Finance, and Operations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CLM - 501 Evidence Based Research and Applied Statistics**

Introduction to research methods within the context of health care outcomes is the focus of this course. Emphasis on conceptual understanding of scientific reasoning, research design, data collection methods, analysis, interpretation, and ethical standards in research. Distance learning format. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CLM - 502 Quality Systems & Regulatory Issues**

The complexity of operating a clinical laboratory requires an in depth knowledge of quality systems as well as knowledge of the regulatory requirements at both national and local levels. Laboratory managers will need to understand the principles of the quality system essentials (QSEs) and be able to implement a quality management system (QMS). This course is designed to provide a web-based learning approach to teaching laboratory regulations and the principles of quality management. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CLM - 503 Method Comparison & Process Validation**

This course is designed to prepare laboratory professionals to understand the principles and procedures used to verify manufacturer's claims of analytical performance for in vitro diagnostic products. Determining if total allowable error is exceeded will be emphasized. Topics include compliance with proficiency testing requirements, validation of reference ranges, determination of decision cut-off points, and both quantitative and qualitative method evaluation. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CLM - 504 Scientific & Technical Writing**

This course is designed to develop your scientific and technical writing. It emphasizes a systematic approach to enable you to produce a scientific paper in a well-presented, clear, concise style. You will review basic writing skills and the effective use of library resources to help you comprehend the flow of scientific information. This course will prepare

you to write and submit a paper to a journal of your choice. It should also help to prepare you to write your final management research paper required for graduation Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CLM - 505 Health Care Finance**

This course is designed to provide students with a strong foundation in financial management. Successful managers must be able to analyze financial information such as budgets, income statements and cash flows. Students will be introduced to general financial topics including financial accounting, budgets, capital equipment acquisition, billing and collection, reimbursement issues, contract negotiations and materials management. This course employs a web-based learning approach for students to gather information through book chapters, PowerPoint presentations, and additional readings and internet resources. Knowledge will be demonstrated through online discussions, homework assignments, and online examinations. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CLM - 506 Management Project I**

This course represents the first step to complete a Management Research project for the successful completion of the Masters of Science in Clinical Laboratory Management. The student establishes a topic, performs a literature search and submits a formal proposal for their management research project. It is customary for the student to consult their immediate administrator/supervisor to see if there is a project that would benefit the institution. The student will choose a targeted journal and follow the guidelines in preparing their proposal established by the department. The project approval form is submitted to the Course Director for final approval from the department. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CLM - 507 Issues & Practices in Human Resource Management**

This course will include an overview of the operational and strategic role that human resource management plays in health care institutions. Readings, case studies, internet references and website resources will permit the learner to acquire advanced and current information in human resource management, recruitment and hiring, training and development, compensation and benefits, labor relations (both union and non-union) and health and safety. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CLM - 508 Health Care Informatics**

This course is will include an overview of healthcare informatics. It is designed to provide a web-based learning approach to teaching the principles of laboratory information systems management, and the review processes for selection, installation, building test dictionaries, validation, training and integration with electronic health records. Readings, articles from professional journals, internet references and website resources will permit the learner to acquire advanced and current information in each of the major topic area. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CLM - 509 Management Project II**

This course is the continuation of CLM 506 Management Research Project I and involves completing the project identified in CLM 506 and composing the final paper. The final manuscript should be of publishable quality for submission to the department and to a clinical laboratory management-related journal chosen by the student with the advice of the faculty. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CLM - 510 Management Experience**

The Clinical Laboratory Management Experience is designed to provide exposure to the skills necessary to perform successfully in a laboratory management role. Current practice requires laboratory managers to take decisive actions in areas of operational, fiscal, and human resource management. This Experience will provide students with training in the various practices of laboratory management including planning, organizing, controlling, staffing, and evaluation. Special emphasis will be placed upon laboratory operations, personnel administration, regulations, and operating budgets. The Experience prepares the graduate student to assume the duties of a laboratory manager. This course is essential for all management professionals who pursue a career in Healthcare Management. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **CLM - 511 SBB Management Research Project**

This course represents the Management Research Project for the successful completion of the Master of Science in Clinical Laboratory Management. Specialist in Blood Bank student projects are designed in various areas of the clinical laboratories and focus on clinical testing, management and supervision issues. In this course, the topic is established and a proposal is submitted to the course director for final approval from the department. The approved management research project is completed and the final paper is submitted, which should be of

publishable quality for submission to a journal of the student's choice. It is customary for the student to consult their immediate administrator/supervisor to see if there is a project that would benefit the institution. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **CLM - 513 Legal Issues in Health Care**

The rapidly changing legal environment of health care affects clinical laboratories. Laboratory managers must have a working knowledge of the legal system, and statutes, regulations and case law that affects them. This course provides a web-based approach to learning the essential legal issues affecting laboratory management, using cases, statutes and regulations. Learning units are organized to cover an introduction to the American legal system, health care system organization, relationship between the patient and the laboratory, health care information and privacy, civil tort liability of the laboratory, criminal liability and penalties, and protection of intellectual property. Topics are subject to change as new legal issues arise. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CLM - 900 Independent Study**

Independent study courses give students a unique opportunity to pursue a course of study not commonly included in the curriculum. If you are interested in pursuing an independent study, meet with the faculty member you want to work with to define the coursework and expectations. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 1-12

#### **CLM - 999 Continuous Enrollment**

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#### **CON - TRN External Transfer Credit-Con**

This course is used if the content of such courses applies directly to the student's program of study in the college. Courses used can be from another accredited college or university, if approved by the college. A grade of B" or better must

have been received. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1-15

#### **CON - TRNR Internatl Transfer Credit-CON**

Rush University recognizes that courses delivered within the colleges in different programs may lead to essentially the same learning outcomes. With the department assigning an equivalency status to courses, this course allows students to receive an internal transfer of credit for identical or equivalent courses when entering another program of study. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1-15

#### **CRE - 523 Readings in Clinical Research**

This course consists of seminars evaluating clinical research studies in the literature. Each seminar will evaluate a clinical study, its attributes, as well as the methodological problems. Many of the studies discussed will have been undertaken by Rush Clinical Investigators and one of the investigators will lead the discussion. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CRE - 556 Clinical Research Design**

This course stresses the concepts of clinical research study designs. A detailed look into the need, design, methods, conduct of study, analysis, results, interpretation and inferences of various clinical research designs is the main theme of this course. The objectives are to: 1. Familiarize with the need for clinical research and various clinical research study designs. 2. Understand the reasoning behind the study hypothesis, design and methods. 3. Develop understanding of measurement, bias and randomization in clinical research. 4. Awareness of study procedures and monitoring of Safety and Adverse Events. 5. Critically appraise published medical literature in clinical research design. Retake course for credit: No. Pass/no pass grading allowed: No. Credit(s): 4

#### **CRE - 557 Clinical Trials I**

Presents an overview of all types of trial designs including large simple trials, randomized double blinded trials, crossover studies and others. The course applies concepts obtained in Basic and Observational Epidemiology courses to address how studies are set up to answer specific research questions. The course reviews experimental designs in the context of specific hypotheses, bias, and confounding. Publications from existing peer-review journals will be used to illustrate various trial designs. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CRE - 558 Clinical Trials II**

This course focuses on practical application of the concepts learned in Clinical Trials I. Trainees will be expected to design various types of clinical trials e.g. multicenter, double blind, placebo controlled studies as well as large simple trials and describe rationale for blinding, methods of randomization and planned analysis. Issues of data interpretation will be covered. Prerequisite: CRE-557. Prerequisite: CRE 557. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CRE - 559 Readings in Special Populations**

This course consists of seminars evaluating clinical research studies in the literature. Each seminar will evaluate a clinical study, its attributes and the methodological problems. Many of the studies discussed will have been undertaken by Rush clinical investigators, and one of the investigators will lead the discussion. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CRE - 561 Introduction to Epidemiology**

This course is designed to introduce the theories and concepts of epidemiology. It will provide a comprehensive and accessible introduction to epidemiological methods. Specifically, the course will focus on the application of these theories and concepts to the practice of public health. Topics to be discussed include epidemiological terminology, measurement of disease, disability and health in population groups, vital statistics and reportable disease mechanisms, procedures for infectious and chronic disease control. Course Objectives: 1. Define epidemiology as the study of the determinants of health and illness in populations and the examination of factors contributing to health promotion, 2. Disease prevention and the use of health services. 3. Describe the major epidemiological research study designs and their advantages and limitations. 4. Understand the basic terms and methods used in: (i) outbreak investigation and infectious disease epidemiology, (ii) chronic disease epidemiology, (iii) evaluation of screening tests, and (iv) disease prevention and treatment trials. 5. Identify public and private data resources available for epidemiological studies and evaluate the quality, integrity, and comparability of various data sources; and, 6. Understand and apply descriptive epidemiology principles. 7. Apply ethical principles and cultural sensitivity when accessing, collecting, analyzing, using, maintaining, and disseminating epidemiological data and information. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CRE - 562 Advanced Epidemiology**

This course explores advanced epidemiological techniques that will build upon and the epidemiological knowledge and skills taught in the CRE 561 Introduction to Epidemiology. The course achieves its aims through lectures, tutorials, and assessments. The focus of this is on epidemiological methods with an emphasis on causality in epidemiologic research, theoretical considerations, and interpretations of findings. Objectives: 1. Demonstrate an understanding of epidemiological theory and its application in health science. 2. Critically assess the epidemiological quality of research in a range of studies outlining the basis of methodological approach and criteria for determining the quality of the research. 3. Demonstrate sophisticated interpretation and application of epidemiological methods and principles and explain their relevance to specific study designs. 4. Analyze epidemiological data using statistical analytical software 5. Examine basic concepts of epidemiology as tools to promote the complexity of healthcare systems 6. Evaluate biomarker prognostic studies and multivariate prediction models. Retake Counts for Credit: No. Pass//No Pass Grading Allowed: No. Credit(s): 2

#### **CRE - 597 Thesis Research**

For a students in the Master of Science in Clinical Research program to undertake thesis research. Participation requires a research mentor. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-9

#### **CRE - 900 Independent Study**

Independent study courses give students a unique opportunity to pursue a course of study not commonly included in the curriculum. If you are interested in pursuing an independent study, meet with the faculty member you want to work with to define the coursework and expectations. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 1-9

#### **CRE - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for Fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the College of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **CVP - 605 Cardiopulmonary Anatomy and Physiology**

This course provides an introduction to cardiac and pulmonary anatomy, hemodynamic function and electrophysiology. Students will focus on gas laws and how they apply both to human lung function as well as artificial lung function. In addition, the students will focus on the anatomy and physiology of the human heart and vascular system. Emphasis is placed on the application of these areas as it applies to cardiovascular surgery and perfusion technology. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CVP - 606 Acid Base Physiology**

This course provides the perfusion student with a comprehensive review of the structural, functional, and integrative aspects of the kidney and urinary system. The course will focus on theory, application, and interpretation of blood gas analysis and associated clinical cardiopulmonary physiologic mechanisms that underpin renal function. CVP 605 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CVP - 611 Cardiovascular Perfusion Technology I**

This course introduces the perfusion student to the historical development of both cardiac surgery and perfusion technology. In addition, the students will learn about the basic components of the heart lung machine and their principles of function. Students will also learn the principles of aseptic technique as practiced in the operating rooms and related departments of the hospital. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CVP - 612 Instrumentation in Cardiovascular Perfusion**

This course introduces the student to the various types of electronic monitoring equipment required for open heart surgery and related procedures. Instructional design includes didactic presentation of operational theory with practical operating room experience, simulated scenarios and laboratory study. Topics of study include electrical circuitry, pressure transducers, thermistors, cardiac output devices, fluid dynamics and physiologic monitoring devices. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CVP - 615 Cardiovascular Perfusion Technology II**

This course will focus on adult cardiac and thoraco-aortic surgery. Lectures will focus on acquired adult cardiac and aortic disease states and appropriate equipment, circuits and ancillary equipment used by the perfusionist. Students will practice perfusion setups and provide presentations on

current perfusion practices related to adult cardiac diseases. CVP 611 & CVP 612 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CVP - 620 Evaluation of the Cardiac Surgery Patient**

This course introduces the basic diagnostic principles involved in determining the nature and extent of the disease necessitating surgical intervention. Factors that are important in determining perioperative morbidity and intraoperative perfusion management (e.g. patient medical history, laboratory results, diagnostic tests, etc.) will be discussed. Course work will include class time and observations within the clinical arena. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CVP - 621 Seminar I**

This course is designed to give students a basic understanding of medical terminology, aseptic technique, patient safety issues, professionalism and medical ethics. Students will be introduced to ethical principles often encountered in the health professions. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 3

#### **CVP - 622 Pathophysiology and Perfusion Techniques**

This course is designed to provide the perfusion student with an opportunity to explore the association of anatomy, physiology and pathophysiology and the application of perfusion practice. The course will provide the detailed foundation and skills necessary to understand the interplay between the science of extracorporeal technology and the pathophysiologic considerations. Identifying and applying these principles in a systematic and integrated manner is required for evidence-based clinical practice. CVP 611 & CVP 612 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 5

#### **CVP - 623 Adult and Pediatric Congenital Heart Disease**

This course introduces the student to the cardiovascular physiology, pathophysiology and anatomical differences associated with pediatric and adult congenital heart patients. Through lectures and discussion, the students will be prepared to understand these defects as well as how a perfusionist manages the heart lung machine during these complex congenital procedures. Prerequisite: CVP 605. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CVP - 624 Mechanical Circulatory Support**

This course introduces the student to the advance practice guidelines for the care of patients treated with cardiac assist devices. Device selection based on patient issues, implantation, operation and monitoring of various devices will be discussed. These devices, including cell savers, ventricular assist devices, extracorporeal membrane oxygenation, balloon pumps, etc. will be reviewed to give the students an understanding of the devices they will be encountering in the field. Prerequisite: CVP 622. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CVP - 632 Principles of Pharmacology**

Students will learn the fundamental principles and concepts of pharmacology. Discussions will focus on the principles of drug absorption, distribution, and metabolism; drug receptor activities, and the therapeutic uses and mechanism of action of drugs in each major drug group. Prerequisite: CVP 620. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **CVP - 640 Principles and Practices of Cardiopulmonary Bypass with Simulation**

This course prepares the student for their perfusion practicum courses. The principles of extracorporeal circulation will be presented in lecture and applied during simulation and laboratory experiences. Students will prepare specific care plans for patient bypass procedures. Performance standards evaluated include: prebypass assessment of the patient's hemodynamics and readiness for bypass, the institution and management of cardiopulmonary bypass, anticoagulation status, system and patient monitoring, as well as procedural awareness. Each experience will conclude with a de-briefing to allow progress thru the stages of learning. Prerequisite: CVP 622. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **CVP - 641 Perfusion Practicum I**

This is the first clinical rotation the student will have during their course of study. The students will continue to review the diagnostic work up procedures and apply their knowledge to develop a perfusion management plan for the patient undergoing cardiac surgery. The student will begin to assist in the operation and management plan for the patient. During this rotation students will be tested on competencies required to prepare them for perfusion practicum II through simulation, oral exams and a written exam. Prerequisite: CVP 622 and CVP 632. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **CVP - 642 Perfusion Practicum II**

This is the second clinical practicum experience for the student. Each course builds on the skills in the previous clinical and didactic courses. The overarching goal of the practicum series is that the student shows steady progression towards the goal of independent practice while under the watchful eye of the clinical instructor. Prerequisite: CVP 641. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 12

#### **CVP - 645 Perfusion Practicum III**

The principal goal of this final practicum experience is that the student will be capable of performing perfusion related duties supervised, but without instructor intervention. Prerequisites: CVP 641 and CVP 642. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 12

#### **CVP - 661 Master's Project I**

The purpose of this course is to provide the perfusion student with the ability to perform research. The student will be introduced to the concepts of the IRB approval process and learn how to complete a literature review, collect data, complete a statistical analysis and write a final paper on their research as applicable to their projects. In the CVP 661-662-663 course series, students will complete a research project. CHS 601 & CHS 610 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CVP - 662 Master's Project II**

The goal of this course is to integrate qualitative methods with perfusion technology knowledge and skills to test a hypothesis that addresses a current issue that is important to management of perfusion technology related to health care. Prerequisites: CHS 601, CVP 610 and CVP 661. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CVP - 664 Master's Project III**

This course will focus on completion of the research project for satisfaction of the graduation requirement. The student will be required to present the progress and findings of their research. Prerequisite: CHS 601, CVP 610, CVP 661 and CVP 662. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CVP - 680 Organizational Leadership**

The Organizational Leadership class will focus on the tools and strategies necessary to become an effective leader. While the focus will be on how these strategies can be used within a large or small perfusion group their origin is

based in effective management and leadership within any organization of any size. Upon completion of this class the student will have been exposed to the leadership skills that will prepare them as a future leader in the profession. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CVP - 681 Health Care Quality and Operations Management**

The Health Care Quality and Operations Management class is designed to expose the student to principles that foster continuous improvement within an organization through Continuous Quality Improvements (QCI) and Quality Assurance (QA) initiatives. QA has become a mandatory component of every profession in the business of delivering patient healthcare and it is critical that all future leaders have been exposed to these principles. Upon completion of this course the student will have a solid understanding of how to insure evidence based medicine is being delivered. Prerequisite: CVP 680. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **CVP - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **DRM - 7EI Dermatology Individualized Elective**

Students may receive credit for an individually arranged elective with a Rush faculty member. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter stating the student's activities, responsibilities, amount of supervision, and specific dates of the rotation. The sponsoring faculty member must complete an evaluation of the student's performance at the conclusion of the elective. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the assistant dean of Clinical Curriculum before beginning the rotation. Students may receive four weeks of credit for an individually arranged elective. Credit

for a maximum of only one individually arranged elective will count toward graduation requirements. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **DRM - 716 Dermatology**

Dermatologic problems are studied under the direct supervision of the departmental faculty; diseases are considered from the standpoint of etiology, pathogenesis, diagnosis, course, and treatment. Clinical and histopathologic correlations are emphasized. Skin therapeutics is taught stressing biochemical and physiological considerations. There is a written final examination based on assigned reading. Third-year students may take this elective only in May/June of their M3 year. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **DRM - 781 Research in Dermatology**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout the academic year. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the director of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of eight weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Clinical Curriculum. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-8

#### **EMD - EXM Emergency Medicine Exam Remediation**

Remediation of course examination. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **EMD - REM Emergency Medicine Clinical Remediation**

Remediation of clinical weeks. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **EMD - 703 Core Clerkship: Emergency Medicine**

Students are primarily responsible for the clinical management and documentation of patients, including performing

an initial and any subsequent assessments, ordering and interpreting any diagnostic workup, discussing the case with any consultants or admitting teams. Emphasis is placed on the student learning how to perform a focused evaluation of an undifferentiated patient, particularly the formation of a differential diagnosis and strengthening clinical decision making skills. Required in M4 Year Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **EMD - 716 Emergency Medicine**

Students evaluate adult and pediatric patients in the Emergency Room under the supervision of an attending physician. Fourteen eight-hour shifts are required over the four-week block. There will be at least two weekend shifts, two night shifts, and two evening shifts (actual scheduling will take place at orientation). Grading is based on clinical performance, participation in didactic sessions, a presentation at the end of the rotation and an oral exam. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **EMD - 717 Disaster Medicine**

In this course, students are exposed to the concepts of managing a disaster scene (triage, incident command structure and performing a hazard vulnerability analysis). Activities are conducted through the use of web-based study modules, discussion forums, and internet chat. Students complete a hazard vulnerability analysis project (through a discussion forum). Fundamental disaster medicine concepts regarding chemical, biological, radiological, nuclear, explosive (CBRNE injuries), in addition to natural disasters and psycho-behavioral implications of such events, are also completed online. Each module will be followed by a short quiz to test comprehension. A final exam including a specific disaster scenario (presented online) will also be administered. Upon completion of this rotation, the student will be able to: 1. Describe the fundamental concepts of Hospital Incident Command System (HICS) 2. Differentiate the various categories underlying triage in disaster situations 3. Apply the concepts of Hazard Vulnerability Analysis 4. Describe the essential elements behind Chemical Biological Radiological, Nuclear, Explosive (CBRNE), and natural disasters 5. Explain the essential psycho-behavioral implications of disasters. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

#### **EMD - 720 Emergency Medicine Ultrasound**

The Rush Emergency Ultrasound Elective is designed to provide Students with the opportunity to learn foundational knowledge in using an ultrasound examination within

Emergency Medicine Ultrasound through didactic learning then hands-on practice with real patients. At the end of the course, students will be able to: describe the clinical applications of ultrasound in the emergency setting; successfully perform an ultrasound examination of the aorta and focused assessment with ultrasound for trauma (FAST) as well as identify positive and negative findings of the aorta and FAST examination. Students have a choice of taking this elective for two or four weeks. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **EMD - 722 Pediatric Emergency Medicine**

Students evaluate pediatric patients in the Emergency Room under the supervision of an attending physician. Evening and weekend shifts are included. The student is required to attend teaching conferences in the Emergency Department and to present an informal lecture on a pediatric emergency medicine topic. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **EMD - 740 Medical Toxicology**

The Rush Medical Toxicology Elective Course is designed to educate students about the pathophysiology, presentation, and treatment of acute drug overdose and withdrawal, increase students understanding of the value of the poison center in treating poisoned patients, value bedside evaluation as well as increase their understanding for the approach to and treatment of patients with substance use disorders in the hospital. Students will have the opportunity to care for poisoned patients, apply their bedside knowledge and gain first-hand experience in the possible complications in order to help them become thoughtful prescribers. Students have a choice of taking this elective for two or four weeks. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **EMD - 781 Research in Emergency Medicine**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout the academic year. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the director of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may

not apply to the rule of eight weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Clinical Curriculum. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-8

#### **EMD - 830 Medical Toxicology/Poison Control**

This course introduces the student to the nature and scope of poisoning. The Illinois Poison Center covers the entire state of Illinois and handles 90,000-100,000 calls per year from individuals and healthcare facilities. The goal for the medical student is to develop a basic understanding on acute poisonings. In addition, the student will be knowledgeable about the public health role of the Poison control Center and Medical Toxicologists in managing poisons throughout the state, and its interface with the public and health care facilities. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **EMD - 831 Emergency Ultrasound**

This course provides students with an introduction to emergency ultrasound as well as an inside look into emergency medicine. Students are evaluated across core competencies based on interactions with patients, total number of scans, accuracy and participate in didactics, journal clubs, image review sessions and research meetings. Students determine when an emergency ultrasound exam is indicated, discuss the examination with the patients and obtain informed consent, obtain US images, interpret US images and work with primary clinical staff to integrate US findings into patient management. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

#### **FAM - 7E1 Family Medicine Individualized Elective**

Students may receive credit for an individually arranged elective with a Rush faculty member. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter stating the student's activities, responsibilities, amount of supervision, and specific dates of the rotation. The sponsoring faculty member must complete an evaluation of the student's performance at the conclusion of the elective. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the assistant dean of Clinical Education before beginning the rotation. Students may receive four weeks of credit for an individually arranged elective. Credit for a maximum of only one individually arranged elective will count toward graduation requirements. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4



**FAM - 705 Family Medicine Leadership Program (FMLP)**

The Family Medicine Leadership Program (FMLP) is a four-year, longitudinal curriculum designed to help meet the health needs of the population by training a select group of primary care focused medical students to become family medicine providers, mentors and leaders. The curriculum emphasizes patient-centered, community-based, interdisciplinary and experiential learning, with leadership development throughout the full four years of the student's undergraduate medical education. Students are assigned to outpatient practices that will serve as their longitudinal "home base" for their entire medical school experience. They are supervised by family medicine faculty mentors and become an integral part of the community-based care team, gaining an appreciation for continuity of care by following their own panel of patients over time, observing the course of illness and recovery. The students participate in extracurricular activities and learning activities that emphasize the patient-centered medical home, promote community service and scholarly pursuits, requiring independent study and self-directed learning, allowing for significant personal and professional growth. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

**FAM - 710 Subinternship: Family Medicine**

An intensive inpatient primary care experience at Rush Copley. The subintern will function in a capacity similar to an intern, with supervision by a senior Family Medicine resident and faculty physician. Required in M4 Year Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**FAM - 725 Alcohol/Chemical Dependency**

In this course students develop skills in interviewing and managing alcoholic and other chemically dependent patients. A longitudinal interdisciplinary experience is stressed, emphasizing detoxification, rehabilitation, and outpatient treatment. Can be taken for either two or four weeks. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

**FAM - 735 Primary Care Sports Medicine**

The focus of this course is on outpatient management of acute and chronic sports and exercise-related injuries and medical issues pertinent to athletes in a multidisciplinary setting. Emphasis will be placed on the diagnosis and treatment of musculoskeletal problems common to athletes. In the context of sports medicine, the student will get exposure and improve proficiency in musculoskeletal physical

examination, imaging (such as plain films, MRIs, and bone scans); biomechanics; physical therapy, physiology and metabolism; nutrition; and sports psychology. In addition to the clinical issues, the philosophy of primary care sports medicine is explored, and the aspects of prevention in sports medicine is highlighted. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

**FAM - 741 Urban Primary Care**

An advanced preceptorship with three family physicians in an urban practice. Students are expected to initiate and complete a research or quality improvement project focusing on preventive health services or the enhancement of access to medical care for minority communities. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

**FAM - 745 Private Practice Preceptorship**

A preceptorship with an experienced family physician, both at the office and in the hospital. The student works in all areas of a busy physician's practice. Multiple sites in Chicago and suburbs are available. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**FAM - 761 Principles and Practice of Wound Care**

This course is designed to introduce the student to the multidisciplinary approach used in the management of chronic wounds, including the evaluation and treatment of these wounds in the context of underlying complex medical conditions (such as diabetes mellitus, renal failure, osteomyelitis, arterial insufficiency, spinal cord injuries, peripheral vascular insufficiency, and resistant infections). Students are introduced to new developments in the field of wound care (platelet derived GF, skin grafting, vacuum assisted closure, compression pumps/wraps, etc.). Since the patients return to the clinic on a weekly basis for ongoing treatment, students have the opportunity to participate in continuity of care, and observe the wound healing. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

**FAM - 781 Research in Family Medicine**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout the academic year. Students must submit a proposal to the Office

of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the director of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of eight weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Clinical Curriculum. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-8

**GC - TRN External Transfer Credit-GC**

This course is used if the content of such courses applies directly to the student's program of study in the college. Courses used can be from another accredited college or university, if approved by the college. A grade of B or better must have been received. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1-15

**GC - TRNR Internal Transfer Credit-GC**

Rush University recognizes that courses delivered within the colleges in different programs may lead to essentially the same learning outcomes. With the department assigning an equivalency status to courses, this course allows students to receive an internal transfer of credit for identical or equivalent courses when entering another program of study. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1-15

**GCC - 501 Molecular Bio: Genome/Proteome**

DNA structure, replication, recombination, cloning, sequencing and related topics will be covered. This course will continue with organization of the human genome, the cell cycle, genetic mapping and relationships between genes and diseases. Transcriptional and translational regulations will be included. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**GCC - 502 Cell Biochem: Pro, Trans, Signl**

Concepts of cellular biochemistry, which underlie the structure, organization and communication of cells, will be presented. Protein, carbohydrate and lipid structure and function in cellular organization and their metabolism will be covered. Special emphasis will be placed on the roles of enzymes, signaling systems, receptors in cell function. Intermediary metabolism in health and disease will

be discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 3

**GCC - 503 Functional Cell Biology**

The major concepts of cell structure and function will be covered. Topics include tissue origin and organization, extracellular matrix, cytoskeleton, cell-cell adhesion, organelles and compartments, endocytosis, exocytosis, metabolic requirements for signal transduction, cell motility and regulation of cell proliferation. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**GCC - 504 Functional Tissue Biology**

The biochemical and cellular basis for tissue structure and function will be covered. Topics include systems histology and anatomy, immunity, tissue injury and repair/regeneration, regulation of cell-cell adhesion, apoptosis and endocrinology. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**GCC - 505 Techniques in Biomedical Sciences**

The first portion of this course will introduce students to the laboratories and share a deeper look into the research opportunities available at Rush. The laboratory portion of the course will provide a didactic overview and a demonstration of certain laboratory techniques. Topics include electrophoresis, genomics, PCR, tissue culture, cell-sorting techniques, ELISA, chromatography/LC mass spectrometry, imaging techniques, histochemistry and microscopy. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 2

**GCC - 506 Biomedical Ethics**

The major issues of honesty and fairness as practiced in the scholarly pursuit of new knowledge will be reviewed. Topics include equal opportunity and non-discrimination, abusive relationships, student-faculty relationships, responsibilities of students, faculty, chairpersons and administrators, honesty in writing, authorship, and ownership of data. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**GCC - 507 Biomedical Statistics**

This is an introduction to study design and hypothesis testing. Topics include data definition, study design, probability theory, confidence intervals, hypothesis testing and the techniques used in modern biostatistics. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**GCC - 508 Writing Practicum**

This is a hands-on writing course which focuses on the requirements for abstract, manuscript and grant application writing. Topics include abstract writing, manuscript writing and grant writing. Each topic is covered in several sub-components. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**GCC - 510 Introduction to Pharmacology**

This is a comprehensive course containing topics which are central to Medical Pharmacology. This course will extend throughout one semester and will cover all major topics in Pharmacology supported by the related Physiology content in GCC 504. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**GCC - 511 Readings in Molecular Biology**

Journal Club course that covers topics related to GCC-501. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**GCC - 512 Readings in Cellular Biochem**

Journal Club course that covers topics related to GCC-502. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

**GCC - 515 Advanced Studies on Molecular, Cellular, and Functional Tissue Biology**

This course will follow GCC-501-504 courses to provide a deeper and further understanding to MS and PhD students by augmenting current advances on the functions of selected organs at molecular, cellular and tissue levels with respect to their normal and/or pathological states. With the completion of this course, students are expected to comprehend advancements made on the functions of these organs as well as will be able to develop thought process for their own research works. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**GCC - 516 Foundations in Biomedical Sciences**

The core curriculum GCC 516 is a foundation course encompassing the areas of tissue, cell and molecular biology. The course is 7 credit hours consisting of five parts to be offered sequentially. Graduate education in the biomedical sciences is ever changing to adopt and accommodate recent developments in the field. To better equip students to cope with the emergence of evolving diseases and their pathophysiology, a single discipline-based curriculum is being changed to foundation courses in an integrated curriculum

structure. In addition to classroom didactic lecture sessions, these courses will also reinforce basic concepts of biological processes through break-out discussions and hands-on sessions. Topics of the core courses are selected and arranged in such a way that after completion of the courses, students will be ready to enter any of the specific areas of the IBS PhD and MS programs. The approach of the proposed course includes the introduction of basic organ systems and processes of the human body followed by cellular and molecular regulation of their functions in health and disease. Of the three main parts, molecular biology constitutes the last part of the courses. Thus, students will be able to apply immediately the knowledge and techniques of molecular biology to their dissertation or thesis work. Finally, in designing the course, special emphasis was given to avoid duplication among topics and it will save the valuable academic time of the students and thus, they will have more time available for their lab work. Readings and other assignments will be provided on Blackboard. The students will review material and generate questions that will be the focus of interactive small group sessions. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 7

**GCC - 519 Intro to Neuroscience**

This course will provide students with an understanding of basic graduate neuroscience topics. At the completion of this course, the student will learn: 1. Describe the components and anatomy of the nervous system (central nervous system and peripheral nervous system) 2. Describe the molecular and cellular physiology of neurons 3. Understand the functional and structural organization of the human brain including the central nervous system (brain and spinal cord) and peripheral nervous system 4. Learn about learning and memory neurological disorders Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**GCC - 530 Laboratory Rotations I**

Hands-on experience in a laboratory to provide the student with an understanding of laboratory interests and learn research protocols. Repeatable for exposure in different labs. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1-9

**GCC - 531 Topics in Biomedical Integration I**

Seminar and hands-on course to demonstrate the skills needed to approach diseases from the molecular, cellular and organ system levels. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 2

**GCC - 532 Topics in Biomedical Integration II**

Comprehensive exam project. Student demonstrates proficiency in approaching a disease from the molecular, cellular and organ system levels. Utilizing all coursework from the first year. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 3

**GCC - 533 Laboratory Rotations II**

Hands-on experience in a laboratory to provide the student with an understanding of laboratory interests and learn research protocols. Repeatable for exposure in different labs. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1-9

**GCC - 534 Laboratory Rotations III**

Hands-on experience in a laboratory to provide the student with an understanding of laboratory interests and learn research protocols. Repeatable for exposure in different labs. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1-9

**GCC - 544 Advanced Biomedical Statistics**

This is an advanced course that will cover principles of Biostatistics in the context of biomedical science. Topics include basic and advanced statistical theory and techniques for experimental design and analysis of biomedical data. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**GCC - 546 Principles of Biostatistics I**

Covers statistical issues in clinical trial design. This includes blinding, randomization, bias, and intent to treat. Use of descriptive statistics and graphical techniques to explore patterns in data. A review of the basic properties of probability and the characteristics of the normal and binomial distributions. One and two sample inference and hypothesis testing for proportions, means and medians, one way analysis of variance and simple linear regression including diagnostics based on residuals and confidence intervals for regression coefficients are covered. Hypotheses testing for cross-classified data are also discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**GCC - 547 Principles of Biostatistics II**

Covers multifactor analysis of variance, multiple regression, logistic regression including Hosmer-Lemeshow goodness-of-fit and receiver-operating curves. Survival analysis including log rank tests, Kaplan-Meier curves and Cox regression are covered. Additionally, statistical software packages such

as SAS or SPSS are discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**GCC - 548 Bioinformatics**

This course provides a practical, broad-based foundation in biomedical informatics. Topics in acquisition, analysis, and storage of information in health care, biomedical research, and public health will be presented. The course will primarily use a problem-oriented interactive format to illustrate meaningful applications of information technology. Publicly available large data sets and tools will be used to teach basic techniques in data collection and queries, visual presentation of data, comparative effectiveness analysis, decision support, natural language processing, and genomics. No computer programming skills are required. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**GCC - 549 Bioinformatics II**

This course presents introductory material on methods and procedures with Medical Bioinformatics and how such data can be used for process research relative to quality, safety and health outcomes research. Topics will include use of EHR data for research. The role of “big data” such as with EHRs or other large medical data resources in conducting “pragmatic” clinical trials. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**GCC - 550 Practical Bioinformatics for the Biomedical Sciences**

This course will introduce biomedical graduate students to standard concepts in bioinformatics. In addition to reviewing different topics within bioinformatics, the course will offer practical lessons and hands-on exercises for students to practice common bioinformatics techniques, such as genome alignment, variant calling, and statistical analysis. Students will be introduced to the Linux command line interface used by most open source bioinformatics tools and “R” for statistical analysis and data visualization. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**GCC - 551 Ethics and IRB**

This course provides the framework around which clinical research projects are based in terms of the Institutional Review Board. The course includes didactic lectures on the legal requirements of informed consent, regulatory processes, intellectual property, the role of the office research integrity as well as required participation on IRB review panels inside the University. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **GCC - 552 Intro to Regulatory Process**

Lectures cover the process of Drug and Device Discovery, the IND or IDE process, preclinical research, clinical research process for Drug and Device studies, New Drug application, international drug development guidelines, IRB in drug research, device development, reporting adverse drug reactions, the use of biologic markers in trials, drug metabolism, Genetics in Drug Development and orphan drug development, as well as PK/PD modeling in Drug Development. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **GCC - 590 Graduate Human Anatomy**

This intensive introduction to human gross anatomy is a broad survey of the structural organization of the human body. Clinical implications and how disease and/or injury affect normal anatomical structure/function are emphasized. Laboratory sessions are conducted regionally on cadaveric dissections and encompass the back, extremities, thorax, abdomen, pelvis, perineum, and the head and neck. Lectures and small group discussions prepare students for lab and allow students to apply their knowledge of anatomy to clinical cases. Each examination consists of a laboratory practical and a written component. Retake course for credit: No. Pass/no pass grading allowed: No. Credit(s): 5

### **GCC - 593 Introduction to Grantsmanship**

The course builds on Tools for Research. The aim of this course is to teach the trainee how to organize and highlight the most important parts of a grant proposal. The course emphasizes writing style, consistency and integration of thought. All aspects of an NIH proposal are emphasized including the genesis of the budget and budget justification. P/N grading for clinical research students. Letter grade available for other majors. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

### **GCC - 598 Pre-Proposal Research for Integrated Biomedical Sciences**

Laboratory research in an area that will form the basis of a dissertation proposal or master's thesis. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-9

### **GCC - 599 Thesis Research for Integrated Biomedical Sciences**

This course provides credit for the research that forms the basis for scientific presentation, possible publications and ultimately the Master's Thesis. The student performs the research in the Mentor's/Adviser's laboratory and is involved

with proposing, planning, and the execution of the Master's Research. The Mentor and the Thesis Committee assess the research and evaluate student progress in research, research collaboration and the scientific communication of research. Registration requires approval of a mentor by the program director of the Integrated Biomedical Sciences program. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-9

### **GCC - 611 Cancer Biology I**

In this pro-seminar series students will learn the underlying molecular and cellular biology involved in carcinogenesis, tumor growth, and metastasis, with an emphasis on modern techniques and strategies used to dissect these mechanisms and 'target' tumor cells. This course will provide the student with a solid background in general cancer biology with knowledge of the latest concepts in signal transduction, metabolic reprogramming of tumor cells, cell cycle control, and cancer therapeutics as well as a general appreciation of the rapid advances made recently in the area of cancer research. Students will learn: 1) how cellular processes are altered during cancer, 2) how different cancer types are being modeled and studied in the laboratory, and 3) how novel therapeutic strategies are being developed to target an individual tumor based upon its genetic mutational status. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 3

### **GCC - 612 Cancer Biology II**

This is an extension of GCC 611. Basic concepts are applied towards specific organ sites of cancer and actual diagnostic testing. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **GCC - 620 Introduction to Teaching**

This course builds crucial educational skills that Ph.D. graduates will need to function as teachers in academia. Designed as a mentored experience for Ph.D. candidates, the course will offer theoretical and practical experience in graduate teaching. Individually designed series of practicum units will be arranged for each student, which will best support student interests and learning needs to build a teaching portfolio. Over the span of multiple terms, students will enroll in 1-2 credit hours based on prior teaching experiences and recommendations from the Course Director and from their adviser. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-2

### **GCC - 621 Vascular Biology**

This vascular biology course is designed to explore modern concepts of vascular biology and human vascular diseases, and will introduce and discuss current basic and clinical advances in the field. Vascular diseases are the leading cause of death and disability, with more than 17 million deaths worldwide. The course will emphasize molecular aspects of vascular biology, physiopathological processes, and the development of advanced therapeutic technology in vascular disease. The focus on current research directions will provide excellent opportunities for students interested in vascular biology as they plan their own research careers. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **GCC - 630 Microbiome in Health and Disease**

This course will teach students how to think about the microbiome function and potential therapeutics. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **GCC - 642 Biosolid Mechanics**

This course will provide an introduction to continuum mechanics and related constitutive modeling approaches for biological tissues. Continuum mechanics topics include linear elasticity, nonlinear elasticity, viscoelasticity and poroelasticity. Constitutive modeling applications include bone, cartilage, and ligament/tendon skeletal tissues. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **GCC - 650 Neuroscience for Basic & Clinical Application**

This course is a survey of the nervous system integrating information and topics from the disciplines of Anatomy, Histology, Neurobiology and Neurology. The course integrates the structure, function, and organization of nervous tissue from the cellular through gross anatomic aspects including central, peripheral and autonomic portions of the system. The course includes a series of clinical correlation lectures designed to support and augment the basic science content. Beyond an understanding of the normal structure and function of these systems, students will study the development and growth of these components as well as the changes noted in maturation and ageing processes within these systems. Control mechanisms will be considered as the study during this course moves into the specific clinical scenarios. The basic knowledge of the structure and function of the components of the nervous system will then be applied to the abnormal functions that are the basis for disorders and diseases of this system. The course objectives

below represent the content of this course. Individual learning objectives for each lecture as well as for the lab and small group sessions are contained within the educational materials for these sessions. Course cross-listed with ANA-500. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **GCC - 651 Advanced Neuropharmacology/Neurophysiology**

The intent of this course is to teach the student how to think about brain function. The class will utilize the small group/interactive discussion format of selected topics involving nervous system disorder/functions. Students will receive class notes from the Pharm/Physio class and will be expected to review the drugs and drug interactions prior to each class. During the class, the focus will be an in-depth discussion of the pathophysiology of an assigned CNS-disease, -condition, and -function. The relevant anatomy and physiology of the brain areas involved will be discussed by the group with the intent to demonstrate how the pathophysiology emerges and how it is treated. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **GCC - 652 The Changing Nervous System**

To guide student learning in how neuroplasticity occurs in the context of brain development, learning and memory, psychiatric disorders and neurological disease; from genetic, molecular, biochemical and cellular changes to circuit remodeling. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **GCC - 693 Advanced Integrated Bioscience Topics**

This is a session of seminars given by the students to other students and faculty in the University. Additionally, this course monitors students' attendance of other weekly seminars to obtain credit for attending and evaluating these seminars. Students enrolled in the 3rd year of the IBS PhD program are required to attend to share and learn the methods of graduate research being undertaken at Rush. The seminars are to focus on the background into the research undertaken by each student and it should be delivered in a manner that students and faculty not familiar in the subject matter can follow and understand. Observing students are expected to participate by asking questions in the sessions. Students are required to attend one additional seminar each week outside of the scheduled time. Each week, students will submit a report page to the course director of a seminar they have attended summarizing the topic background, the data presented, the conclusions drawn by the presenter and a brief critical analysis of the work. These reports are both to

demonstrate attendance of an additional seminar and to display understanding of the seminar topic presented. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **GCC - 694 Advanced Topics for Translation Cancer Research**

This course is an advanced topics seminar course for PhD students focused on translational cancer research. Some seminar dates will be combined with others in the GCC 694-698 series when seminar integrates biomedical science research topics. PHD in Integrated Biomedical Sciences None NA Required Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **GCC - 695 Advanced Topics Seminar for Cardiovascular & Respiratory Biology**

This course is an advanced topics seminar course for PhD students focused on translational cancer research. Some seminar dates will be combined with others in the GCC 694-698 series when seminar integrates biomedical science research topics. PHD in Integrated Biomedical Sciences None NA Required Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **GCC - 696 Advanced Topics Seminar in Immunity, Infection & Inflammations**

This course is an advanced topics seminar course for PhD students focused on immunity, infection and inflammation research. Some seminar dates will be combined with others in the GCC 694-698 series when seminar integrates biomedical science research topics. PHD in Integrated Biomedical Sciences None NA Required Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **GCC - 697 Advanced Topics Seminar for Musculoskeletal Track**

This course is an advanced topics seminar course for PhD students focused on function and disorders of the musculoskeletal system. Some seminar dates will be combined with others in the GCC 694-698 series when seminar integrates biomedical science research topics. PHD in Integrated Biomedical Sciences None NA Required Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **GCC - 698 Advanced Topics Seminar for Neuro Research**

This course is an advanced topics seminar course for PhD students focused on function and disorders of the nervous system. Some seminar dates will be combined with others in the GCC 694-698 series when seminar integrates biomedical

science research topics. PHD in Integrated Biomedical Sciences None NA Required Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **GCC - 699 Dissertation Research**

This course provides credit for the research that forms the basis for scientific presentation, publications and ultimately the Doctoral Dissertation. The student performs the research in the Mentor's laboratory and is involved with proposing, planning, and the execution of the Dissertation Research. The Mentor and the Dissertation Committee assess the research and evaluate student progress in research, research collaboration and the scientific communication of research. The course spans several terms until the Dissertation Committee approves the Dissertation. Students may register for this course only after they pass their Qualifying Exam. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-9

#### **GCC - 900 Independent Study**

Independent study courses give students a unique opportunity to pursue a course of study not commonly included in the curriculum. Students interested in pursuing an independent study should meet with the faculty member they are seeking to work under to define the coursework and expectations. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 1-9

#### **GCC - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for Fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the College of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **HHV - 711 Medical Ethics**

Collaborating with at least one seasoned ethicist, M4 students study questions and topics that have captured their attention during previous clinical study. In this process, they can explore their own moral reasoning and enhance their ability to conduct moral analysis of clinical medicine. Students may attend clinical events that pertain to their

question, read contemporary or classical ethics literature, review medical research for ethics embedded in evidence-based practice, consult with members of the faculty of medicine, or be involved in other activities that advance their inquiry. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

#### **HSC - 350 Medical Physiology**

This course is designed to provide students with a comprehensive understanding of human physiological function, regulation, and integration as a basis for understanding the complex interaction of specific body systems and their relationship to disease. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **HSC - 352 Professional Writing**

This course is designed to develop scientific and technical writing by providing students with the foundations of grammatical scrutiny necessary to provide quality communication practices and the tools to become proficient at writing professional goals and objectives, as well as clinical and scientific reports. It will also familiarize students with the investigative processes involved in proofreading clinical and scientific reports. The course emphasizes a systematic writing approach that enables students to produce a variety of scientific and technical communications in a well-presented, clear and concise style. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **HSC - 354 Introduction to Health Professions**

This course will introduce the student to the broad array of health occupations and professionals that are essential to the provision of health care. Disciplines in allied health, medicine, and nursing will be reviewed, and the role, function, education, licensure, and scope of practice of the various health professions will be discussed within the context of the health care system in the United States. Core interprofessional health care competencies will be reviewed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **HSC - 356 Biostatistics**

This course will focus on concepts and procedures for descriptive and inferential statistics for continuous and discrete data and data analysis using parametric and non-parametric statistical procedures. Computerized statistical programs, such as SPSS, will be used. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **HSC - 358 Global Health**

This course introduces major global health challenges, programs and policies. The array determinants of health will be examined with a global perspective. Principles and practices of population-based health will be introduced. Causes of poor health access and adverse health outcomes across various populations will be discussed, as well as issues related to cultural competency. This course explores the complexities and dimensions of health and illness through diverse cultural perspectives. Emerging global health priorities and initiatives for health promotion will be explored. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **HSC - 360 Human Anatomy/Lab**

Students will pursue an in-depth study of human anatomy utilizing lectures and a dissection laboratory. The course is regionally based and includes the back and spinal cord, thorax, abdomen, pelvis, upper and lower extremities. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **HSC - 362 Clinical Immunology**

An introduction to the basic concepts and terminology of immunology including structure of the lymphoid tissues, function of immune cells, mechanisms of cellular and humoral immune tolerance and activation and their associated effector functions that lead to pathogen clearance. Mechanisms of immune diseases including transplant rejection, autoimmunity, hypersensitivity and asthma, immunity to tumors and congenital and acquired immunodeficiencies are covered. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **HSC - 364 Health Care Systems and Policies**

Health Systems and Policies is designed to inform students of the present structure and design of the healthcare system. This course discusses the organization and delivery of health services, the economics and financing of health care, the nation's health care workforce, access to and quality of health services. The course explores topics that address current issues in America's health care system. The student will understand what is prompting reform and the significant changes in healthcare reform legislation. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

### **HSC - 368 Genetics**

This is an introductory course in Genetics. Clinical and molecular genetics has become increasingly essential in the medical field. Understanding the cell cycle, DNA and genes is essential in the understanding a variety of disease processes. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 371 Health Education**

The Health Education course introduces students to the fundamentals of patient/client education. The impact of culture, sexuality, language, cognitive ability, socio-economic status and health literacy on patient education will be explored. An overview of basic education and counseling principles, motivational interviewing, and patient education skills will be provided. Students will examine the role of education on patient's/client's ability to cope with health issues, adhere to prescribed treatment plans and encourage positive behavioral health-related changes. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 372 Medical Terminology**

This course will introduce basic word structure and terminology pertaining to body systems. Includes spelling, pronunciation and word usage. Provides a basic overview of medical terms used to describe diseases process, systems, anatomy, special procedures, pharmacology and abbreviations. No previous knowledge of these topics is necessary. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

### **HSC - 400 Independent Study**

Independent study courses give students a unique opportunity to pursue a course of study not commonly included in the curriculum. If you are interested in pursuing an independent study, meet with the faculty member you want to work with to define the coursework and expectations. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-12

### **HSC - 414 Patient Assessment**

Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 425 Health Care Informatics**

This course will introduce students to health informatics. It examines trends and emerging technologies involved in health care delivery and information systems/technology management within diverse health care settings. Content

includes the provider order entry (CPOE), the electronic medical record, pharmacy systems, billing systems, business intelligence/data warehousing systems and bio-surveillance methods. In addition, students will discuss ethical and legal considerations and aspects related to the use of emerging technology and information systems in the delivery of health care. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **HSC - 435 Nutrition**

This is an introductory course in nutrition. Principles of human nutrition and metabolism, as well as nutritional planning for the maintenance of health and wellness across the life span (infant, childhood, adolescent, adulthood, and later) are explored. The course will elaborate on the role of nutrients in the body and how they affect function in the normal human, as well as those with a chronic disease process. The methods and equipment used to provide nutritional analysis will be discussed and demonstrated. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 445 Fundamentals of Neuroscience**

This course will provide an introduction and overview of core neuroscience areas, including membrane physiology, ion channels, cellular neurophysiology, and neuroanatomy. Drug abuse and diseases involving the central nervous system will also be discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 446 Health Care Disparities**

Students will examine aspects of the health care system related to health risk, access, outcomes and cost and associated health care disparities. Causes of poor health access and adverse health outcomes will be discussed, as well as issues related to cultural competency. This course explores the complexities and dimensions of health and illness through diverse cultural perspectives. Social and historical factors that may be involved will be reviewed, as well as possible solutions to ensure access to cost-effective, quality health care. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 447 Epidemiology**

This course introduces students to the principles and practices of epidemiology and provides them with a population-based perspective on health and disease. Students learn basic measurements of frequency and association, and methods employed in describing, monitoring and studying health and disease in populations. Students will gain a working knowledge of key concepts in epidemiology and

biostatistics, and an understanding of key aspects associated with introducing strategic initiatives. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 448 Health Care Ethics**

This course focuses on the basic foundational theories of ethics and practical application of principles of medical and research ethics. Health Care Ethics explores moral values and judgments as they apply to medicine and ethical principles associated with research. It also elaborates on the ethical decision making framework, and ethical principles that govern the practice of medicine. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **HSC - 454 Principles of Biochemistry**

This course will provide students a basic understanding of the structure, properties, functions, and metabolism of proteins, carbohydrates, lipids, and nucleic acids. The analysis and application of these fundamental concepts used for testing organ function and evaluating disease will be discussed. Prerequisite: Departmental permission. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

### **HSC - 455 Pathophysiology**

This course provides an overview of human pathological processes, such as degeneration, inflammation, immune response, metabolic and toxicity, and their effects on homeostasis. Disease etiology, physical signs and symptoms, prognosis, and complications of commonly occurring diseases and their management will be discussed. Prerequisite: Departmental permission. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 458 Microbiology**

This course will provide a review of the general biology of infectious agents and the basic concepts and principles of immunology, including medically important microorganisms and their relationship to disease. Identification, classification, structure and mechanism of action of pathogens, epidemiology, mechanisms causing disease and the biological basis for resistance and treatment will be covered. Assays and other biological techniques used to identify, isolate, and collect samples will also be discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 459 Pharmacology**

This course will provide an understanding of pharmacokinetics and pharmacodynamics of medications used for diagnosis and treatment of a variety of diseases. The basic

principles underlying pharmacological treatments will be stressed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 460 Management Principles**

The students will learn principles of management to include planning, organizing, directing and controlling, management and evaluation of personnel and programs, motivational theory, decision making, conflict management, principles of delegation, and financial management. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 461 Leadership Theory & Practice**

This course will provide an overview of evidence-based methods for developing and evaluating leaders and leadership. It will examine leadership theory, various management styles, and organizational behavior theory. Discussion will focus on practices and principles related to developing leadership skills. Students will enhance their self-awareness concerning strengths and development needs as they relate to their career aspirations, through activities such as multi-source feedback and reflective learning. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 462 Practicum**

The practicum builds upon the theoretical knowledge and techniques introduced during didactic courses in the first year. Students will complete practicum experiences in a variety of health professions. Offerings may include nursing, medicine, and various allied health fields. Students will shadow the health care provider as they conduct their day to day work. Student rotations will generally be 10-15 hours per week, depending on preceptor availability. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 9

### **HSC - 464 Capstone**

The capstone course is designed to prepare students for the transition from undergraduate studies to professional education. Students will analyze current health care trends and professional issues in an identified health specialty, including an overview of educational requirements and labor market trends. Students will evaluate how their career interests realistically match their skills and qualities in order to develop a plan for their next professional development steps. Students will develop a career portfolio which synthesizes their academic and professional accomplishments. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 467 Issues and Trends in Health Care**

Current issues and trends in health care are discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 480 Principles of Health & Wellness**

This course provides students with a holistic overview of the multi-faceted dimensions of health and wellness across the life span. The seven dimensions of health: physical, social, intellectual, emotional, occupational, spiritual, and environmental are explored within the context of a wellness lifestyle. They will also learn about aligning client needs and wants with best practice program design, implementation, and evaluation for successful results. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 483 Community Health**

This is an introductory course on concepts, structures and activities in community and public health practice. This course will explore the major areas of community health, epidemiology, health systems management, public health policy, public health advocacy, environmental and behavioral health sciences. Special topics in community health sciences will also be examined with a focus on health disparities/health equity in Chicago. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 485 Fitness & Health**

This course provides students with an understanding of exercise physiology, conditioning, and strength and endurance training. It will also provide the knowledge and skills needed to develop diet and exercise programs in respect to the participants' body type to achieve their desired health and fitness goals. The laboratory exercises will provide hands on experience with commonly used strength and conditioning equipment. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**HSC - 486 Chronic Disease Management**

In this course, students will be introduced to specific chronic diseases commonly treated in the medical home model, such as COPD, diabetes, asthma, and congestive heart failure. Proper disease management techniques will be discussed, along with lifestyle alterations that can reduce the detriment of these afflictions to patient quality of life. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 488 Research Methods**

This course uses the construction of research proposals and reflective journal entries to introduce student to methods of scientific research including review of literature, research designs, sampling techniques, data analysis and related issues. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 631 Composition for Effective Professional Writing**

This course develops the learner's professional writing for dissertation and publication. Focus will be on the process of writing, grammatical style, composition structure, and APA format. Topics will include analytical literature review, critical self-reflection, plagiarism, and team writing. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 632 Leadership Theory**

Provides an overview of evidence-based methods for evaluating and developing leaders and leadership. Topics include: the history of leadership assessment and leadership theory; use of validated assessment methods in measuring leadership (e.g. interviews, assessment centers, and cognitive and objective assessments); applications of adult development and career development theory; and organizational approaches to leadership development (e.g. talent reviews, developmental assignments, 360-degree feedback, and succession/acceleration programs). Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 633 Leadership in Higher Education**

Principles of leadership in the context of organization and administration of higher education and the academic department will be discussed. Governance of higher education to include organization, control, funding, and evaluation will be described and the principles of leadership as they relate to the administration of the academic department will be discussed. Principles of leadership to include strategic planning, organizational change and conflict management. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 634 Issues and Trends in Healthcare**

Current issues and trends in health care are discussed. An overview of the United States health care system, its history, structure, major components and overall performance is provided, followed by a review of the interrelationships among various trends and forces that are likely to shape the roles and responsibilities of health care institutions in the future.

The learner becomes well versed in the major issues facing the health care industry and the public/private/individual roles needed to address these issues. Concepts in organizational behavior, health economics, health care finance, health care planning and marketing, and health insurance and managed care are discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 641 Education Theory and Methods**

This course provides a foundational examination of behaviorism, humanism, cognitivism, social cognitivism and constructivism. Learning theories are presented relevant to higher education and professional education contexts. Research on evolving learning sciences focused on andragogical constructs will be explored. The learner will engage in application of education theory to instructional methods and evaluation. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 642 Curriculum and Instruction**

This course provides hands-on participation with developing competency-based curricula for health science education programs. Principles of program curriculum, course curriculum and module design are presented. Construction of learning objectives with alignment to the development of instructional methods, activities and formative assessments is emphasized. Special attention is placed on the e-learning framework as the learner directs a teaching experience. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 643 The Adult Learner**

This course expands the learner's knowledge of adult learning from basic theories to include the role of autonomy and critical thinking. The learner will explore learning theories and models related to these concepts, identify the roles of both the learner and educator within the context of each theory/model, and discuss the implications of autonomous learning and critical thinking on programming, curriculum, and instructional practice. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 651 Advanced Biostatistics**

This course will focus on using descriptive and inferential statistics for data analysis in health care research. Students will develop the necessary skills to interpret statistical tests cited in medical literature and communicate statistical test results from their own analyses. Students will enhance their knowledge and application of parametric, nonparametric,

and various multivariate statistical tests. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 652 The Research Process I**

This course promotes the development, integration, and application of the knowledge, attitudes, and skills required to function as a health scientist. This course provides an overview of the research process and a brief philosophical basis of health research within the context of current issues and trends in health sciences. The research literature serves as the foundation for examining research problems, developing problem statements, and conceptualizing research questions. Finally, theoretical and conceptual frameworks ground and enrich the research process as students explore appropriate research designs, including sampling, common study designs, and data collection. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 653 The Research Process II**

This course provides an introduction to the design and implementation of research that combines qualitative and quantitative data collection and analysis. As a method seminar, this course will address the theoretical underpinnings, utility and ethical considerations of using mixed methods research. Emphasis will be on the comparison of mixed method typologies, an overview of the practical skills required for conducting mixed methods research, the selection of appropriate design for research questions and the integration of both qualitative and quantitative data in analysis. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 654 Grantsmanship**

This course will assist the student to develop grant writing and review skills. Content focuses on grant mechanisms, strategies, format, and the grant review process. Learning activities address writing particular NIH grant sections including specific aims, significance, research approach, preliminary studies, human subjects, budget, personnel, and supporting materials. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 3

**HSC - 655 Ethical Conduct in Research Settings**

This course provides the student with an in-depth examination of the ethical principles that guide the conduct of responsible research. These principles will be examined in the context of current, historical, and future scientific achievements. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 656 The Dissertation Proposal**

The learner plans their dissertation research by performing an extensive literature review, forming a dissertation committee and writing a dissertation proposal. The written dissertation proposal is critiqued for strengths and weaknesses by the dissertation committee so that the learner may present a defensible proposal to their dissertation committee that is worthy of dissertation research. The learner obtains all necessary institutional board (IRB) approvals. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 661 Professional Development I**

The student and uses a learning contract to define how the student will increase their knowledge base and improve their skill in a health science professional specialty area. This course will provide an opportunity for students and their advisers to define activities of their own choosing that will enhance the student's professional development. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

### **HSC - 662 Professional Development II**

The student and adviser uses a learning contract to define how the student will increase their knowledge base and improve their skill in a health science professional specialty area. This course will provide an opportunity for students and their advisers to define activities of their own choosing that will enhance the student's professional development. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

### **HSC - 663 Professional Development III**

The student and adviser uses a learning contract to define how the student will increase their knowledge base and improve their skill in a health science professional specialty area. This course will provide an opportunity for students and their advisers to define activities of their own choosing that will enhance the student's professional development. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

### **HSC - 699 Dissertation Research**

Students perform research in preparation of a dissertation in partial fulfillment of the requirements of the degree program. Includes supervision by the student's dissertation committee of their research and related activities including writing the doctoral dissertation, presenting an oral defense to their dissertation committee and finally presenting an oral defense in

a public setting. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 3

### **HSC - 900 Independent Study**

Independent study courses give students a unique opportunity to pursue a course of study not commonly included in the curriculum. If you are interested in pursuing an independent study, meet with the faculty member you want to work with to define the coursework and expectations. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-12

### **HSC - 901 Professional Track**

Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSC - 906 Research Seminar II**

Prerequisite: HSC-615 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

### **HSC - 998 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for Fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the College of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

### **HSM - 606 Health Care Organization & the Patient Experience**

This course provides an overview of the health care in the United States - covering the political, economic and social organization of the delivery of care as well a newly emerging factor - the perspective of the patient. Students will understand and analyze the historical evolution, the structure, the financing mechanisms, the major provider components, performance, and how the point of view of the patient is increasingly shaping the future direction of health care. The course will provide students with a framework to organize knowledge of the health care system to support further study in health services administration. Through reading, class discussions and debates, students will gain an understanding of the major issues facing the health care

system and consider alternative approaches to improve the system. Students will have the opportunity to observe and interview patients and providers in actual clinical settings to understand their interface with the system and related medical, social, and economical issues. The course will introduce patient experience measurement and monitoring tools, techniques for listening to the "voice of the patient" and how all the elements of CMS' value based purchasing plan tie together. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **HSM - 607 Patient Experience Seminar**

This seminar will introduce the patient experience, help future health care managers and leaders understand what the patient experience means, and how patient experience can be enhanced to improve the quality of the overall experience and quality of care. This course will introduce students to measurement and monitoring tools designed to measure patient experience, as well as introduce techniques for listening to the "voice of the patient" to effect positive change. Finally, this seminar will introduce and highlight "patient-centered care" and the importance of it as it relates to health care operations and outcomes. Retake course for credit: No. Pass/no pass grading allowed: No. Credit(s): 1

### **HSM - 608 Human Resources Management**

This course provides an understanding of the human resource management knowledge and skills required of the health systems manager in an environment that is constantly changing. Skills acquired include recruiting and managing talent, training and developing talent, engaging/motivating employees, and leadership capability. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSM - 610 Professional Seminar**

The purpose of this course is to review basic professional principles in preparation for careers in health care management. In this course, professionalism in terms of time management, project management, and written verbal, and oral communication skills, including email and executive memo etiquette is reinforced with helpful tips and in-class exercises. Building upon these skills, the course will then be designed to prepare students for employment interviews and for careers in health management. Exercises include recorded video, consulting case studies, dining simulations and interactions with health care experts in the areas of association, consulting, insurance, group practice, and federal government management. Students will gain confidence

and competence in networking and job search strategies. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSM - 613 Health Care Accounting**

The course will provide students with the fundamentals of healthcare financial accounting and reporting needed in healthcare leadership. This includes an overview of financial statements, transaction analysis, financial ratio analysis, and principles of financial reporting. Students will be able to read, understand and analyze healthcare organization financial statements. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **HSM - 614 Finance Fundamentals**

The course is intended to give generalist administrators the financial and accounting knowledge necessary to manage health care organizations. This course will concentrate on corporate finance topics but touch upon prior coursework in accounting. In addition, it will integrate corporate finance and accounting theories, institutional knowledge of health care finance, and applications to specific problems. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSM - 616 Health Informatics**

The purpose of this course is to prepare future health care executives with the knowledge and skills they need to leverage information gathered from and processed by electronic systems. Students will learn the value of information systems from a business and clinical perspective and then be introduced to Health Informatics, a field concerned with the use of information technology in healthcare. Finally, students will receive an overview of data analytics with an emphasis placed on developing students' abilities to identify, understand, manage, and effectively utilize electronic health care data. The course provides a good foundation for any career in health care given the pervasiveness of information systems. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSM - 620 HSM Internship**

The HSM internship requires a minimum of 440 hours of real world work experience in a health care organization. HSM fulltime students will almost always fulfill this requirement through part-time jobs within Rush University Medical Center or its affiliates during their first year in the program; however, fulltime students, under extenuating circumstances, do have the option of fulfilling the requirement

through a summer internship that they identify and secure, dependent upon departmental approval. The internship emphasizes the 10 distinguishing competencies plus the Professionalism competency contained within the full set of 26 competencies for the National Center for Healthcare Leadership; these include: accountability, achievement orientation, leadership, collaboration, communication skills, professionalism, project management, and self-confidence. Demonstration of behavior consistent with the Rush ICARE values is also expected. During the first semester, data management sessions will also build upon basic and intermediate excel and access knowledge, data management skills are further strengthened to handle real world data challenges (i.e., domain and data understanding, data cleaning, data transformation, output generation, and creating reports and dashboards) to facilitate decision making. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **HSM - 622 HSM Internship**

The HSM internship requires a minimum of 440 hours of real world work experience in a health care organization. HSM fulltime students will almost always fulfill this requirement through part-time jobs within Rush University Medical Center or its affiliates during their first year in the program; however, fulltime students, under extenuating circumstances, do have the option of fulfilling the requirement through a summer internship that they identify and secure, dependent upon departmental approval. The internship emphasizes the 10 distinguishing competencies plus the Professionalism competency contained within the full set of 26 competencies for the National Center for Healthcare Leadership; these include: accountability, achievement orientation, leadership, collaboration, communication skills, professionalism, project management, and self-confidence. Demonstration of behavior consistent with the Rush ICARE values is also expected. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **HSM - 624 HSM Part-Time Internship**

The standard HSM Internship requires real world work experience in a health care organization. HSM part-time students are almost always full-time working professionals in a health care organization. For PT students with fulltime work experience in a health care organization, the internship experience should require the part time student to perform duties or tasks in a highly distinguishable capacity than their current full time role at their employer organization. There are a number of options for part-time (PT) students, who work fulltime, to complete the HSM Internship degree requirement;

the student's Academic Adviser and the Internship Director work with part-time students early in their studies to plan an approach that meets the characteristics of an "ideal" Rush Internship and emphasizes the 10 "distinguishing competencies" plus the Professionalism competency. Demonstration of the Rush ICARE (Innovation, Collaboration, Accountability, Respect, and Excellence) values is also expected. During the first semester in the program, data management sessions will also build upon basic and intermediate excel and access knowledge, data management skills are further strengthened to handle real world data challenges (i.e., domain and data understanding, data cleaning, data transformation, output generation, and creating reports and dashboards) to facilitate decision making. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1-3

#### **HSM - 626 HSM Part-Time Internship**

The standard HSM Internship requires real world work experience in a health care organization. HSM part-time students are almost always full-time working professionals in a health care organization. For PT students with fulltime work experience in a health care organization, the internship experience should require the part time student to perform duties or tasks in a highly distinguishable capacity than their current full time role at their employer organization. There are a number of options for part-time (PT) students, who work fulltime, to complete the HSM Internship degree requirement; the student's Academic Adviser and the Internship Director work with part-time students early in their studies to plan an approach that meets the characteristics of an "ideal" Rush Internship and emphasizes the 10 "distinguishing competencies" plus the Professionalism competency. Demonstration of the Rush ICARE (Innovation, Collaboration, Accountability, Respect, and Excellence) values is also expected. During the first semester in the program, data management sessions will also build upon basic and intermediate excel and access knowledge, data management skills are further strengthened to handle real world data challenges (i.e., domain and data understanding, data cleaning, data transformation, output generation, and creating reports and dashboards) to facilitate decision making. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1-3

#### **HSM - 628 Health Care Economics & Payment Systems**

This course provides students with the fundamental economic concepts and theories underpinning the health care industry and the technical components of health care reimbursement and payment models. By the end of the semester,

students will be able to evaluate, both at a conceptual and at an analytical level, arguments about how the markets for health care and health insurance work. This course takes a holistic look by evaluating the perspectives of various stakeholders; the patient, provider, industry and government. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **HSM - 632 Statistic for Health Care Management**

This course focuses on concepts and procedures for using descriptive and inferential statistics. Differences between parametric and non-parametric statistical tests will be emphasized. This course is predominantly an application based course incorporating the use of computerized statistical programs such as SPSS. Prerequisite: Undergraduate statistics Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **HSM - 636 Quality, Safety & Operational Improvement in Health Care**

This course provides students with the knowledge, skills and abilities needed to apply systems thinking, quantitative methods, and other tools to increase the capacity for quality and operational improvements in health care organizations. Improvement of quality, safety, operational, and financial outcomes is the main role of the health care leader, and is a result of effective understanding and use of data and insights, and motivating change among multi-disciplinary stakeholders. Methodologies, tools and approaches to transform data into usable insights will be presented, including the effective use of metrics and dashboards. Students will appreciate the utility of these for analyzing systems, improving processes, and enhancing quality and patient safety. Emphasis is placed on students' abilities to work with managers and clinicians to analyze problems, identify possible solutions, implement process improvements, and communicate with stakeholders in non-technical terms. The course uses a combination of learning methods, including group discussion, multi-media, and operational projects. Challenging assignments in real health care settings-such as emergency department throughput, operating room logistics, and mortality and complication improvements -give students the opportunity to apply what they are learning. Prerequisite: HSM 606. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **HSM - 640 Health Care Planning & Marketing**

This course develops students' understanding and appreciation of the health care planning, communications and

marketing processes. Through discussions, cases, teach back of marketing and strategic planning concepts and guest lecturers, topics are covered around all aspects of planning and marketing. These include frameworks for strategic thinking and planning, consumer research, market segmentation, distribution and product strategies, advertising and promotion, mass communications/public relations, social media, referral development and marketing, and assessment of outcomes and effectiveness of planning and marketing efforts. As a result of this course, students are able to discuss, assess and critically and marketing initiatives. Prerequisites: HSM 606, HSM 612 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **HSM - 644 Health Care Managerial Finance & Seminar**

This course moves beyond basic financial accounting to how financial information is used to manage and make decisions. From the revenue perspective, students are expected to learn and demonstrate an understanding of the way health care providers are paid for services based on the source of payment (Medicare, Medicaid, managed care) and the payment methodology. From a cost perspective, cost allocation methodologies as well as types of costs (e.g. fixed, variable, semi-variable), will be taught. Case studies, in-class exams, and team presentations will be used to evaluate students' competencies to assemble revenue and cost information to make strategic decisions and construct budgets and business strategies. The examples used will focus on existing and emerging reimbursement trends that are impacting health care organizations. Prerequisite: HSM 612 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **HSM - 648 Health Law & Ethics for Health Care Managers**

This course is designed to introduce students to the legal, regulatory and ethical landscape applicable to the health care industry. The topics include a variety of legal and ethical issues that are relevant to the practice of health care administration, including regulatory and business law, fraud and abuse, corporate governance, and organizational liability. Students will also consider the ethical issues underlying the fundamental conflicts and decisions faced by health care managers, including identifying stakeholders, defining ethical conflicts, proposing multiple courses of action as well as the possible costs and benefits of each. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3



### **HSM - 652 Health Policy**

HSM 652 introduces students to the public policy and political environments that influence and shape the manner in which health care is obtained and delivered in the United States. More specifically, this course will examine the organization and financing of health care, politics, and the influence of Medicare and Medicaid policies through the lens of contemporary health policy issues. In addition to conceptual discussion, the course includes a variety of techniques to analyze and evaluate health policy decisions and their implications on health care organizations. Prerequisites: HSM 606 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **HSM - 656 Master's Project I**

The overall goal of this course is to integrate quantitative methods and health care management knowledge to address a problem that is important to health care delivery, management or policy. In this course, students will design and conduct an applied quantitative research project that results in a high quality, compelling management report and two professional oral presentations to key stakeholders. The key components of this course include integrating and synthesizing information from multiple sources; developing an appropriate research question; developing an appropriate research design and analysis plan; integrating rigorous analytic methods with data management skills to analyze data; and interpreting quantitative or qualitative results in light of the existing literature and best practices to provide new insight for health care management or policy. Prerequisites: HSM 606, 610 or concurrently, HSM 626, 636, 632, 616 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSM - 660 Master's Project II**

The overall goal of this course is to integrate quantitative methods and health care management knowledge to address a problem that is important to health care delivery, management or policy. In this course, students will design and conduct an applied quantitative research project that results in a high quality, compelling management report and two professional oral presentations to key stakeholders. The key components of this course include integrating and synthesizing information from multiple sources; developing an appropriate research question; developing an appropriate research design and analysis plan; integrating rigorous analytic methods with data management skills to analyze data; and interpreting quantitative or qualitative results in light

of the existing literature and best practices to provide new insight for health care management or policy. Prerequisites: HSM 656, 632, 628, 616 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **HSM - 664 Leadership in the Changing Health System**

The primary goal of this class is to enhance students' effectiveness as healthcare leaders by expanding their capabilities in organizational analysis and leadership generally, and within the evolving health ecosystem specifically. The course begins by helping students develop a solid conceptual understanding of organizational processes from a socio-technical perspective, and gain experience in using this understanding to plan successful control systems and change efforts for individuals, teams, and organizations. The course places particular emphasis on developing student skills in observation and reflection on individual behavior, group processes, and systems. The course draws on organizational and behavioral theory, but emphasizes application through team-based learning, experiential exercises and reflection. The course concludes with an emphasis on personal leadership and life-long learning, with a focus on helping students enhance their self-awareness concerning strengths and development needs as they relate to their career aspirations. Prerequisites: HSM 502 and HSM 515 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSM - 668 Managerial Epidemiology**

This course emphasizes managerial epidemiologic principles that health care managers use to inform strategic initiatives and to achieve optimal organizational performance. Topics include basic epidemiological principles to understand disease, descriptive epidemiology, research designs, cost effectiveness analysis, community needs assessment, program planning and program evaluation. Prerequisite: HSM 632 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **HSM - 672 Capstone: Strategic Management Of Health Care Organizations**

This course provides students with opportunities to apply the fundamentals of strategic planning and marketing, economics, finance, information system, and operations acquired in previous courses in the HSM curriculum to practical problems and decisions faced by real health care organizations. Students apply techniques of situational assessment, data analysis, strategy development and problem solving. As the capstone course for the HSM program, students are encouraged to integrate and refine their knowledge from all sources of learning in the HSM program to apply to business case studies.

They conduct strategic analyses and develop and present strategic recommendations consistent with the mission, vision and values of an organization under the guidance of a teaching team of senior health care managers. The result is an improved ability to think critically, identify strategic challenges, complete strategic analyses for different business problems, and communicate clearly. Prerequisites: HSM-616, HSM-628, HSM-636, HSM-640. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

### **HSM - 688 Topics in Health Systems Management**

Electives have been developed to accommodate the diverse educational needs of our students. Topics in Health Systems Management provide students the opportunity to further develop their health care leadership knowledge, skills and attitudes. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **HSM - 900 Independent Study**

Specialized course work designed around the needs of an individual student. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1-12

### **HSM - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for Fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the College of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

### **IDS - 505 Interdisciplin Studies Palliative Care**

The purpose of this interdisciplinary web-based course is to educate graduate students about incorporating palliative care as an interdisciplinary approach to care for people with chronic, life limiting illness across the life span and health-illness continuum directly and/or indirectly into their discipline or area of practice through collaboration and coordination with those specializing in palliative care. The course addresses a recognized, growing need in health care. Prerequisite: None. P/N grading. (2) Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

### **IMM - 507 Basic Immunology I**

Introduction to immunology, with emphasis placed on the components, nature, and organization of the immune system. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 3

### **IMM - 508 Basic Immunology II**

A continuation of Basic Immunology I. This course focuses on activation and regulation of the immune system. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 3

### **IMM - 510 Advanced Immunology I**

Introduction to immunology, with emphasis placed on the components, nature, and organization of the immune system. Prerequisite: IMM 507, IMM 508, IMM 509 or equivalent. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

### **IMM - 610 Special Topics**

Detailed study of contemporary topics in immunology are presented in a five week block. Topics such as inflammation, host defense, membrane structure, and antigen presentation are included. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-12

### **IMM - 620 Doctoral Research**

Research credits after admission to candidacy. (P/N only) Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-9

### **IMM - 900 Independent Study**

Specialized course work designed around the needs of an individual student. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-4

### **IMM - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for Fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the College of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**IPE - 502 Interprofessional Patient Centered Teams**

This program will introduce students to the four Interprofessional Educational and Collaborative Practice (IPEC) domains: Values/Ethics, Roles/Responsibilities, Teams/Team Work and Communication. Students will use experiential team based learning to apply knowledge, skills and values of the IPEC competencies. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): Non Credit

**IS - 305 Intro to Imaging Sciences**

This course focuses on specialized imaging sciences modalities. It includes concepts and theories of equipment operations and their integration for medical diagnosis. The student will be introduced to the basics of the available advanced imaging modalities used in the assessment of anatomy and diagnosis of disease processes. This course will provide instruction in the Imaging Sciences Program curricula to meet the needs of students for entry level employment by providing an overview diagnostic imaging, the technological education and clinical practice. The student will be introduced to the basics of advanced imaging modalities used in the assessment of anatomy and diagnosis of disease processes. Prerequisite: Admission to the Department. Entry Level MRI students. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**IS - 307 Introduction to Patient Care**

An overview of the historical development of radiography, and basic radiation protection. An introduction to the many facets of allied health professions; including types of health care professionals, medical ethics, medical terminology, patient assessment, infection control procedures, emergency and safety procedures, communication and patient interaction skills, promoting a safe clinical environment and basic pharmacology. Topics also include patient's right to privacy, confidentiality, documentation, team building, cultural issues, age related concerns, and death and dying. This course is intended to assist students in the understanding of the environment encountered in clinical agencies. This course infers from evidence-based medicine to promote the application of critical thinking skills and clinical judgment. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**IS - 310 Sectional Anatomy & Pathology**

Radiology has been developing dramatically during the past few years. With enhancements in magnetic resonance imaging (MRI), the role of the RT has also been changing. Skills

in cross-sectional anatomy are important to help the MRI technologist to identify the anatomy being imaged and to communicate effectively with the radiologist and physicians. This class will provide you with the opportunity to expand your knowledge of body cross-sectional anatomy and its appearance in CT and MRI images. This course provides an in-depth application of cross sectional anatomy for medical imaging. Emphasizes the characteristic manifestations, pattern recognition, and image assessment of pathologies observed in medical images. It includes a brief review of normal anatomy and structure, followed by general overview descriptions of specific pathologic processes. Students will use textbooks and Internet resources to learn the cross-sectional anatomy, basic characteristics, clinical features, and diagnostic tools including medical imaging procedures. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 5

**IS - 314 Pathophysiology**

This course provides an in-depth application of the concepts of pathophysiology for the assessment and management of medical imaging patients. Emphasizes the characteristic manifestations, pattern recognition, and image assessment of pathologies observed in medical images. This course investigates general pathology and organ system pathology. It includes a brief review of normal structure and function, followed by more in-depth descriptions of specific pathologic processes. Students will use textbooks and internet resources to learn the basic characteristics, etiology, pathogenesis, clinical features and diagnostic tools including medical imaging procedures, prognoses, and therapies for each of the specific pathologies. Students will participate in online discussions and create interactive pathology presentations in this course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**IS - 318 Patient Assessment**

Patient evaluation and implementation of evidence-based care plans will be described. Evidence based practice and critical diagnostic thinking are reviewed and applied to the review of the medical record, patient interview, physical assessment, and evaluation of diagnostic studies. Assessment of oxygenation, and arterial blood gases are reviewed. Laboratory studies, imaging studies, and ECG monitoring and interpretation are discussed. Pulmonary function testing, diagnostic bronchoscopy and other diagnostic studies are also described. The student will integrate assessment findings in the development and evaluation of care plans for specific disease states and conditions. Retake

Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**IS - 325 Pharmacology and Radiologic Contrast Agents**

This course provides a study of pharmacodynamics, pharmacokinetics, medication administration, drug categories, and implications in patient care. Emphasizes pharmaceuticals frequently used in medical imaging. This course is intended to provide imaging sciences professionals the knowledge in all aspects of basic pharmacology. The purpose is to educate radiologic personnel in basic pharmacology principles, ensuring quality patient care. Contrast media is used by most modalities of diagnostic imaging. This course is designed to provide an in-depth understanding different Contrast medias used in diagnostic imaging. A brief historical development and evolution of contrast media is reviewed. Topics include uses, prevention of acute reactions, contrast induced nephropathy, renal adverse reaction and more. Students will follow weekly modules and or use textbook and internet resources to learn more about contrast media use, safety issues and guideline. Students will participate online with other. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**IS - 328 Vascular Interventional Technology**

This didactic course includes instruction over: procedural angiography including; imaging of the heart, pulmonary vascular system, thoracic aorta, central venous access procedures, cardiac-interventional, vascular-interventional and nonvascular interventional procedures. Each student will be working in either vascular-interventional radiology or interventional cardiology. The course encourages students to combine theoretical knowledge with the practical experience they acquire while working in these clinical areas. Learning activities for this course review and build upon pre-existing knowledge, such as human anatomy, physiology, pathology, patient care in radiography and radiation protection. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 6

**IS - 331 Education**

This course will provide students with an introduction to basic principles and techniques used in health care education. This course will provide students with the knowledge needed by health professional who interact with other health professionals and/or patients in educational settings including professional development, higher education, patient education or community education. Case studies will be presented. Topics include health care professional's role in

education, patient education, in-service education, course design, curriculum development and models, objectives and goals, lesson plan development, learning activities, use of media, teaching methods, development of presentations, testing and evaluation. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**IS - 336 MRI Physics**

This course will provide the student with an introduction to the field of MRI. Topics will include an overview of MRI history and development, fundamental principles of magnetism, safety in MRI, equipment, terminology and coils. This course will explain in depth concepts of MRI physics. Topics will include basic principles of MRI, image weighting and contrast, tissue characteristics, signal production, image formation, image acquisition and image production, pulse sequences, flow phenomena, artifacts in MRI, scanning parameters, contrast media administration, along with functional imaging techniques. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 5

**IS - 337 Computed Tomography Physics**

This course will provide the student with an in-depth understanding of the physical and instrumentation involved in concepts of computed tomography. Computed tomography is a specialized modality of diagnostic imaging section. The historical development and evolution of computed tomography is reviewed. Physics topics include x-radiation in forming the CT image, CT beam attenuation, linear attenuation coefficients, tissue characteristics and Hounsfield number application. Data acquisition and manipulation techniques, image reconstruction algorithms will be explained. This course will also provide students with fundamental physical principles, quality control, and instrumentation needed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**IS - 338 Advanced Radiation Biology**

This course is directed to Computed Tomography and Interventional Radiography students enrolled in the Imaging Sciences program. Content will include review and continuation of basic radiobiology involved with radiography and advanced modalities. It will address the radiobiological/biophysical events at the cellular and subcellular levels. Analysis of factors influencing radiation response of cells and tissues will be covered. Construction and evaluation of radiobiological data on graphs, charts, and survival curves will be included. Relationships of time, dose, fractionation, volume and site as they apply to tissue response will be

evaluated. The principles of radiation response modifiers, hyperthermia, chemotherapy and their influence on biologic effects in combination with radiation will be examined. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **IS - 340 MRI Safety**

This course provides an in-depth application of the health and safety concerns of MRI technology. Both theoretical and practical information will be covered. MRI physics bioeffects of static, gradient, and radiofrequency electromagnetic fields will be covered as well as the risks associated with acoustic noise. Use of MRI during pregnancy, the design of an MRI facility to support safety, the procedures to screen patients and other individuals, and the management of patients with claustrophobia, anxiety, or emotional distress will be addressed. Review of the safety of MRI contrast agents, use of ferromagnetic detection systems, techniques for physiological monitoring, unique safety needs of interventional MRI centers, and administration of sedation and anesthesia during MRI will be covered. Proper management of patients with metallic implants and complex electronically activated devices, such as cardiac pacemakers and neuromodulation systems will be covered. MRI safety policies and procedures will be reviewed for hospitals/medical centers, outpatient facilities, children's hospitals, and research facilities. Finally, MRI standards and guidelines will be addressed for the United States. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **IS - 400 Independent Study**

Independent study courses give students a unique opportunity to pursue a course of study not commonly included in the curriculum. If you are interested in pursuing an independent study, meet with the faculty member you want to work with to define the coursework and expectations. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-12

#### **IS - 444 MRI Positioning/Protocols 4 Semester Hours**

MRI is a specialized modality of Diagnostic Imaging section. This course is designed to provide an understanding of proper protocols and positioning utilized to acquire appropriate imaging with patient history in mind concepts of Magnetic Resonance Imaging. Anatomy and Pathophysiology is reviewed for appropriate protocol and contrast usage. Protocol and Positioning topics include basic overview of MRI Physics, indications for procedure, preparation, orientation of MRI room, positioning and landmarks, patient history

and assessment, types of contrast media and their usage, scan parameters for brain, spine, , upper and lower extremity imaging, Female and Male pelvis, Abdominal imaging, Cardiac and Breast imaging. MRI protocols vary from site to site and most often are dependent on radiologist's preference. Students will follow weekly modules and or use textbook and Internet resources to learn MRI protocols and positioning Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **IS - 447P Clinical Practicum I 6 Semester Hours**

Supervised clinical experience in the imaging track selected. This course is designed so the students gains the clinical experience needed to function in an active imaging sciences department and to document the needed clinical procedures. Each of the three clinical practicum will consist of 333.33 hours (total of 1000 hours) in an assigned facility for supervised practice of acquired knowledge and skills. Review of medical imaging with an emphasis on problem solving and critical thinking in the imaging track selected. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **IS - 448 Clinical Seminar I**

This course builds on the previous learning related to imaging sciences. This course will allow the students to engage in self-directed study to prepare for the American Registry of Radiologic Technologist (ARRT) by completing registry review board modules. This course will provide the students the opportunity to integrate the theory and clinical practice in order to meet the complex needs of patients. ARRT registry review modules and case presentations will be completed. This course will provide a review of medical imaging with an emphasis on problem solving and critical thinking in the imaging track selected. The course is intended for senior students to prepare for the ARRT's credentialing exam. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **IS - 449 Clinical Seminar II**

This course builds on the previous learning related to imaging sciences. This course will allow the students to engage in self-directed study to prepare for the American Registry of Radiologic Technologist (ARRT) by completing registry review board modules. This course will provide the students the opportunity to integrate the theory and clinical practice in order to meet the complex needs of patients. ARRT registry review modules and case presentations will be completed. This course will provide a review of medical imaging

with an emphasis on problem solving and critical thinking in the imaging track selected. The course is intended for senior students to prepare for the ARRT's credentialing exam. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **IS - 453 Computed Tomography Positioning and Protocols**

Computed Tomography is a specialized modality of the Diagnostic Imaging section. This course is designed to provide an understanding of proper protocols and positioning utilized to acquire appropriate imaging with patient history in mind concepts of computed tomography. Anatomy and pathophysiology is reviewed for appropriate protocol and contrast usage. Protocol and positioning topics include basic overview of CT Physics, Patient communication and safety, Radiation dose, indications for procedure, preparation, orientation of CT room, positioning and landmarks, patient history and assessment, types of contrast media and their usage, and scan parameters. Imaging protocols for brain, chest, abdomen, spine and musculo-skeletal imaging will be covered in this course. CT protocols vary from site to site and most often are dependent on radiologist's preference. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **IS - 454 Health Care Ethics and Cultural Competence**

This course covers ethical issues that Allied Health professionals can expect to encounter during their education and career. It covers such areas of concern as professionalism, cultural differences, confidentiality, informed consent, responsible practice, handling mistakes, difficult cases and key legal aspects of these issues. The course will begin by helping the student understand the value of diversity in our society and allow the student to make self-examination of their own beliefs, values and biases. This will be followed by the dynamics involved when two cultures interact. Students will examine specific cultural characteristics as they apply to health care and propose ways of adapting diversity to the delivery of health care. The course will include an in-depth assessment of the Culturally and Linguistically Appropriate Services [CLAS] standards and cultural competency information available to healthcare organizations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **IS - 457P Clinical Practicum II 6 Semester Hours**

Supervised clinical experience in the imaging track selected. This course is designed so the student gains the clinical experience needed to function in an active imaging sciences

department and to document the needed clinical procedures. Each clinical practicum requires 333.33 hours in an assigned facility for supervised practice of acquired knowledge and skills. This course will offer a review of medical imaging with an emphasis on problem solving and critical thinking in the imaging track selected. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **IS - 458 Leadership 3 Semester Hours**

This special topics course is designed to provide a basic introduction to leadership by focusing on what it means to be a good leader. Emphasis in the course is on the practice of leadership. The course will examine topics such as: the nature of leadership, recognizing leadership traits, developing leadership skills, creating a vision, setting the tone, listening to out-group members, handling conflict, overcoming obstacles, and addressing ethics in leadership. Attention will be given to helping students to understand and improve their own leadership performance. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **IS - 463 Research & Statistical Methods**

An introduction to the methods of scientific research to include research design and statistical analysis. Critical review of the components of research reports will be performed to include definition of the problem, review of the literature, research design, data analysis and results. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **IS - 467P Clinical Practicum III 6 Semester Hours**

Supervised clinical experience in the imaging track selected. This course is designed so the students gains the clinical experience needed to function in an active imaging sciences department and to document the needed clinical procedures. Each of the three clinical practicums will consist of 333.33 hours (total of 1000 hours) in an assigned facility for supervised practice of acquired knowledge and skills. Review of medical imaging with an emphasis on problem solving and critical thinking in the imaging track selected. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **IS - 468 Clinical Seminar III**

This course builds on the previous learning related to imaging sciences. This course will allow the students to engage in self-directed study to prepare for the American Registry of Radiologic Technologist (ARRT) by completing registry review board modules. This course will provide the students the opportunity to integrate the theory and clinical practice in

order to meet the complex needs of patients. ARRT registry review modules and case presentations will be completed. This course will provide a review of medical imaging with an emphasis on problem solving and critical thinking in the imaging track selected. The course is intended for senior students to prepare for the ARRT's credentialing exam. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **IS - 481P Clinical Specialty Practicum 6 Semester Hours**

Supervised clinical experience in the imaging track selected. This course is designed so the student gains the clinical experience needed to function in an active imaging sciences department and to document the needed clinical procedures. The clinical specialty practicum will consist of 200 hours in an assigned facility for supervised practice of acquired knowledge and skills. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **IS - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **MED - EXM Medicine Exam Remediation**

Remediation of course examination. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 8

#### **MED - REM Medicine Clinical Remediation**

Remediation of clinical weeks. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 8

#### **MED - 7EI Internal Medicine Individualized Elective**

Students may receive credit for an individually arranged elective with a Rush faculty member. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter stating the student's activities, responsibilities, amount of supervision, and specific dates of the rotation. The sponsoring faculty member must complete an evaluation of the student's performance

at the conclusion of the elective. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the assistant dean of Clinical Education before beginning the rotation. Students may receive four weeks of credit for an individually arranged elective. Credit for a maximum of only one individually arranged elective will count toward graduation requirements. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **MED - 703 Core Clerkship: Internal Medicine**

This course introduces students to the study and skills of clinical medicine. Through the case study approach, students have the opportunity to evaluate and manage a variety of patients and their problems. In this manner, students can develop their skills in history taking and physical examination and will review pathophysiological principles in caring for patients. Students develop an understanding of relationships between disease states and patient hosts from the medical, social and emotional points of view. The ward team approach allows students the opportunity to actively work toward the goals of good patient care and the acquisition of a solid foundations of medicine. Students are expected to supplement their learning through a self-study program of learning objectives. This will provide the students with exposure to basic technical skills as well as a core set of topics in internal medicine. Required Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 8

#### **MED - 710 Subinternship: Internal Medicine**

Students function at an advanced level, doing histories and physical examinations, diagnostic evaluations and initiation of appropriate therapy. There is close supervision by the staff of the Department of Internal Medicine. The course is primarily intended for students desiring additional clinical experience in internal medicine. The four-week subinternship rotation is taken during the fourth year. This clerkship will be scheduled during the elective lottery, which takes place in the spring of the M3 year. Required in M4 Year Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 711 Cardiovascular Medicine**

This course is the study of the diagnostic spectrum of cardiac evaluation including bedside assessment, critical care cardiology, electrocardiography, electrophysiology, echocardiography, cardiac catheterization, coronary angiography, coronary care, interventional cardiology, preventive

cardiology and exercise testing. Patient study is carried out under the direction of the clinical staff. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 712 Medical Intensive Care**

This course provides experience in the recognition and management of medical critical care issues, particularly the use of bedside hemodynamic monitoring, use of mechanical ventilators, and management of cardiovascular, pulmonary, renal and endocrine emergencies. Patient care is carried out under the direction of the clinical staff. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 713 Cardiovascular Research**

In this course, a student's program is individually planned with emphasis on understanding basic research techniques and completion of a project with the goal of submitting an abstract and/or manuscript. The student is assigned to a specific faculty member based on his/her individual interest. The research program of the Section of Cardiology encompasses treatment and prevention of chronic heart failure, arrhythmias, and coronary artery disease; echocardiography; myocardial cell contraction; molecular biology of heart cell differentiation; and vascular biology. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the Office of Clinical Curriculum before beginning the rotation. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 721 Endocrinology/Metabolism**

Endocrine and metabolic disorders are studied under the direction of the clinical faculty. Regular didactic sessions, departmental conferences and seminars supplement clinical work, which involves both outpatients and inpatients. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 724 Coronary Care Unit**

This course is designed for students desiring advanced exposure to patients with acute cardiovascular illness. During this rotation the student functions at the sub-intern level and will be expected to admit anywhere from one to three patients per day. Although night call is not required, it is expected that the student remain until their work is fully completed and sign-out given to the intern on-call. The student then will give formal presentations of patient histories and physicals at morning rounds. The student is available for

admitting and rounding six days out of seven. The student is also exposed to the full spectrum of bedside procedures performed in the coronary care unit including pulmonary artery catheterization, indwelling arterial line, and venous central catheter. Exposure to placement of transvenous pacemakers and intraaortic balloon pumps will also be part of the CCU experience. It is anticipated that the experience in the coronary care unit be rigorous. At the conclusion of the rotation the student should be able to understand the diagnosis and treatment of the full spectrum of cardiovascular illnesses including ischemic heart disease, advanced heart failure, shock, hypertensive heart disease, valvular heart disease, congenital heart disease and pericardial disease. The student gains valuable experience in the diagnosis and treatment of rhythm disturbances and in 12-lead electrocardiogram interpretation. The student is responsible for all aspects of patient care under the supervision of the physician team which includes a full-time cardiovascular attending physician, a cardiovascular fellow, as well as internal medicine residents and interns. It is also expected that the student participate in didactic conferences and attend all the cardiology conferences throughout their rotation. This clerkship is recommended for students intending to enter a career in internal medicine, the internal medicine subspecialties or critical care medicine. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **MED - 726 Nephrology**

In this course, the clinical diagnosis and management of patients with acute and chronic renal disease as well as various fluid, acid-base, and electrolyte abnormalities are studied. In addition, the course is directed toward the proper interpretation of pathophysiologic findings and the practical clinical management of nephrotic syndrome, diabetic nephropathy, glomerulonephritis and patients with chronic renal failure and end-stage renal disease. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **MED - 732 Digestive Diseases**

This course is divided into two two-week sessions: gastroenterology and hepatology. Students rotate on the gastroenterology and hepatology inpatient services including liver transplant. Students actively participate in consults, didactic lectures and bedside rounds. Students attend all conferences including gastroenterology grand rounds, conference, liver transplant conference and Journal Club. An outpatient experience in both gastroenterology and hepatology

is available once per week if desired. There is an optional opportunity for those students wishing to participate in clinical research in the area of digestive diseases to incept projects during this rotation. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 736 Hematology**

This course provides an intensive exposure to clinical hematology. Students meet with residents, fellows and a teaching-attending hematologist daily for presentation and discussion of hospitalized hematology patients. Students work-up patients, present them to the attending and participate in patient care with medical residents. Blood and bone marrow slides on the service patients are reviewed daily with attending hematologists using a teaching (multi-headed) microscope. Bedside rounds follow the daily presentation of cases. On Mondays, a multidisciplinary lymphoma conference presents diagnostic and therapeutic aspects of the malignant lymphomas. On Thursdays, a clinical conference is held in which a patient is presented and discussed in depth by students, residents and faculty. A recent addition to this elective is a daily self-learning session with a faculty member on a core topic of hematology. Twenty of these topics cover the spectrum of hematologic diseases. All conferences held by the Section of Hematology and Stem Cell Transplantation is available to the students on an optional basis. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **MED - 746 Infectious Disease**

In this course students are exposed to a wide variety of acute and chronic infectious disease problems with emphasis on diagnostic and therapeutic approaches. Teaching is conducted in a case-study format in which students see new patients and present them to the attending on consultation rounds. Rush and Stroger Hospitals have a joint fellowship training program in infectious disease. Rush students will spend two weeks at Rush and two weeks at Stroger Hospital on the respective Infectious Disease Consultative Services; visiting students will spend all four weeks at Rush. In addition, students will attend a weekly two-hour infectious disease conference at Rush and a one-hour infectious disease conference at Stroger where they may present cases. Sixteen lectures on basic infectious disease topics are presented over the four weeks. Students are NOT allowed to drop this course less than 8 weeks prior to the start. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 747 Global & Community Health**

In this course, students spend between two and four weeks in a specific community defined by the student. The purpose of this elective is to provide students the opportunity to read and discuss in the area of primary health care, as defined by the World Health Organization (1978). Students obtain a framework for addressing common diseases in an underserved community setting from a clinical, epidemiologic and public health perspective. In addition to the didactic portion of the course the student spends two to four weeks in an underserved community developing country setting under the supervision of Rush faculty. The course will focus on the social determinants of population health, including the impact of environment, poverty, social structure and culture on health status and health care. The course will include the epidemiology, diagnosis, treatment, control, and prevention of selected diseases of importance in underserved settings. Students use this knowledge to develop a plan for working in disadvantaged communities providing primary health care, either locally or internationally. Students must have a faculty sponsor at Rush as well as a physician at the site responsible for supervision of the student's work. Students must complete the on-line curriculum and reading self-study prerequisites prior to departure for their work in the community and must submit a completed project within one week of the completion of the elective. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **MED - 751 Rheumatology**

In this course, students participate in all activities of the Section of Rheumatology, including patient care in clinics, inpatient consultations, conferences and didactic sessions. A wide variety of musculoskeletal conditions and connective tissue diseases are seen. Objectives include performance of musculoskeletal exam, synovial fluid analysis, arthrocentesis, therapeutic injection of joints and other structures, ability to formulate differential diagnosis of rheumatic conditions and formulate long-term management programs. An interdisciplinary approach relies on contributions of immunology, orthopedics, diagnostic radiology, physiotherapy and occupational therapy. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 755 Quality & Safety in the Hospital**

In this course students are assigned to the Rush University Medical Center Attending Directed service and assume primary responsibility for patient care under close supervision, provided by an assigned attending hospitalist. Students

have the unique opportunity to work one-on-one with an attending hospitalist, and interface with case management, physical therapy, pharmacy, nursing, primary care physicians outside of the hospital, emergency medicine and critical care physicians and medical/surgical consultants to provide high-quality and safe inpatient care. Students participate in a series of workshops and didactic sessions addressing important topics in quality improvement and patient safety. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 761 Medical Oncology**

Patients seen by the Section of Medical Oncology provide an ample and varied spectrum of oncological problems. Students study selected patients under the direction of members of the section. Various therapeutic approaches and complications occurring in the course of the disease are discussed. The program stresses the importance of the combined interdisciplinary approach using the resources of the Departments of Surgery and Therapeutic Radiology, as well as those of Pathology and Nuclear Medicine. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 771 Pulmonary Medicine**

The course gives the student an exposure to the diagnosis and management of patients with a wide variety of pulmonary disorders. The rotation concentrates primarily on inpatients at Rush University Medical Center, but there is an opportunity to work withoutpatients in the Rush Center for Lung Diseases. The essentials of pulmonary physiology, the use and interpretation of pulmonary function testing, and the provision of mechanical ventilatory support are emphasized during the rotation. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **MED - 777 Allergy/Immunology**

This course teaches the clinical approach to the problems of allergy, other immune-mediated diseases and immunodeficiency in children and adults. Diagnosis and treatment of commonly encountered IgE-mediated diseases (allergic rhinitis, asthma, eczema and urticaria), as well as connective tissue diseases and immunodeficiency syndromes are explained. Students are responsible for following medicine as well as pediatric inpatient consults at Rush University Medical Center and Stroger Hospitals and report to the attending physician-on-service for daily rounds. Allergy/Immunology outpatient care is demonstrated at Fantus Clinic (part of the Stroger Hospital Ambulatory Care Network) as

well as the Allergy/Immunology Office at Rush University Medical Center. Students also learn about skin testing techniques, spirometry, and immunological tests performed by the Rush Medical Laboratory. Teaching (basic science or clinical lecture, journal club, research and chart review) conferences are held at Rush on Friday mornings. The attending physician-on-service and/or fellow-on-service also teach on daily rounds. A pretest and final quiz are given to measure achievement as a basis for evaluation. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 781 Research in Medicine**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout the academic year. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the director of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of eight weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Clinical Curriculum. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-8

#### **MED - 785 Community-Based Intensive Care**

This community-based intensive care experience is offered at Rush Copley Medical Center in Aurora, Illinois. Students learn to recognize critically ill patients' presentation and natural history, identify proper treatment of critical illness and become familiar with typical critical care procedures. They also learn the process of multidisciplinary rounds in a community ICU. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **MED - 790 Advanced Concepts in Palliative Care**

This is a two-week online compressed course designed for graduate students to build a foundation in palliative care principles that may be applied directly to patient

care. The focus of the course is to gain familiarity with an interdisciplinary approach and establish primary palliative care expertise in caring for patients with life-limiting illness across the disease continuum. Students learn the history and driving tenets of palliative care, discover the core skills in interprofessional team work, and expand their understanding of complex pain and symptom management, serious illness communication, prognostication and the care of the dying patient. Graduate students leave with skills that have been demonstrated to improve patient safety, patient and provider satisfaction, and decrease health care utilization. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

#### **MED - 795 Geriatric Medicine**

This course draws upon a number of resources within the Rush system, including Rush University Senior Care and its practice sites and Johnston R. Bowman Health Center. Students learn about models of care for older adults throughout the continuum of medical care. Under the supervision of the faculty of the Section of Geriatric Medicine and Palliative Care, students participate as part of an interdisciplinary team in evaluation and assessment of the medical, psychiatric, and social needs of older adults. The curriculum includes exposure to topics in medical ethics, medical economics, and medical and legal aspects of end-of-life care. Weekly didactic sessions presented by section faculty complement clinical experiences. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **MED - 799 Combined Internal Medicine/Pediatrics**

This course is based at Lifetime Medical Associates, the continuity practice of the Rush Combined Internal Medicine/Pediatrics Residency Program. This integrated resident-faculty outpatient practice focuses on family-oriented primary care. Students spend the day working with common outpatient problems in patients of all ages. In addition, students gain experience in office management, insurance issues, quality improvement, urgent care, and other areas important to general practice. Because this course is essentially an outpatient subinternship, we request that students advise us as soon as possible of a need to change dates or cancel enrollment. Note: Visiting students may only enroll in four-week rotations with the approval of the course director; they are not eligible for two-week rotations. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 812 Medical Intensive Care**

This course provides experience in the recognition and management of medical critical care issues, particularly the use of bedside hemodynamic monitoring, use of mechanical ventilators and management of cardiovascular, pulmonary, renal and endocrine emergencies. Patient care is carried out under the direction of the clinical staff. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 815 Clinical Palliative Care**

In this course, students see patients referred to the palliative care service in the inpatient, outpatient and home setting. The service sees 50 patients/month in the inpatient setting; 10-15/week in the outpatient clinic; and two to three patients/week at home. The student is involved in a selected number of these patients. Palliative Medicine fellows provide teaching to the residents and medical students rotating on the service both formally during didactic sessions, as well as serving as role models during direct patient care interactions and family meetings. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

#### **MED - 821 Endocrinology/Metabolism**

Endocrine and metabolic disorders are studied under the direction of the clinical faculty. Regular didactic sessions, departmental conferences and seminars supplement clinical work, which involves both outpatients and inpatients. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 826 Nephrology**

In this course, the clinical diagnosis and management of patients with acute and chronic renal disease as well as various fluid, acid-base and electrolyte abnormalities are studied. In addition, the course is directed toward the proper interpretation of pathophysiologic findings and the practical clinical management of nephrotic syndrome, diabetic nephropathy, glomerulonephritis and patients with chronic renal failure and end-stage renal disease. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 828 Cardiology**

This course consists of two weeks of CCU and two weeks of inpatient cardiology consults, or four weeks of CCU. Each student can choose which of the two formats they prefer. Students see patients on their own and present/discuss them with the team. They attend cardiology rounds and conferences. Students improve their knowledge about the

presentation and treatment of common cardiac diseases including chest pain, acute coronary syndrome, arrhythmias. Students improve their skills in the cardiac examination and in the interpretation of EKGs. There is a daily half-hour teaching conference for the team. Students have the option of staying for an additional hour long conference geared towards the fellows. Students are invited to attend any conferences for the department of medicine residents (noon conferences three days per week). Evaluation is based on the student's performance on rounds. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 832 Digestive Diseases**

This course is divided into two two-week sessions: gastroenterology and hepatology. Students rotate on the gastroenterology and hepatology inpatient services including liver transplant. Students actively participate in consults, didactic lectures and bedside rounds. Students attend all conferences including gastroenterology grand rounds, conference, liver transplant conference and Journal Club. An outpatient experience in both gastroenterology and hepatology is available once per week if desired. There is an optional opportunity for those students wishing to participate in clinical research in the area of digestive diseases to incept projects during this rotation. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 836 Hematology**

This course provides an intensive exposure to clinical hematology. Students meet with residents, fellows and a teaching-attending hematologist daily for presentation and discussion of hospitalized hematology patients. Students work-up patients, present them to the attending and participate in patient care with medical residents. Blood and bone marrow slides on the service patients are reviewed daily with attending hematologists using a teaching (multi-headed) microscope. Bedside rounds follow the daily presentation of cases. On Mondays, a multidisciplinary lymphoma conference presents diagnostic and therapeutic aspects of the malignant lymphomas. On Thursdays, a clinical conference is held in which a patient is presented and discussed in depth by students, residents and faculty. A recent addition to this elective is a daily self-learning session with a faculty member on a core topic of hematology. Twenty of these topics cover the spectrum of hematologic diseases. All conferences held by the Section of Hematology and Stem Cell Transplantation is available to the students on an optional basis. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 847 Externship: Infectious Disease**

As externs on the Infectious Disease inpatient ward, students act as daily care providers for newly admitted patients with HIV/AIDS, most of whom have opportunistic infectious and/or malignancies requiring in-hospital diagnostic evaluation and therapy. Students participate in daily multi-disciplinary team rounds that include an infectious disease attending, medicine house staff, clinical pharmacist, and physician assistants (PA'S). Students also may spend one-half day per week in the outpatient HIV clinic under the supervision of an infectious disease physician. Didactic sessions include a weekly one-hour Infectious Disease conference conducted at the Core Center, a two-hour clinical infectious disease conference held at Rush, and 12 lectures on HIV-related topics. Exposure to the microbiology lab takes place during which the following topics are reviewed: HIV testing, blood cultures, mycobacterial testing, susceptibilities. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 848 HIV Primary Outpatient Care**

In this course students learn about HIV primary care including HIV counseling and testing; prevention, diagnosis, and treatment of opportunistic infections; and antiretroviral therapy. Experiences will include adult, adolescent and pediatric HIV clinics, and brief exposure to a walk-in sexually transmitted disease clinic, and specialists in HIV dental, renal, cancer, hematology, and neurology specialty care, as well as mental health, social work, and chemical dependency support services. Didactic sessions include a one-hour weekly Infectious Diseases conference at the CORE Center and a two-hour clinical conference at Rush. The CORE Center provides comprehensive outpatient Infectious Disease services. Founded by Rush and the County of Cook, the Center is operated by the Cook County Bureau of Health Services. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 850 Short Stay Telemetry**

In this course students see patients on their own and go over their presentations with senior residents and attending staff. CXRs and EKGs are also reviewed with the attending staff. Students are exposed to the presentation and management of patients with chest pains, acute coronary syndromes as well as congestive heart failure and various arrhythmias. All patient orders will be supervised and co-signed by the house staff. Students usually see two patients daily and follow their patients for the ~48hr stay while they are on the observation unit. Students will be based on the

telemetry units Monday through Friday from 8 a.m. to 6 p.m. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 851 Rheumatology**

In this course, students participate in all activities of the Section of Rheumatology, including patient care in clinics, inpatient consultations, conferences and didactic sessions. A wide variety of musculoskeletal conditions and connective tissue diseases are seen. Objectives include performance of musculoskeletal exam, synovial fluid analysis, arthrocentesis, therapeutic injection of joints and other structures, ability to formulate differential diagnosis of rheumatic conditions and formulate long-term management programs. An interdisciplinary approach relies on contributions of immunology, orthopedics, diagnostic radiology, physiotherapy and occupational therapy. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 861 Medical Oncology**

Patients seen by the Section of Medical Oncology provide an ample and varied spectrum of oncological problems. Students study selected patients under the direction of members of the section. Various therapeutic approaches and complications occurring in the course of the disease are discussed. The program stresses the importance of the combined interdisciplinary approach using the resources of the Departments of Surgery and Therapeutic Radiology, as well as those of Pathology and Nuclear Medicine. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MED - 872 Pulmonary Consultation Services**

This course consists of Stroger Hospital inpatient pulmonary consults and outpatient pulmonary clinics. Students see patients on their own and present/discuss them with the team. They see a variety of new and follow-up patients. Stroger Hospital is renowned for the ethnic and clinical diversity of its patient population. Students also attend pulmonary rounds and conferences. The rotation consists of inpatient pulmonary consults and outpatient pulmonary clinics. Typical hours are 7:30 a.m. to 5 p.m. Students will have weekends off. Specific Educational Objectives of Clerkship: At the end of the rotation, students will: (1) display an approach to history taking, physical examination and interpretation of radiographic and physiologic studies to allow accurate description of acute and chronic respiratory syndromes; (2) be able to classify respiratory illnesses based

on tempo and findings as acute, sub-acute or chronic and categorize the illness as congenital or acquired, infectious, inflammatory, neoplastic or traumatic in nature; (3) demonstrate an organized approach to interpretation of chest imaging; (4) demonstrate an organized approach to interpretation of cardiorespiratory physiology; (5) demonstrate proficiency in physical examination of the patient with lung disease. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **MLS - 504 Clinical Chemistry I**

This course is designed to introduce students to Clinical Chemistry as used in Medical Laboratory Science (MLS). The biochemistry, clinical utility and analysis of amino acids, proteins, carbohydrates, lipids/lipoproteins, bilirubin and non-protein nitrogen-containing molecules will be presented. Renal physiology along with the chemical and cellular analysis of urine will also be presented. Course content includes correlation of data and case studies for selected disease states. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **MLS - 505 Clinical Chemistry II**

This course continues with the biochemistry, analysis and application of clinically-significant chemical substances. Topics include enzyme kinetics and clinical application of enzyme levels, endocrinology, bone and mineral metabolism, cardiac markers, tumor markers, body water balance, electrolytes, pH and blood gases, and testing for drugs of abuse and toxic alcohols. Course content includes the discussion of case reports and primary literature for selected disease states. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **MLS - 514 Hematology I**

This course introduces hematologic concepts and clinical applications. Students will learn about venipuncture, complete blood counts, hematopoiesis, erythrocyte metabolism, the synthesis and function of hemoglobin, leukopoiesis, and differentiation of leukocytes. After students learn about the normal aspects hematology, they will learn about the abnormalities associated with erythrocytes and leukocytes such as, anemias, hemoglobinopathies, thalassemias, and leukemias and lymphomas. Case studies will be used to further students' understanding of erythrocytes and leukocytes. Laboratory sessions included. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **MLS - 515 Hematology II**

The study of hematology is continued in this course in which students learn about coagulation and hemostasis and extend their knowledge of erythrocytes and leukocytes to the analysis of body fluids other than blood. Students will learn about megakaryopoiesis, hemostasis, coagulation and coagulopathies. In addition, the chemical and cellular analyses of the following fluids will be discussed: cerebral spinal, synovial, pleural, peritoneal, pericardial and seminal, as well as fecal analysis. Finally, students will learn how to differentiate between transudates and exudates as well the clinical significance of those analyses. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **MLS - 523 Clinical Immunology**

An introduction to the basic concepts and terminology of immunity is covered in this course, including development, structure, and function of the lymphoid system; the basis of antigenicity; antibody structure, production, and function; mechanisms of cellular and humoral immunity; the complement system; and mechanisms of immune suppression and tolerance. Topics also include the immune response and the laboratory testing related to measuring the immune response. The pathogenesis and laboratory diagnosis of immunological disorders such as hypersensitivities, immune deficiencies, and autoimmunity will be discussed. Solving case studies involving immune system disorders will be an important aspect of learning about these diseases. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **MLS - 524 Clinical Immunohematology**

This course provides the student with the practical and theoretical knowledge in whole blood collection, processing, and transfusion that is necessary to work in a blood center or clinical transfusion service. Topics include red cell immunology, genetics, and membrane biochemistry; characteristics of human blood group systems; serological testing systems; parentage testing; red cell antibody detection and identification; pretransfusion testing; quality management; blood product manufacturing including blood procurement, component preparation, and donor infectious disease testing; transfusion medicine practice; adverse effects of transfusion; and hemolytic disease of the fetus and newborn (HDFN). Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **MLS - 526 Molecular Techniques**

This course consists of an introduction to the principles, methodologies and applications of molecular biological procedures used in the clinical laboratories. Emphasis is placed on the molecular biological procedures used in the identification of infectious agents that cause human disease, in the diagnosis of inherited diseases, in the diagnosis of cancer and in the determination of risk factors for the development of cancer. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **MLS - 534 Clinical Microbiology I**

This course focuses on the diagnostic procedures employed in the clinical bacteriology laboratory, such as specimen collection and the cultivation, isolation, and identification of medically important bacteria. Mechanisms of antimicrobial activity and antibiotic susceptibility testing are discussed in depth. Laboratory activities familiarize the student with the appearance and colony morphology of clinically important bacteria and consist of learning procedures used in the identification of bacterial isolates, including the gram stain and various biochemical and molecular assays. These activities are then applied to the identification of unknown bacterial isolates found in patient specimens. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **MLS - 535 Clinical Microbiology II**

In this course, students will learn about the acquisition, disease, and identification of fungi (yeasts and molds), eukaryotic parasites, and obligate intracellular organisms including viruses and bacteria. Emphasis is on the diagnostic procedures used in the clinical laboratory to isolate and identify these organisms. Digital microscopy will be used to supplement lecture such that students will learn the morphology of fungi and parasites in particular. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **MLS - 541 Research in MLS I**

This is the first course in the MLS research series that is taken concurrently with Research Methods. In this course, students will apply research methods to the medical laboratory science scope of practice. Students will learn about the requirements for completing a research project in medical laboratory science that will satisfy graduation requirements including the components of the written research paper and content of the proposal and final defense presentations. Students will attend and evaluate the research defense presentations given by students who are preparing for

graduation. At the conclusion of this course, students will have selected a research topic and research mentor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **MLS - 542 Research in MLS II**

Completion of a research project provides the graduate student with the opportunity to participate in the design, implementation, analysis and reporting of original research in medical laboratory science (MLS) or translational research related to MLS. With the guidance of a research adviser, the graduate student will be involved in the planning and execution of a project as well as generate analyzable data that can be published in a primary journal. Students can undertake projects in any discipline within the scope of the field of medical laboratory science with the support of their chosen research adviser as well as the MLS faculty. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **MLS - 543 Research in MLS III**

This course is a continuation of MLS 542 Research in MLS II in which the student will complete the analysis of data generated during the first course and complete a written manuscript and final oral defense in culmination of the requirements for the degree. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **MLS - 580P Clinical Practicum-Chemistry**

This course builds upon the theoretical knowledge and techniques learned in the Clinical Chemistry courses in that students will directly see how the analyses of clinical chemistry are applied to the diagnosis and management of the patient. Students spend time in the clinical chemistry laboratory experiencing the environment of the clinical laboratory and working hands-on with state-of-the-art chemistry instrumentation and automation. Routine and special chemistry methodology, flow-cytometry, and electrophoresis are included. The daily experience will be supplemented with the analysis of case studies to support the development of critical thinking skills needed by the highly functional medical laboratory scientist. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **MLS - 581P Clinical Practicum-Hematology**

The diagnosis of diseases related to the blood as first learned in the prerequisite courses will be reinforced in this practicum experience in which students spend time observing and performing hematological tests in a clinical

laboratory. The use of automation and instrumentation to perform basic hematological analyses, specialized hematology testing techniques, and advanced techniques are included. Additional analysis of case studies as well as identification and evaluation of a quality assurance/control issue are required. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **MLS - 584P Clinical Practicum-Immunohematology**

The working immunohematology laboratory will be the setting for this clinical practicum. Students will observe and perform routine and specialized tests that are critical for ensuring the safe transfusion of blood and blood products into patients. The basic skills learned in the prerequisite course will be reinforced. Students will directly experience the impact regulatory bodies have on transfusion services. Case studies and the analysis of quality control/assurance issues will be used to foster the development of critical thinking skills. Instrumentation and advanced methodologies are emphasized. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **MLS - 585P Clinical Practicum-Education**

It is expected that the entry-level medical laboratory scientist will be able to train and/or educate users and providers of laboratory services. In this practicum, students will learn and apply educational methodologies and terminology. They will also analyze and improve their communication skills. Students will assist in the instruction of the first-year student laboratory sessions including working with the course director to prepare for these exercises. In addition, to demonstrate the acquisition of the communication skills sufficient to teach, students will prepare and deliver a unit of instruction including appropriate learning objectives and evaluation of learning. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **MLS - 586P Patient Care Techniques**

Pre-analytical situations and best practices in specimen collection techniques are reinforced through extensive discussion and practice in this course. Students will perform venipuncture procedures on patients throughout both inpatient and outpatient settings. Pediatric and geriatric patients are included, as are general adult populations. Evaluation of pre-analytical situations involving documentation, transportation requirements, and infection control are also covered in this course. Students will improve their communication skills as they interact with patients and other healthcare providers. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **MLS - 587P Clinical Practicum-Microbiology**

In this practicum, students will spend time in the clinical microbiology laboratory observing and performing tests for the isolation and identification of clinically significant bacteria, fungi, viruses and parasites. The determination of antimicrobial susceptibility, detection of resistance, and interpretation of susceptibility patterns will be reinforced. Instrumentation and advanced methodologies are emphasized. The daily experience will be supplemented with the analysis of case studies to support the development of critical thinking skills needed by the highly functional medical laboratory scientist. Students will interact with other healthcare professionals, e.g. pharmacists, physicians, and infection control nurses during rounds and/or case conferences. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **MLS - 588 Comprehensive Review**

A comprehensive review of hematology, body fluid analysis, clinical chemistry, laboratory operations, immunology, immunohematology, molecular diagnostics, and microbiology will be the focus of this course through the analysis of multi-disciplinary case studies and completion of weekly examinations. This review course prepares students for the national certification examinations. At the completion of the review all students will take a comprehensive examination. Successful passing of all sections of the departmental comprehensive examination is required for completion of the course and for graduation. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **MLS - 589 Clinical Laboratory Management**

Management of the clinical laboratory will be covered in this course with topics to include operational aspects of the laboratory, human resource management, financial considerations of running a laboratory, error management, personality and leadership styles, and crisis and disaster management. Students will participate in interactive sessions designed to help them understand and develop important leadership and management concepts. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **MLS - 900 Independent Study**

Prerequisite: Departmental permission. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-12

#### **MLS - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **NEU - EXM Neurology Exam Remediation**

Remediation of course examination. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **NEU - REM Neurology Clinical Remediation**

Remediation of clinical weeks. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **NEU - 7EI Neurology Individualized Elective**

Students may receive credit for an individually arranged elective with a Rush faculty member. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter stating the student's activities, responsibilities, amount of supervision, and specific dates of the rotation. The sponsoring faculty member must complete an evaluation of the student's performance at the conclusion of the elective. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the assistant dean of Clinical Education before beginning the rotation. Students may receive four weeks of credit for an individually arranged elective. Credit for a maximum of only one individually arranged elective will count toward graduation requirements. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **NEU - 591 Advanced Neuroscience Proseminar**

Taught jointly by participating faculty, seminar format is used to encourage extensive discussion and participation. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 2



**NEU - 699 Doctoral Research**

Research credits after admission to candidacy. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-9

**NEU - 701 Core Clerkship: Neurology**

This course is designed to introduce students to the care of patients with neurological illness. Through an exposure to patients with a variety of illnesses, the students develop their neurological examination and history-taking skills, as well as an understanding of the work-up, diagnosis, and management of patients with neurological symptoms and diseases. At both Rush and Stroger Hospitals, the student has extensive interaction with both attending staff and residents, and participates in daily attending rounds. Didactic teaching during the rotation includes a formal lecture series on topics in clinical neurology. In addition, there are weekly departmental conferences including Neurology Grand Rounds. Students participate in the diagnostic workup of assigned patients. At Rush, the student is a member of the general neurology floor service and the stroke/critical care service for two weeks each. At Stroger Hospital, students are members of the neurology team that sees neurology inpatients and consultation patients, as well as attending two outpatient clinics per week. All students are expected to be in attendance and prepared for daily work rounds and daily attending rounds. They are responsible for performing a history and physical examination on their assigned patients and presenting their patients. Students are expected to be involved closely in the initial and daily follow-up care of their patients, including writing daily notes. In addition, students are expected to attend all assigned lectures and conferences. There is rotating call for medical students. Students are required to participate in clinical activities the Thursday morning before the mini-board examination. Required Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**NEU - 781 Research in Neurology**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout the academic year. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the

director of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of eight weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Clinical Curriculum. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-8

**NEU - 792 Advanced Neurology**

This advanced course is intended to provide students the opportunity to further develop their clinical skills in the evaluation of patients with neurologic conditions. Students build on the foundational knowledge and experience from the core neurology clerkship, successful completion of which is required. Prior to the start of the rotation, students have the option to identify subspecialties in which they have interest so that a schedule can be developed to reflect these interests. Students may choose to focus on any subspecialties within neurology including general neurology, neuromuscular, stroke, epilepsy, multiple sclerosis, neuro-oncology, neuro-ophthalmology, movement disorders, child neurology, dementia, sleep, as well as in the neuro ICU service and neuro-endovascular service. This is a flexible program which will be structured by the course director and course coordinator to best fit the interests of the individual student, based on clinic and attending availability. Specific areas of interest should be discussed with the coordinator at least 8 weeks prior to the rotation start date. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

**NEU - 793 Neurosciences Intensive Care Unit (NSICU)**

The Neurosciences Intensive Care Unit (NSICU) elective is designed to expose M4 students to the management of critically ill neurological and neurosurgical patients. Students will have the opportunity to comprehensively evaluate patients, determine how to review and interpret various neuroimaging modalities, present their findings on rounds and develop an initial assessment and plan. Basic principles behind end of life issues, brain death, and organ donation will be discussed. Exposure to the entire spectrum of neurocritical care will be available, including disorders of consciousness, acute ischemic strokes, hemorrhagic strokes, subarachnoid hemorrhages, neuromuscular diseases, CNS infections, seizures and status epilepticus as well as neuro-oncological emergencies. Students are expected to follow patients from

admission to the NSICU until discharge to the floor or outside facility. The number of patients will vary widely depending on the acuity and specifics of their disease. Students performance will be assessed via NSICU patient presentations at AM rounds. Formative feedback will be provided to students at the conclusion of the patient presentation. A summative evaluation will be provided at the end of the course. Students have a choice of taking this elective for one or two weeks. Retake course for credit: No. Pass/no pass grading allowed: No. Credit(s): 1-2

**NEU - 900 Independent Study**

Specialized course work designed around the needs of an individual student. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-12

**NEU - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

**NRS - 541P Specialty Practicum**

This course is designed to provide advanced nursing practice students with an opportunity to achieve population competence at the graduate level. The experience is accomplished under the guidance of an approved preceptor/facilitator. The minimum number of clock hours of practicum and residency may be determined by the population specific credentialing body and graduate requirements may vary across population programs. Prerequisite or co-requisites: Core courses as determined by each program; and RN Licensure. Clinical conference is included. Post-master's student requirements are individually determined. P/N grading. (Variable) Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-12

**NRS - 600P Specialty Residency**

This course is designed to provide advanced nursing practice students with an opportunity to achieve specialty competence at the graduate level. The experience is

accomplished under the guidance of an approved preceptor/facilitator. The minimum number of clock hours of practicum and residency may be determined by the specialty specific credentialing body and graduate requirements may vary across specialty programs Prerequisite or co-requisites: Core courses as determined by each program. P/N grading. (Variable) Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-7

**NSG - 500 Socialization Into Nsg Semr**

Historical, theoretical and ethical underpinnings of the discipline, as well as professional standards that guide practice are used to assist the learner in understanding nursing as a scientific discipline and a social phenomenon, and in developing a personal philosophy to guide professional nursing practice. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**NSG - 501 Role of Professional Nurse**

This course presents concepts essential to the practice of client/patient and family-centered nursing across the life span. Students will examine essential physiological and psychosocial concepts, the professional role, and introductory clinical reasoning, while respecting individual and cultural diversity. Corequisite: Role of the Professional Nurse Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 501P Role Professional Nurse Practicum**

The learner will use clinical reasoning to holistically address client's/patient's health and wellness needs. Learner will apply psychosocial and physiological concepts, therapeutic communication, pathophysiology, biostatistics and epidemiology to diverse clients/patients and families in a variety of settings. Focus will be on the patient/client within the context of the client/patient system. Corequisite: Role of the Professional Nurse Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 502 Nsg Mgt: Common Health Alt/Life Span**

This course presents physiological, psychosocial, cultural, developmental and ethical concepts of common acute or exacerbated health alterations across the life span. Concepts of health promotion and disease prevention are introduced using evidence-based interventions. Inter- and intra-professional collaboration for ensuring quality health outcomes is emphasized. Prerequisite: Role of the Professional Nurse; Corequisite: Nursing Management of Common Health Alterations Across the Life Span Practicum

Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 502P Nsg Mgt: Common Health Alt - Practicum**

This course provides an opportunity for the learner will apply concepts learned in the didactic portion of the course to the care of patients across the life span experiencing common acute or exacerbated health alterations. Prerequisite: Role of the Professional Nurse Practicum; Corequisite: Nursing Management of Common Health Alterations Across the Life Span Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 503 Psychiatric & Mental Health Nursing Prac**

This course examines the etiology, manifestations, and clinical management of selected mental illnesses across the life span and continuum of care. Students will analyze systems and the evidence base for psychiatric nursing and apply this knowledge in promoting mental health and the optimal functioning and rehabilitation of individuals, families, and communities with mental health problems. Prerequisite: Nursing Management of Common Health Alterations Across the Life Span; Corequisite: Psychiatric and Mental Health Nursing Practicum (3) Prerequisite: Nursing Management of Common Health Alterations Across the Life Span; Corequisite: Psychiatric and Mental Health Nursing Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 503P Psych & Mental Health Nrs Practicum**

This clinical practicum provides the learner with the opportunity to develop clinical competence in psychiatric and mental health clinical settings. Emphasis is placed on the development and maintenance of the therapeutic relationship with clients/patients and families across the continuum of care. Prerequisite: Nursing Management of Common Health Alterations Across the Life Span Practicum; Corequisite: Psychiatric and Mental Health Nursing(3) Prerequisite: Nursing Management of Common Health Alterations Across the Life Span Practicum; Corequisite: Psychiatric and Mental Health Nursing Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 504 Women's Health Across the Life Span**

This course presents physiological, psychosocial, cultural, developmental and ethical issues of women's health across the life span, including pregnancy and birth. Concepts of health promotion and disease prevention are stressed using evidence-based interventions. Inter- and intra-professional collaboration for ensuring quality health outcomes is

emphasized. Prerequisite: Successful completion of Terms 1, 2 and 3; Corequisite: NSG 504P Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 504P Women's Health Nursing**

This course provides clinical practice opportunities for students to manage the care of women, newborns, and the childbearing family. Students will integrate evidenced-based health promotion and health maintenance information when teaching and developing nursing plans of care for women, newborns and the childbearing family. Prerequisite: NSG-503 and NSG-503P Corequisite: NSG-504 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **NSG - 505 Public Health Nursing**

This course uses an ecological model to assess the nursing care needs of individuals, families and groups in the community. Evidence based strategies to promote health and reduce risk for individuals, families and groups are analyzed within the context of the communities in which they live. The impact of public health laws and regulations on public safety and access to care are examined. Prerequisite: NSG-522 and NSG-524; Corequisite: NSG-504 and NSG-508P (3) Prerequisite: NSG-522 and NSG-524; Corequisite: NSG-504 and NSG-508P Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 505P Public Health Nursing Practicum**

This course provides the opportunity for the learner to apply knowledge and skills in providing nursing care across the life span for individuals, families, and groups in community settings. The learner will apply the ecological model to integrate evidence-based health promotion, prevention, and risk reduction strategies for individuals, families and groups within the context of the communities in which they live. The impact of public health laws and regulations on public safety and access to care are examined. Prerequisite: successful completion of terms 1-3; Corequisite: NSG-505 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **NSG - 506 Nsg Management of Complex Hlth**

This course presents Physiological, psychosocial, cultural, development and ethical concepts in the case management of complex health alterations across the life span. Inter- and intra-professional collaboration for ensuring quality health outcomes is emphasized, LT grade Prerequisite: NSG 504 and NSG 505; Corequisite: Nursing Management of Complex Health Alterations Across the Life Span Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 506P Nsg Management of Complex Prac**

This course provides an opportunity for the learner to apply concepts learned in the didactic portion of the course to the care of patients across the life span experiencing complex health alterations. P/F grade Prerequisite: Integrated Clinical; Corequisite: Nursing Management of Complex Health Alterations Across the Life Span Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 507 Preparation for Professional Practice**

This course will provide pre-licensure students with the opportunity to analyze the CNL role in the context of the health delivery system with an emphasis on various micro-systems in the practice settings. Prerequisite: Successful completion of Terms 1 - 5. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **NSG - 510 Pathophysiology**

This course provides a conceptual, life span approach to alterations in normal anatomic structure and function. General and system specific concepts related to causation and clinical presentation of pathophysiology will be discussed. This course will provide the foundation for the application of pathophysiologic concepts to common clinical situations. Critical thinking is emphasized. Application of evidence-based pathophysiologic research will be discussed. Prerequisite: Anatomy and physiology Prerequisite: Anatomy and Physiology Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 511 Pharmacology**

This course provides a conceptual, life span approach to understanding the principles of pharmacokinetics and pharmacodynamics that provide the foundational knowledge critical to understanding pharmacotherapeutics. Critical thinking is emphasized. Application of research is discussed. Prerequisite: Pathophysiology for the Advanced Generalist Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 512 Clinical Leadership & Proj Development**

Using a case-based approach, this course provides the learner with an opportunity to apply concepts and principles of clinical leadership and quality improvement to address issues related to care outcomes. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 513 Clin Project Implementation**

This clinical course expands the student's clinical competency & integrates the role of the Clinical Nurse Leader in a variety of clinical settings. The student will demonstrate progressive competence & independence in meeting the clinical objectives throughout the experience. Students will use this clinical experience to develop and/or implement the Capstone project. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 5

#### **NSG - 514 Immersion: Clinical Practicum**

This clinical immersion course provides the student with the opportunity to expand clinical competency and begin integration of the clinical nurse leader in a variety of clinical settings. The student will demonstrate progressive competence and independence in meeting the course objectives throughout the experience. Prerequisite: Successful completion of Terms 1 - 5 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 5

#### **NSG - 515 Clin Project Implementation**

This clinical course expands the student's clinical competency & integrates the role of the Clinical Nurse Leader in the clinical setting. The student will demonstrate CNL competencies. Students will use this clinical experience implement the Capstone project. Prerequisite: Successful completion of Terms 1 - 5 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 5

#### **NSG - 517 Immersion: CNL Role Practicum**

This clinical immersion course provides the post-licensure student with the opportunity to integrate the role of the clinical nurse leader in the areas of case management (5 weeks), education (5 weeks), and CNL practice (5 weeks). This practicum provides an opportunity to practice in the major foci of the CNL role. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 5

#### **NSG - 518 Palliative Care for Nursing**

The purpose of the courses is to educate nursing students about palliative care and its recognized growing needs in healthcare. Students will learn to directly and/or indirectly incorporate palliative care into their practice. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **NSG - 521 Organizational & Systems Leader**

This course provides the student with an opportunity to explore organizational and leadership theories, and analyze the process of managing change. The effects of operational and managerial processes on practice environments that

affect outcomes, quality, safety and cost effectiveness of patient care are discussed. Ethical leadership principles and role development underpin the course content. Clinical informatics as a component of healthcare is integrated throughout the course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 522 Applied Epidemiology Biostats Nursing**

This course develops students' ability to apply epidemiological and statistical concepts to guide evidence-based practice in a dynamic health care environment at the micro and mezzo level. Students use public data sources, data management software and the published literature to understand and address health concerns in populations, and in evaluating economic evidence of health interventions and programs. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 523 Research for Evidence-Based Practice**

Students will develop an understanding of the research process and how research evidence influences practice. Students will identify appropriate practice questions and use multiple methods and informatics to systematically obtain sound evidence about practice questions. Students will critically analyze and apply research evidence to improve practice outcomes in culturally diverse populations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 524 Health Promotion in Individuals & Clinical Populations**

Students will use theories and models to examine determinants of health and to guide health promotion and illness/injury prevention strategies and practice. Students will use informatics to gather and evaluate health data, locate and utilize evidence based practice strategies and evaluate quality of health information. Prerequisite: Applied Epidemiology and Biostatistics for Nursing Practice Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 525 Health Assessment Across the Life Span**

This course is designed to teach the didactic components of a comprehensive history and physical examination of individuals/families across the life span and the documentation of findings. The course provides a framework of critical thinking based on careful collection of history and physical findings and their systematic analysis. The course content is organized around assessment of specific body systems of individuals/families across the life span. Corequisite: NSG

525L, NSG 501 and NSG 501P Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **NSG - 525L Health Assessment Across the Life Span Lab**

This course is designed to teach the didactic components of a comprehensive history and physical examination of individuals/families across the life span and the documentation of findings. The course provides a framework of critical thinking based on careful collection of history and physical findings and their systematic analysis. The course content is organized around assessment of specific body systems of individuals/families across the life span. Successful completion of all preceding clinical courses Corequisite: Health Assessment Across the Life Span Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **NSG - 531 Advanced Pharmacology**

This course covers the principles of pharmacokinetics and pharmacodynamics. The course is designed to provide the foundational knowledge requisite to understanding pharmacotherapeutics. Prerequisite: Advanced Physiology or Advanced Pathophysiology or Neonatal Pathophysiology Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 532 Advanced Physiology**

This course covers selected aspects across the lifespan of advanced cell biology and systems physiology that are related to cellular homeostasis and viability in humans. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 533 Advanced Pathophysiology**

This course incorporates scientific concepts, principles, and theories into discussion of advanced pathophysiologic processes across the life span. Pathophysiology is a combined science that encompasses definition/classification, epidemiology, risk factors, etiology, pathogenesis, and clinical manifestations. The initial sections of the course cover basic mechanisms of disease which are then integrated into subsequent discussions of selected system-related disorders. Learning activities and evaluation strategies are focused on the development and assessment of critical thinking and problem-solving in clinical scenarios to facilitate real-world practice applications and prepare students for certification exams. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 534 Major Psychopathological Disorders**

This course will focus on the epidemiology, etiology, clinical manifestation and treatment of selected psychopathologic disorders across the life span. Emphasis will be placed on assessment and interventions in a variety of settings. This emphasis will also include the impact of culture on diagnosis and treatment of selected disorders and a critical evaluation of relevant research findings. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 535 Diagnostics for the APRN**

This course prepares the advanced practice nursing student to use, interpret, and implement laboratory and diagnostic testing in the clinical setting for the use, interpretation, and application of laboratory, diagnostic techniques and procedures. With this information, the student will learn to use critical thinking and decision making skills to interpret laboratory and diagnostic testing results across the life span Prerequisite: Advanced Pathophysiology and Advanced Physiology Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 536 Principles of Case Management**

This course is designed to provide an overview of the evolution and core principles of case management. Contemporary case management models across the health care continuum will be analyzed. Case management competencies will be addressed. A major focus is to identify strategies that promote appropriate clinical outcomes of care, coordination of care, and cost-efficient utilization of resources using a systems perspective. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 537 Transition to the APRN Role**

This course addresses issues relevant to APRN practice. It focuses on models of APRN practice, ethical principles, regulation, quality outcomes, reimbursement, and professional issues related to an APRN entering a first position in the current marketplace. Prerequisite: Research for Evidence Based Practice and Organizational & Systems Leadership Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 541 Chemistry & Physics in Anesthesia**

Students will learn to apply the basic principles of chemistry and physics in nurse anesthesia practice, and will review medical math. The components of an anesthesia machine will be analyzed and currently available monitoring devices

will be reviewed and compared. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 542 NRS Anesthesia Pharmacology**

This course provides a comprehensive study of the pharmacokinetics and pharmacodynamics of drugs used in nurse anesthesia practice. The interactions between anesthetic agents and other pharmacological substances will be discussed. Learners will review the effects of the aging process and its altered physiology on anesthesia pharmacology. Corequisite: NSG 531 - Advanced Pharmacology. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 543A Anesthesia Princip I: Basic Princip**

A solid foundation of basic knowledge is vital to nurse anesthesia practice. This course provides a comprehensive orientation to nurse anesthesia practice, facilitating incorporation of safe, basic, principles into the delivery of competent, responsible patient care. In the co-requisite practicum course, there will be experiences that will allow the students to begin to develop the general clinical skills in the practice of anesthesia that will serve as the basis for subsequent progression to a more advanced nurse anesthesia practice. LT grade Prerequisite: NSG 541 - Chemistry and Physics for Nurse Anesthesia; Corequisite: Nurse Anesthesia Practicum. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 543B Anesthesia Princip II: Adv Princip**

This course is for the student who has a foundation in the basic principles and practice for nurse anesthesia. During this course, students learn anesthetic management principles for surgical specialty areas. Important concepts to master include the related anatomic, physiologic, pathophysiologic & pharmacologic principles for each of the surgical specialty areas. LT grade Prerequisite: Anesthesia Principles I, Anesthesia Pharmacology; Corequisite: Nurse Anesthesia Clinical Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 543C Anesthesia Princip III Obstetric & Pediatric**

This course provided essential content for nurse anesthesia care in the specialty areas of obstetric & pediatric anesthesia. Learners will acquire knowledge related to the preoperative assessment of obstetric & pediatric patients, as well as the planning, implementation & evaluation of nurse anesthesia care provided to obstetric & pediatric patients undergoing diagnostic & surgical procedures. LT grade

Prerequisite: Nurse Anesthesia Principles I & II: Basic & Advanced Principles of Nurse Anesthesia Care; Corequisite: DNP Clinical Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 546 Developmental Physiology Fetus/Neonates**

This course is designed to provide the student with greater depth of understanding of developmental physiology of the fetus and neonate. Principles of growth and development, genetics/teratogenesis, embryology, and maturation of organ systems as related to critical periods of intrauterine development, transition to extrauterine life, and through early infancy will be covered. Adaptation to physiologic stress and alterations from normal will also be discussed. Prerequisite: Advanced Physiology Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 547 Neonatal Pathophysiology**

This course provides a graduate level conceptual approach to principles and content in neonatal pathophysiology which form the scientific foundation for the development, implementation, and evaluation of clinical therapeutics. It is designed to provide the advanced practice nursing student with an in depth analysis of advanced neonatal pathophysiology. General and system specific concepts related to causation and clinical presentation of selected pathophysiologic states will be discussed. Prototype diseases are used to illustrate pathophysiologic concepts and assist the student in applying these concepts systematically. Prerequisite: Developmental Physiology of the Fetus/Neonates Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 548 Advanced Neonatal Physical Assessment**

This course is designed to develop the student's knowledge of comprehensive physical assessment and the diagnosis of physical findings in the premature and term neonate. The central objective of the course is to emphasize the importance of critical reasoning and clinical decision making based on a thorough collection of history and physical findings, accurate documentation and their systematic analysis. The course content is organized around assessment of specific body systems of the neonate. The neonate's presentation at birth is emphasized. Prerequisite: Advanced Physiology (core), Neonatal Pathophysiology Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 549 Neonatal Pharmacotherapeutics**

This course is designed to provide advanced practice nursing students with a working knowledge of the impact of neonatal physiology on drug pharmacology. Building on the student's knowledge of pharmacokinetics and pharmacodynamics, content includes the role and responsibilities of the APN in prescribing medications, considerations in medication selection for the treatment of a variety of neonatal conditions, diseases and disorders, as well as monitoring the physiological responses to such interventions. Also addressed are the effects of drugs during pregnancy and lactation on the fetus and neonate Prerequisite: Advanced Pharmacology (3) Prerequisite: Advanced Pharmacology Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 550A Neonatal Management I**

This is the first of three sequential management courses that provide the theoretical and practical knowledge for the neonatal nurse practitioner to manage the health care needs of the neonate at the highest level of nursing practice. Course content focuses on the recognition and management of common conditions affecting the newborn. Demonstrating critical thinking and diagnostic reasoning skills in clinical decision making, developing a plan of care based on scientific evidence and practice guidelines, and instituting evidence-based strategies to provide psychosocial support and education for the infant's family are emphasized. Prerequisite: Dev Phys of the Fetus/Neonates, Neonatal Pathophysiology; Corequisite: Clinical Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 550B Neonatal Management II**

This is the second of three sequential management courses that provide the theoretical and practical knowledge for the neonatal nurse practitioner to manage the health care needs of the neonate at the highest level of nursing practice. Course content focuses on the recognition and management of acute conditions affecting the neonate/preterm infant. Demonstrating critical thinking and diagnostic reasoning skills in clinical decision making, developing a plan of care based on scientific evidence and practice guidelines, and instituting evidence-based strategies to provide psychosocial support and education for the infant's family are emphasized. Prerequisite: Neonatal Management I; Corequisite: Clinical Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 550C Neonatal Management III**

This is the final of three sequential management courses that provide the theoretical and practical knowledge for the neonatal nurse practitioner to manage the health care needs of the neonate at the highest level of nursing practice. Course content focuses on the recognition and management of life-threatening conditions affecting the neonate/preterm infant. Demonstrating critical thinking and diagnostic reasoning skills in clinical decision making, developing a plan of care based on scientific evidence and practice guidelines, and instituting evidence-based strategies to provide psychosocial support and education for the infant's family are emphasized. Prerequisite: Neonatal Management II; Corequisite: Clinical Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 551A Advanced Primary Care of the Child I**

The course focus is on the development of pediatric clinical judgment. A chronological approach is used to address preventative health care services and identification and management of common health problems in infants, children, and adolescents. Prerequisite: Health Assessment across the Life Span PNP and AC PNP Students Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 551B Advanced Primary Care of the Child II**

The course content provides the theoretical basis for clinical judgment and decision making skills for providing primary care to ill children and their families. A systems approach is used to focus on assessment and management of acute and common health problems. The is the second course in the three course series in the PNP management sequence Prerequisite: Advanced Primary Care of the child I Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 551C Advanced Primary Care of the Child III**

The course enhances clinical judgment and decision making skills required in providing primary care to children with complex physical and psychosocial needs due infectious disease, genetics and environmental conditions. A systems approach is used to focus on assessment and management of complex health problems. This is the third class in a three part series. Prerequisite: Advanced Primary Care of the Child II Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 556 Appl Pharmacology: Pediatrics**

In this course, pediatric advanced practice students apply a systematic process for therapeutic prescription plans for selected common acute and chronic health conditions. Prerequisite: Advanced Pharmacology. Co: Adv Primary Care of the Child I Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 557A Pediatric Acute Care I**

The course content provides the theoretical basis for clinical judgment, decision-making, and procedural skills for delivering complex acute, critical, and chronic health care to ill or injured children and their families. Recognition and management of emerging health crises and organ dysfunction by systems are emphasized. Part one of a two-part series. Prerequisite: Advanced Primary Care of the Child I or equivalent; Corequisite: Clinical Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 557B Pediatric Acute Care II**

The course content provides the theoretical basis for clinical judgment, decision-making and procedural skills for delivering complex acute, critical, and chronic health care to ill or injured children and their families. Recognition and management of the injured child and transitions in care are emphasized. This is part two of a two-part series. Prerequisite: Pediatric Acute Care I; Corequisite: Clinical Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 565 Public Health Systems & the APHN Role**

Students will examine ethical, economic, financial and role issues relevant to community and public health care. The focus will be on helping students gain knowledge, tools, and experience to understand community-based and public health care organizations, their roles and functions within the US Health Care System, and the advanced nursing role in these organizations. Prerequisite: Healthcare Economics, Policy, Finance (NSG 602); Leadership in Evolving Healthcare Environments (NSG 600); Applied Epidemiology and Biostatistics for Nursing Practice (NSG 522) Corequisite: 1-3 credit hr NSG 606 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 566 Population Assessment & Health Promotion Frameworks**

This is the first of two sequential courses in population assessment and intervention planning. The course focuses on an application of the concepts and methods for conducting

an in depth assessment of health status among populations, which serves as the foundation for the health planning process. Principles of epidemiology and assessment frameworks are applied in analyzing population and organizational level data to provide understanding of population needs and resources. Students examine health promotion frameworks in relation to effective approaches to guiding population level interventions Prerequisite: Applied Epidemiology and Biostatistics (NSG 522), Research for Evidence Based Practice (NSG 523); Prerequisite or corequisite for APHN and Pop Health MSN-DNP students: Public Health Systems & APHN Role (NSG 565), 1-3 credit hours NSG 606 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 567 Population Intervention Planning, Implementation & Evaluation**

This is the second of two sequential courses in population\* health assessment and program/intervention planning. The course is organized around planning as a method of decision-making. Various theoretical frameworks are applied to the development of a plan to meet the health needs of selected populations at-risk, based on an in-depth population assessment. Formulation of implementation strategies and evaluation schemes for sustainable program/intervention development are discussed. Emphasis is on implementation and evaluation methods for innovative nursing practice with communities/populations. \*For the purposes of this course, the term population is defined to include the traditional public health population and clinical populations/aggregates. Prerequisite: Population Assessment and Health Promotion Frameworks (NSG 566); Corequisite: 1-3 hours NSG 606 specialty practicum for APHN and Poplead students only: Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 568 Environmental Health**

This course provides an overview of the core principles in environmental health. Emphasis is on application of basic concepts to address specific environmental hazards that affect the health of individuals and populations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 569 Maternal Child Mgt for FNP**

This course addresses the diagnosis and management of 1) common acute and chronic health care problems in children from infancy through adolescence and 2) pregnancy and fertility issues for women of child-bearing age. Prevention,

screening, diagnosis, treatment, and counseling of these patients and their families form the framework for students to refine evidence-based clinical decision-making and reasoning skills. Quality, cost-effectiveness and safety are integrated in the development of patient-centered management plans. Prerequisite: Health Assessment across the Life Span, Diagnostics for the Advanced Practice Nurse, and Pharmatherapeutics in Primary Care; Corequisite: Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 570A Pharmacotherapeutics Acute Care**

Course provides the advanced practice nurse with knowledge of pharmacotherapeutics for common acute and chronic health conditions across the life span according to specialty area of practice. Building on the student's knowledge of pharmacokinetics and pharmacodynamics, content includes medications used for the diagnosis and treatment of a variety of physical and psychiatric disorders and monitoring the physical, behavioral and psychiatric responses to such interventions. The course is offered in sections according to specialty area of practice. Prerequisite: Advanced Pharmacology Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 570B Pharmacotherapeutics Primary Care**

Course provides the advanced practice nurse with knowledge of pharmacotherapeutics for common acute and chronic health conditions across the life span according to specialty area of practice. Building on the student's knowledge of pharmacokinetics and pharmacodynamics, content includes medications used for the diagnosis and treatment of a variety of physical and psychiatric disorders and monitoring the physical, behavioral and psychiatric responses to such interventions. The course is offered in sections according to specialty area of practice. Prerequisite: Advanced Pharmacology Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 571A Management: Adult/Gerontology I**

This course addresses the diagnosis and management of selected common acute and chronic health care problems in the late adolescent through older adult populations. Prevention, screening, diagnosis, treatment, and counseling adult patients form the framework for students to refine evidenced-based clinical decision-making and reasoning skills. Quality, cost-effectiveness and safety are integrated in the development of patient-centered management plans. The major focus of this course is: cardiovascular, pulmonary,

endocrine, women's health problems and gerontological considerations. Prerequisite: Pharmacotherapeutics, and Health Assessment across the Life Span (Specialty); Corequisite: Clinical Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 571B Management: Adult/Gerontology II**

This course addresses the diagnosis and management of selected common acute and chronic health care problems in the late adolescent through older adult populations. Prevention, screening, diagnosis, treatment, and counseling adult patients form the framework for students to refine evidenced-based clinical decision-making and reasoning skills. Quality, cost-effectiveness and safety are integrated in the development of patient-centered management plans. The focus of this course is: neurological, sensory, musculoskeletal, dermatological, psychiatric, oncological, women's health problems, and gerontological considerations. Prerequisite: Management: Adult/ Gerontology I; Corequisite: Clinical Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 571C Mgt: Adult/Ger Acute & Critical Illness I**

This course addresses the diagnosis and management of selected acute, chronic, and critical health care problems in the late adolescent (16 years) through older adult populations. Prevention, screening, diagnosis, treatment, and counseling adult patients form the framework for students to refine evidence-based clinical decision-making and reasoning skills. Quality, cost-effectiveness and safety are integrated in the development of patient-centered management plans. Prerequisite: Management: Adult/Gerontology I and II, Pharmacotherapeutics for Acute Care; Corequisite: Clinical Practicum Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **NSG - 571D Mgt: Adult/Ger Acute & Critical Illness II**

This is the third clinical management course that focuses on the advanced management of the critically ill adult patient. This course addresses the synthesis of critical illness management. NSG-570A, NSG-571A and NSG-571C NSG-605 and NSG-607 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **NSG - 572 Quality & Safety for the Aging Adult**

This course prepares nurse leaders to create a culture of quality improvement and patient safety for the aging adult. Current models of quality & patient safety are evaluated in the context of national trends & healthcare priorities.

The essential role of interprofessional teams as a mechanism to improve quality & patient safety is addressed. LT Prerequisite: Research for Evidence- Based Practice, Organizational and Systems Leadership; Corequisite: Health Promotion in Individual and Clinical Populations, Leadership in Evolving Healthcare Environments Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 575 Psychopharmacology**

This course is designed to provide advanced practice nursing students with knowledge of pharmacotherapeutics for common acute and chronic health conditions across the life span. It will also prepare PHMNP students to use, interpret and apply appropriate laboratory diagnostic procedures to the use of medications to treat a variety of psychological and psychiatric disorders. Building on the student's knowledge of pharmacokinetics and pharmacotherapeutics, content includes medications used for the diagnosis and treatment of a variety of psychological and psychiatric disorders and monitoring the physiological, psychiatric and behavioral responses to these interventions Prerequisite: Advanced Pharmacology, Neuropathophysiology Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 576 Neuropathophysiology: Life Span Approach**

This course is designed to provide advanced practice nursing students with knowledge of the essential neuropathophysiology of mental illness, across the life span. Building on the basics of cell physiology and neural transmission, this course focuses on the neurobiology of select serious mental illnesses. There is emphasis throughout on the neural structures and functions thought to be implicated in symptom presentation and disease progression of select serious mental illnesses. Prerequisite: Adv Pathophysiology Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NSG - 577A Diagnostics & Management I: Psychiatric Assessment Across Life Span**

This course will focus on the methods for gathering pertinent data in order to conduct a psychiatric assessment, arrive at a differential diagnosis and make appropriate treatment recommendations with clients across the life span demonstrating psychiatric symptoms. Prerequisite: Psychopharmacology; Corequisite: Practicum or with permission from Instructor Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 577B Diagnostics & Management II: Evidence Based Treatment**

The theoretical basis for psychotherapeutic nursing interventions across the life span is examined. Cognitive treatment and evidence based therapy techniques receive particular emphasis. Management of common psychiatric disorders via clinical practice guidelines is a third course thread.

Prerequisite: Diagnostics and Management I: Psychiatric Assessment across the Life Span; Corequisite: Practicum or with permission of instructor Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 577C Diagn Mgt III: Group Therapy and Complex Care**

This course has three foci: in depth analysis of theory and research as a basis for the clinical practice of group psychotherapy; exploration of the mental health recovery paradigm, and finally, the assessment, planning and intervention in complex care of individuals with co-morbid substance use and medical conditions Prerequisite: Major Psychopathological Disorder; Corequisite: Clinical Practicum or with approval of instructor Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 578 Interprofessional Cultural Competency Via Community Based Service**

This interprofessional course is designed to provide students across the disciplines with the knowledge and skills to provide care within diverse populations and communities. Students will examine personal attitudes and beliefs as they relate to cultural competency and will develop and implement a service learning project in conjunction with and the needs of the community setting in which they are placed; they will reflect on their experiences as they examine their personal beliefs, values, and views, as well as their experiences interacting with each other and their community partners. LT Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 600 Leadership in Evolving Health Care Environment**

This course guides students in explorations of leadership in evolving health care environments. Students complete an assessment and analysis of their leadership style. Leadership trends, styles, and competencies are applied to specific leadership scenarios and challenges. In addition, students develop a leadership e-portfolio including a vision statement, goals, and specific strategies for attaining these goals. Prerequisite: NSG 521 Organizational & Systems Leadership (for BSN-DNP APRN students only) Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 602 Health Care Economics, Policy, Finance**

This course will examine current trends in healthcare policy and economics and their impact on financing and care delivery in the US. Using informatics as a tool, costs associated with specific health care delivery systems will be analyzed at the organizational level. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 604A DNP Project Planning I**

This course is the first of three consecutive one hour seminars. Each seminar focuses on a specific aspect of planning for implementation and evaluation related to a significant project that impacts at least one of the Institute of Medicine's six aims: health care safety, effectiveness, patient-centeredness, timeliness, efficiency, or equity. The focus of this course is on the project problem statement, review of related literature, and application of a planning model. Students are guided by their DNP project in the development of their project/capstone proposal and in the integration of core content obtained throughout the DNP program. Upon completion of this series of seminars, the student will have developed and received the required approvals on a project proposal and submitted necessary Institutional Review Board requirements. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**NSG - 604B DNP Project Planning II**

This course is the second of three consecutive one hour seminars. Each seminar focuses on a specific aspect of planning for implementation and evaluation related to a significant project that impacts at least one of the Institute of Medicine's six aims: health care safety, effectiveness, patient-centeredness, timeliness, efficiency, or equity. The focus of this course is on the project evaluation and resource needs. Students are guided by their DNP project adviser in the development of their project/capstone proposal and in the integration of core content obtained throughout the DNP program. Upon completion of this series of seminars, the student will have developed and received the required approvals on a project proposal and submitted necessary Institutional Review Board requirements. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**NSG - 604C DNP Project Planning III**

This course is the third of three consecutive one hour seminars. Each seminar focuses on a specific aspect of planning for implementation and evaluation related to a significant project that impacts at least one of the Institute of

Medicine's six aims: health care safety, effectiveness, patient-centeredness, timeliness, efficiency, or equity. Students are guided by their DNP project in the development of their project/capstone proposal and in the integration of core content obtained throughout the DNP program. Upon completion of this course, the student will have developed and received the required approvals on a project proposal and submitted necessary Institutional Review Board requirements. Prerequisite or corequisite: DNP Project Planning II Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**NSG - 604D DNP Project Planning II & III**

The seminar focuses on specific aspects of planning for implementation & evaluation related to a significant project that impacts at least one of the Institute of Medicine's six aims: health care safety, effectiveness, patient-centeredness, timeliness, efficiency, or equity. Students are guided by their DNP project adviser in the development of their project proposal and in the integration of core content obtained throughout the DNP program. Upon completion of this course, the students will understand project evaluation and resource needs and will have developed and received the required approvals on a project proposal and submitted necessary Institutional Review Board requirements. PF grade Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**NSG - 605 DNP Project**

The DNP Project provides students with a faculty guided experience in the application of advanced clinical practice and systems level knowledge and skill in a practice setting. The project represents a synthesis of knowledge gained in all previous coursework and involves development, implementation, and evaluation of a process for change in health care delivery for individuals, groups, or populations. The project should be of such a nature that it serves as a foundation for future scholarship. The student's chosen program of study will inform the scope and complexity of practice change for the project. This course is taken during the term students intend to do their public presentation. Dependent on program. P/N grading. (2) Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**NSG - 606 DNP Specialty Practicum**

Practica are planned jointly by the student and faculty member. The minimum number of hours of practica may be determined by the specialty specific credentialing body and DNP requirements and may vary across specialty programs. Clinical conference is included. Dependent on program. P/N

grading. (Variable) Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-12

**NSG - 607 DNP Immersion Residency**

This course is designed to provide advanced nursing practice students with an opportunity to achieve specialty competence at the DNP level. The experience is accomplished under the guidance of an approved preceptor/facilitator. The minimum number of clock hours of residency may be determined by the specialty specific credentialing body and DNP requirements and may vary across specialty programs. Dependent on program. P/N grading. (Variable) Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-14

**NSG - 608 Program Evaluation**

This course provides students with the information and tools needed to strategically evaluate change initiatives and outcomes in practice and health care environments. Prerequisites: NSG-522 and NSG-523. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 609A DNP Project Practicum A**

This course is the first of a series of three DNP project practicum courses focused on providing students with experience in the application of advanced nursing practice and systems level knowledge in a healthcare setting. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**NSG - 609B DNP Project Practicum B**

This course is the second in a series of three DNP project practicum courses focused on providing students with experience in the application of advanced nursing practice and systems level knowledge in a healthcare setting. Prerequisite: NSG-609A. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**NSG - 609C DNP Project Practicum C**

This course is the final in a series of three DNP project practicum courses focused on providing students with experience in the application of advanced nursing practice and systems level knowledge in a healthcare setting. Prerequisite: NSG-609B. (1) Prerequisite: NSG-609B. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**NSG - 610 DNP Project Planning and Implementation**

This course examines implementation science theories, models and frameworks intended to improve health care quality. Complex factors that influence an effective and sustainable implementation initiative will be analyzed through critique of research in the field. This course provides students with the information and tools required to plan a strategy that evaluates and/or improves quality and patient safety in complex healthcare environments. Prerequisites: NSG-521, NSG-522, NSG-523, and NSG-602 (for BSN-DNP students); LT & P/N grading. (3) Prerequisites: NSG-521, NSG-522, NSG-523 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 611 Financial & Business Concepts**

This course will enable students to understand, apply, and communicate the concepts required for effective financial planning, decision making, and management in healthcare programs and organizations. The long-term financial impact of practice changes will be assessed at the organizational level. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 612 Appl Organiz Analysis/Mgt HR**

This course focuses on the structure and function of organizations. The elements of organizational features, culture and human talent, and the influence on outcomes are explored. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 613 Data and Decision Making for Strategic Outcomes Management**

This course focuses on acquiring and demonstrating the skills to effectively utilize data for health care decision making based on the process of outcomes management. Students will acquire and demonstrate the skills to effectively utilize data to change health care environments, to formulate an outcomes management plan, and to evaluate aspects of the outcomes management process. Prerequisite: Masters level statistics, NSG 603 Effective Project Planning, Implementation and Evaluation OR Prerequisite or corequisite: NSG 566 Population Assessment and Health Promotion Frameworks Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 614 The Leader and Policy, Politics, Power & Ethics**

This course will prepare nursing leaders to analyze and influence health policy environments. The student will learn to apply methods of policy analysis to policies of relevance

to their practice settings, and to use the results to advocate for populations and organizations/systems. The student will learn methods for evaluating policy outcomes and how to design interventions to influence policymaking and intervention implementation. Applying these skills in an organizational context will enhance the policy process, as well as help leaders to assist their organizations to respond to policy opportunities and threats. Prerequisite: Research for Evidence-Based Practice for BSN-DNP students (NSG 523); Healthcare Economics, Policy and Finance (NSG 602). Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 615 DNP Project Proposal Seminar**

This seminar focuses on the development of the DNP proposal. Students are guided by their DNP project in the development of their project proposal and in the integration of core content obtained throughout the DNP program. Upon completion of this seminar, the student will have developed and received the required approvals on a project proposal and presentation and will have submitted necessary Institutional Review Board requirements. Prerequisites: NSG-608 and NSG-610 OR NSG-566 and NSG-567. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**NSG - 616 Advanced Nurse Leadership**

In this course, the student develops advanced leadership skills as described in the American Organization of Nurse Executives Executive Nurse Competencies. Didactic modules concentrate on executive nurse role development, advanced skills in communication and relationship management, and leading interprofessional teams. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 625 Advanced Health Assessment - APRN Across Life Span**

This course is designed to enhance the advanced practice nursing student's knowledge of a history and physical examination and the diagnosis of physical findings of individuals across the life span. The course introduces the student to clinical problem solving through a series of lectures, case presentations and class discussion. This course emphasizes the importance of the careful collection of data by history and physical examination and their systematic analysis. The content of the course is organized around the health assessment of specific body systems and provides a framework of critical thinking and development of differential diagnosis.

Prerequisite: NSG-533 Corequisite: NSG-625L Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**NSG - 625L Advanced Health Assessment - A PRN: Lab**

In this course, students will develop skills needed to conduct a comprehensive history and physical examination of individuals across the life span and document the findings. The course provides a framework of critical thinking based on careful collection of history and physical findings and their systematic analysis. The course content is organized around advanced health assessment of specific body systems of individuals across the life span. Prerequisite: Licensure as an RN, successful completion of an Undergraduate Physical Assessment course, completion of Advanced Physiology and Advanced Pathophysiology; Corequisite: Health Assessment Across the Life Span. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**NSG - 675 Literature Synthesis Approach**

This doctoral-level course examines aspects pertinent to synthesizing the literature in the form of integrative and systematic literature reviews. Content emphasizes the principles of a literature review, including the review question, review protocol, search strategies, data extraction and synthesis. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 679 Evidence-Based Teaching in Health Professions**

Focus is on essential components of health profession's education including learning theories and evidence-based methods of facilitating and assessing learning. Course and curriculum design are examined, and course, program and institutional evaluation are reviewed. The tripartite faculty role is explored with an emphasis on the scholarship of teaching and the faculty member's responsibilities to professional and institutional service and leadership. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 680 Understanding Sci Paradigms**

This course will provide students with a foundation in relevant philosophies of science that have influenced knowledge development and scientific inquiry in nursing. The learner will examine how philosophies of science have influenced the development of knowledge and will analyze a concept embedded within a particular context or phenomenon of interest. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 681 Understanding Theoretical Framework Deve**

This course provides the learners with the opportunity to develop or expand a theoretical framework that will guide their Advanced Clinical Research Practicum (ACRP) and their dissertation research. Integration of the literature is emphasized. Prerequisite: Understanding Scientific Paradigms Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 683 Ethical Conduct - Research Setting**

This course provides the student with an in-depth examination of the ethical principles that guide the conduct of responsible research. These principles will be examined in the context of current, historical, and future scientific achievements. Prerequisite: Enrollment in the PhD Nursing Program or approval by course director Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 684 Intermediate Statistics**

This course develops student's knowledge of the application of database management principles and intermediate statistical principles in health care research. (3) Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 685 Multivariate Statistics**

This course develops student's knowledge of the application of multivariate statistical principles in health care research. LT Prerequisite: Graduate Statistics OR Applied Epidemiology & Biostatistics for Nursing Practice and Intermediate Statistics Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 686 The Research Process: Quantitative Design & Methods Part I**

This course promotes the development, integration, and application of the knowledge, attitudes, and skills required to function as a clinical scientist. This courses provides an overview of the research process and a brief history of clinical research within the context of current issues and trends in healthcare. The research literature serves as the foundation for examining research problems, developing problem statements, and conceptualizing research questions. Finally, theoretical and conceptual frameworks ground and enrich the research process as students explore appropriate samples and sampling designs. Prerequisite: Enrollment in the PhD Nursing Program and Applied Epidimiology & Biostatistics for Nursing Practice OR 4 hours of Graduate Statistics Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 687 Research Process: Quan Dsgn/Mth II**

This course is the second in a series of three doctoral level research courses that promote the development, integration, and application of the knowledge, attitudes, and skills required to function as an independent clinical researcher. The course will include research design, measurement, instrument development, intervention fidelity, data management, cross-cultural issues and research translation. Emphasis is on the critical appraisal of selected research designs and measurement strategies relevant to quantitative research. Prerequisite: The Research Process: Quantitative Design & Methods Part I Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 688 The Research Process: Qualitative Design & Methods**

This course will focus on the design, conduct and dissemination of qualitative research. Emphasis will be on the critical appraisal of qualitative research methodologies, data analysis, and analysis and interpretation of findings. Prerequisite: Understanding Scientific Paradigms Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 690 Grantsmanship**

This course examines grant writing and review skills. Content focuses on grant mechanisms, strategies, format, and the review process. Guidelines address writing particular NIH grant sections including specific aims and research approach, human subjects, budget, personnel, and supporting materials. Prerequisite for CON: NSG 681, NSG 687, and NSG 681; for RISM: HSC 610, HSC 611, HSC 612, and HSC 622 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NSG - 691 ACRP**

Encompasses a minimum of 8 credit hours of advanced clinical research in which the student completes and publicly defends the first two manuscripts of the three-manuscript dissertation. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-12

**NSG - 699 Dissertation Research**

The student contracts with faculty members and the Associate Dean for Academic Affairs for independent research. The doctoral candidate must be enrolled for at least three quarter hours each quarter or until the dissertation has been defended. The successful dissertation defense constitutes a submitted paper and verbal defense. Retake Counts

for Credit: Yes. Pass/No Pass Grading Allowed: No.

Credit(s): 2-4

**NSG - 900A Independent Study**

Student contracts with faculty member to complete an academic independent study in a selected area of nursing content. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 1-9

**NSG - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for Fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the College of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

**NTR - 604 Core Concepts of Health and Wellness**

This course provides students with a holistic overview of the multi-faceted dimensions of health and wellness across the life span. The seven dimensions of health: physical, social, intellectual, emotional, occupational, spiritual, and environmental are explored within the context of a wellness lifestyle. They will also learn about aligning client needs and wants with best practice program design, implementation, and evaluation for successful results. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**NTR - 605 Sports Nutrition**

This course will provide an in-depth analysis of advanced human metabolism and energy systems, including the evaluation of controversial nutrition practices that may influence metabolism and physical performance. Retake course for credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**NTR - 606 Critical Analysis Multimedia**

This course will examine multimedia sources featuring nutrition and healthcare content. It will critically evaluate the nutrition-related messages that may influence individual, behavioral, and societal beliefs about diet and health. Retake course for credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**NTR - 611 Advanced Nutrition Care I**

This course will integrate evidence-based practice and current nutrition theory in prevention and nutritional management of obesity, diabetes and cardiovascular disease. Participants will review the pathophysiology and epidemiology of disease, examine evidenced-based nutrition-related recommendations for disease prevention, evaluate the research evidence supporting various nutritional approaches for treating disease, and identify differences in disease management by race/ethnicity. Prerequisite course: NSG 533 Advanced Pathophysiology or permission of instructor. Prerequisite courses: None or permission of instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NTR - 612 Advanced Nutrition Care II**

This course will integrate evidence-based practice and current nutrition theory in prevention and nutritional management of cancer, renal disease, gastrointestinal disease, and pulmonary disease. Participants will review the pathophysiology and epidemiology of disease, examine evidenced-based nutrition-related recommendations for disease prevention, evaluate the research evidence supporting various nutritional approaches for treating disease, and identify differences in disease management by race/ethnicity. Prerequisite courses: None or permission of instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NTR - 613 Advanced Nutrition Care III**

This course will review evidence-based practice and current nutrition theory for critically ill patients in the intensive care unit (ICU). Participants will discuss alterations in energy metabolism, regulation of macronutrients during critical illness, electrolyte management, acid-base balance, influence of underlying chronic disease on the acute phase response, and examine evidenced-based nutrition-related recommendations for the use of enteral and parenteral nutrition in ICU-related illnesses. Prerequisite courses: NTR 612 Advanced Nutrition Care II or permission of instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**NTR - 613L Advanced Nutrition Care III Lab**

This course will integrate the clinical components of evidence-based practice and current nutrition theory for critically ill patients in the intensive care unit (ICU). Participants will demonstrate nutrition support management of altered

energy and macronutrient metabolism and monitor electrolyte and acid-base balance. Evidenced-based nutrition-related recommendations will be examined for the use of enteral and parenteral nutrition in ICU-related illnesses. Co-enroll in NTR 613 for MS degree students. Prerequisite courses: None or permission of instructor. Prerequisite courses: None or permission of instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**NTR - 615 Community Nutrition: A Policy Perspective**

This course will explore the importance of community nutrition programs on the overall health and well-being of diverse populations. It will detail the necessary steps to planning, implementing, and evaluating community nutrition programs, as well as discuss the policy implications of community-based nutrition programming and research. Retake course for credit: No. Pass/no pass grading allowed: No. Credit(s): 3

**NTR - 621 Regulation of Macronutrients and Energy Metabolism in Human Nutrition**

This course will integrate biochemical and molecular nutrition, emphasizing regulation of dietary carbohydrate, lipid, and protein metabolism and their relation to health. Regulation of energy metabolism as it relates to energy and nutrient intake will be discussed. Recent research and evidence-based nutrition recommendations will be incorporated. Prerequisite courses: none or permission of instructor. Prerequisite courses: None or permission of instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**NTR - 622 Micronutrient, Phytochemicals and Dietary Supplements in Nutrition**

This advanced course in human nutrition will explore the role of micronutrients, phytochemicals, dietary supplements in metabolism and health maintenance. Differences in these processes across the life span and research to support this will be discussed in the context of the Dietary Reference Intakes. Prerequisite courses: None or permission of instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**NTR - 623 Maternal and Infant Nutrition**

This advanced course will explore the relation among nutrition, growth, development and health issues/concerns such as maternal obesity and feeding/eating disorders of infants from birth to 24 months, with an emphasis on critical time periods. Pregnancy and lactation periods will be



included as well as the vital role of families and agencies in nutritional care. Evidence based research to support these issues will be studied. Prerequisite courses: none or permission of instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **NTR - 641 Leadership and Management in Dietetics**

This advanced course in leadership will explore theories of leadership with the focus on practices and principles related to developing leadership behaviors and competencies. Advanced practices and principles related to management of food and nutrition services in healthcare operations will be explored. Prerequisite courses: none or permission of instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NTR - 650 Supervised Experience in Food Systems Management I**

Students function as members of the management team in the foodservice units of the medical center. Through increasingly complex learning experiences, students are expected to develop competence as an entry-level practitioner in food systems management. Enrollment is limited to Clinical Nutrition MS/DI students. Prerequisite: None or permission of instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **NTR - 651 Supervised Experience in Clinical Nutrition I**

Students will provide nutrition assessment, diagnosis, intervention, monitoring and evaluation to individuals of varying ages, backgrounds and cultures across the continuum of care. Students will function as members of the health care team with increasingly complex learning experiences and clinical responsibilities. Students will also provide nutrition care and education to individuals. Enrollment is limited to Clinical Nutrition MS/DI students. Prerequisite: None or instructor permission. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **NTR - 652 Supervised Experience in Clinical Nutrition II**

Students will provide nutrition assessment, diagnosis, intervention, monitoring and evaluation to individuals of varying ages, backgrounds and cultures across the continuum of care. Students will function as members of the health care team with increasingly complex learning experiences and clinical responsibilities. Students will also provide nutrition care and education to individuals. Enrollment is limited to

Clinical Nutrition MS/DI students. Prerequisite: None or permission of instructor. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **NTR - 653 Supervised Experience in Clinical Nutrition III**

Students will provide nutrition assessment, diagnosis, intervention, monitoring and evaluation to individuals of varying ages, backgrounds and cultures across the continuum of care. Students will function as members of the health care team with increasingly complex learning experiences and clinical responsibilities. Students will also provide nutrition care and education to individuals and groups. Enrollment is limited to Clinical Nutrition MS/DI students. Prerequisite courses: None or permission of instructor. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **NTR - 654 Supervised Experience in Clinical Nutrition IV**

Students will provide nutrition assessment, diagnosis, intervention, monitoring and evaluation to individuals of varying ages, backgrounds and cultures across the continuum of care. Students will function as members of the health care team with increasingly complex learning experiences and clinical responsibilities. Students will also provide nutrition care and education to individuals and groups in the community. Enrollment is limited to Clinical Nutrition MS/DI students. Prerequisite courses: None or permission of instructor. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **NTR - 655 Management Project**

The course will focus on advanced practices and principles related to management of food and nutrition services in health care operations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NTR - 682 Research Methods Application and Special Topics in Clinical Nutrition**

This course is a supplement to the research methods CHS 610 course. The focus is on applying the concepts introduced in CHS 610 to assist in the development of a mini research proposal. Special topics not covered in CHS 610 will also be introduced. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **NTR - 691 Nutrition Epidemiology**

The course will develop students' ability to apply epidemiological concepts that guide evidence-based nutrition policy including the Dietary Guidelines for Americans and

other federal programs developed in dynamic health care environments. Students will use public use data sources, SPSS software and published literature to address nutrition health concerns of population groups. Prerequisites: CHS 501 Introduction to Biostatistics, CHS 502 Research Methods or permission of instructor. Prerequisite courses: CHS 501 Introduction to Biostatistics, CHS 502 Research Methods or permission of instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **NTR - 692 Seminar in Clinical Nutrition**

In this course, students will examine the evidence about a key nutrition topic that is controversial or novel that has been identified by the course instructor, critically analyze the literature and summarize the evidence for faculty and fellow students in an oral presentation. Finally the student will be able to identify how to apply this new content in clinical practice. Prerequisite courses: none or permission of instructor. Prerequisite courses: None or permission of instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **NTR - 695 Journal Club in Clinical Nutrition**

Students will present a key nutrition article identified by the course instructor or suggested by another faculty. The goal will be to critically analyze the findings presented, discuss the strength of the design, the weaknesses, summarizing the take-away points for faculty and fellow students in an oral presentation. Finally, the student will be able to describe whether such content may be applied to clinical practice. Retake course for credit: No. Pass/No pass grading allowed: No. Credit(s): 1

#### **NTR - 696 Master's Research Project**

Under faculty supervision, student prepares and presents a Master's research project. The student will select and analyze a specific clinical or research question. Completion of the project includes a professionally written paper and a presentation. Retake course for credit: Yes. Pass/no pass grading allowed: No. Credit(s): 1-3

#### **NTR - 698 Thesis**

Under faculty supervision, student prepares and presents a research thesis. Emphasis is on a review of current research literature and appropriate research design and methods in support of research objectives. Prerequisite courses: None or permission of instructor. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-6

#### **NTR - 900 Independent Study**

This course will provide students the opportunity to perform independent work on a project under faculty supervision. The project may involve nutrition-related data collection, entry, and analysis or preparation of a paper or presentation. Nutrition topics may include, but not be limited to, metabolism, medical nutrition therapy, community nutrition, or food service management. Prerequisite courses: none or permission of instructor. Prerequisite: Instructor approval. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-3

#### **NTR - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for Fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the College of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **OBG - EXM Obstetrics/Gynecology Exam Remediation**

Remediation of course examination. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 6

#### **OBG - REM Obstetrics/Gynecology Clinical Remediation**

Remediation of clinical weeks. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 6

#### **OBG - 7EI Obstetrics/Gynecology Individualized Elective**

Students may receive credit for an individually arranged elective with a Rush faculty member. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter stating the student's activities, responsibilities, amount of supervision, and specific dates of the rotation. The sponsoring faculty member must complete an evaluation of the student's performance at the conclusion of the elective. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the Assistant Dean of Clinical Education before beginning the rotation. Students may receive four weeks of credit for an individually arranged elective. Credit for a maximum of only one individually arranged elective

will count toward graduation requirements. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **OBG - 703 Core Clerkship: Obstetrics & Gynecology**

This course is designed to familiarize the student with the female reproductive tract. Emphasis is placed on routine obstetrics and gynecologic health care maintenance and patient education. Identification and management of high-risk pregnancy, infertility and other endocrinopathies, gynecologic oncology, family planning psychosomatic disorders, and normal physiological changes in obstetrics and gynecology as well as gynecologic surgery are some of the areas covered in detail. Required Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 6

#### **OBG - 731 Maternal-Fetal/High Risk**

Emphasis of this course is on the identification and management of high risk pregnancy. Ultrasonography, amniocentesis, medical and surgical complications of pregnancy, and operative obstetrics are some of the specific topics dealt with in detail. Students participate in ante-partum management of hospitalized and ambulatory pregnant patients with high risk conditions. Additional exposure to intra-partum problems is obtained through daily clinical teaching rounds and through follow-up of high-risk ante-partum patients as they go through labor and delivery. Special experiences and involvement in genetic counseling, prenatal diagnosis and obstetric ultrasound are also available. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **OBG - 741 Family Planning**

Elective in Family Planning elective is designed to provide students opportunity to gain expertise in taking sexual and reproductive health histories, pregnancy options counseling, management for pregnancy loss, and complex contraception counseling for patients with medical co-morbidities. Students will explore the complexity of family-planning decision making, counseling, and procedures for abortion and miscarriage management, along with health policies impacting family planning care in the U.S. and abroad. Students have a choice of taking this elective for two or four weeks. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **OBG - 751 Female Pelvic Medicine and Reconstructive Surgery**

The Female Pelvic Medicine and Reconstructive Surgery (FPMRS) elective is subspecialty elective that is designed to provide fourth year students pursuing an interest in OBY/GYN, the opportunity to enhance their knowledge base, skills, and attitudes and criterion to be potential applicant, and broaden their perspective in Female Pelvic Medicine and Reconstructive Surgery (FPMRS). Students will have the opportunity to recognize pathologic processes of the pelvic floor through history and physical exam; determine appropriate therapy based on performance of diagnostic testing, Urodynamics, clinical judgment and literature evidence; assist with appropriate minimally invasive and invasive surgical procedures and provide care until discharge; compare risk and benefits of surgical versus medical conservative management and understand the risks benefits and alternatives; and demonstrate use of the electronic medical record and web-based resources. Students have a choice of taking this elective for two or four weeks. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **OBG - 761 Gynecologic Oncology**

The purpose of this advanced course is to expose the student directly to medical, surgical, and research aspects of gynecological cancer care, beyond the scope of what is achieved during short-term required rotations. The student functions as a partner in a team of attendings, residents and nurses. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **OBG - 767 Reproductive Endocrinology & Infertility**

This course provides clinical experience in diagnostic evaluation and therapeutic management of couples with infertility and women with gynecologic endocrine problems. The students participate in routine diagnostic studies such as ovulation timing, postcoital tests, endocrine evaluation, etc., and are introduced to the use of diagnostic and therapeutic procedures such as hysterosalpingography, ultrasonography, laparoscopy, hydrotubation, etc. The students scrub on surgical reconstructive procedures involving female reproductive system and participate in the activities of the in-vitro fertilization program. Laboratory experience in performing hormone radioimmunoassay, sperm separation, and other procedures may also be included. Elective Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **OBG - 781 Research in Obstetrics/Gynecology**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout the academic year. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the Director of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of eight weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Clinical Curriculum. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-8

#### **OCC - 501 Human Structure and Principles of Movement**

The primary goal of this course is to understand and evaluate the musculoskeletal system related to the performance skills of occupational performance. Biomechanical principles are presented with application of treatment to occupational performance impairment. The student will learn and demonstrate the ability to administer evaluations of posture, joint motion, muscle strength and body mechanics in selected activities. Corequisite: OCC-501L Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **OCC - 501L Functional Anatomy W/Lab**

The primary goal of this course is to understand and evaluate the musculoskeletal system related to the skill components of occupational behavior. The gross anatomical structures of are presented with application of the assessment and treatment of occupational performance dysfunction. The student will learn through lecture and prosected laboratory specimens the gross structures of the human body, with an emphasis on the structures vital for functional performance. The cardiorespiratory, gastrointestinal, genitourinary, musculoskeletal, and head/neck systems will be covered; a large content focus is on the musculoskeletal system with emphasis on the upper extremities and upper trunk. Corequisite: OCC-501 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **OCC - 502 OT History and Philosophy**

Overview of the historical foundations of occupational therapy as they relate to the frames of reference and philosophical perspectives upon which the field is based. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **OCC - 503 Foundational Theories in Occupational Therapy**

This course focuses on the prevalent theories of occupational therapy and the impact of theory on clinical practice. It introduces students to the difference between models of practice and frames of reference and how theory can be used to guide professional reasoning across the life span. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **OCC - 504 Human Structure and Principles of Movement**

The primary goal of this course is to understand and evaluate the musculoskeletal system related to the performance skills of occupational performance. Biomechanical principles are presented with application of treatment to occupational performance impairment. The student will learn and demonstrate the ability to administer evaluations of posture, joint motion, muscle strength and body mechanics in selected activities. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **OCC - 504L Functional Anatomy W/Lab**

The primary goal of this course is to understand and evaluate the musculoskeletal system related to the skill components of occupational behavior. The gross anatomical structures of are presented with application of the assessment and treatment of occupational performance dysfunction. The student will learn through lecture and prosected laboratory specimens the gross structures of the human body, with an emphasis on the structures vital for functional performance. The cardiorespiratory, gastrointestinal, genitourinary, musculoskeletal, and head/neck systems will be covered; a large content focus is on the musculoskeletal system with emphasis on the upper extremities and upper trunk. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **OCC - 505 Clinical Foundations Skills**

The primary goal is for students to acquire basic clinical reasoning and practice skills as a foundation for their clinical placements and preceptorship at Rush University Medical Center and in the community. Pass/no pass grading only. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**OCC - 506 Medical Conditions Seminar**

Selected medical, surgical, neurological and orthopedic conditions with emphasis on their etiology, treatment and prognosis will be explored through presentations and discussions. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**OCC - 507 Psychosocial Dysfunction**

This course focuses on the functional abilities that are compromised by mental disorders and the side effects of pharmacotherapy. Interdisciplinary and occupational therapy interventions of mental disorders and chemical dependency are reviewed from the rehabilitation and occupational performance perspectives. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**OCC - 508 Group Dynamics**

Didactic and experiential activities designed to familiarize the student with basic principles underlying group process and group behavior and clinical application of these principles in occupational therapy are studied. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**OCC - 509 Analysis of Occupational Performance**

Focus will be on the development of task analysis skills by applying logical thinking, critical analysis, problem solving and creativity. Students will demonstrate an ability to grade and adapt occupation-based tasks and purposeful activity including the interaction of performance areas, components, and contexts through dynamic classroom exercises. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**OCC - 510 OT Perspectives in Ethics and Multiculturalism**

This course will focus on understanding the many dimensions of multiculturalism so that the students may develop a basis from which to be sensitive to the uniqueness of individuals and increase awareness of cultural diversity. Various perspectives with regards to the cultural beliefs about health, illness, and treatment and how these beliefs direct the formation of policy will also be explored. The cultural aspects of occupation will be discussed as well as the Cultural Competence Continuum. This course is also a supplement to the CHS interprofessional Ethics in Health Care course. It will cover the AOTA Code of ethics and its application to current practice. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**OCC - 511 OT Interventions I**

Students learn to apply theories and conceptual models for restoration of occupational performance based on psychosocial principles. The occupational therapy planning and implementation process is introduced and developed through concurrent interface with the pre-clinical experience. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 5

**OCC - 512 OT Interventions II**

Students learn to apply theories and conceptual models for the restoration of occupational performance based on biomechanical and rehabilitative principles. Laboratory component includes splinting, wheelchair/positioning experiences and skill building in interventions and documentation. This course interfaces with the pre-clinical experience. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 5

**OCC - 513 OT Interventions III**

Students learn to apply theories and conceptual models for the restoration of occupational performance based on motor learning, cognitive-perceptual and rehabilitation models of practice. Student will become familiar with basic splinting principles and demonstrate skill in constructing static splints. The occupational therapy planning and implementation process is introduced and developed through concurrent interface with the pre-clinical experience. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 5

**OCC - 514 OT Interventions IV**

Students learn to apply theories and conceptual models for the prevention, development, remediation and restoration of occupational performance as it relates to various pediatric populations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**OCC - 515 OT Interventions I**

Students learn to apply theories and conceptual models for restoration of occupational performance based on psychosocial principles. The occupational therapy planning and implementation process is introduced and developed through concurrent interface with the pre-clinical experience. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**OCC - 516 OT Interventions I Fieldwork**

This course will offer lecture and practical application opportunities to facilitate the development of professional behaviors required for successful fieldwork experiences. A supervised Level I fieldwork experience related to the theory and application of occupational therapy in the areas of physical disabilities, pediatrics and psychosocial practice will also be completed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**OCC - 517 OT Interventions II Fieldwork**

This course will provide didactic and lab training of the use of physical agent modalities. In addition, this course focuses on development of professional behaviors to prepare students for fieldwork experiences. A supervised two-week field experience related to the theory and application of occupational therapy in the areas of physical disabilities, pediatrics and psychosocial practice will also be a component of this course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**OCC - 518 OT Interventions III Fieldwork**

This course will provide didactic and lab training of the use of physical agent modalities and review of clinical skills necessary for successful completion of Fieldwork experiences. In addition, this course focuses on development of professional behaviors to prepare students for fieldwork experiences. A supervised two-week field experience related to the theory and application of occupational therapy in the areas of physical disabilities, pediatrics and psychosocial practice will also be a component of the course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**OCC - 519 OT Interventions II**

Students learn to apply theories and conceptual models for the restoration of occupational performance based on biomechanical and rehabilitative principles. Laboratory component includes splinting, wheelchair/positioning experiences and skill building in interventions and documentation. This course interfaces with the pre-clinical experience. Prerequisite: OCC-515 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**OCC - 520 Health Conditions**

Selected medical, surgical, and psychiatric conditions with emphasis on their etiology, prognosis, medical and pharmacological management will be explored through lecture, presentation and discussion. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**OCC - 521 OT Interventions III**

Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**OCC - 522 OT Interventions IV**

Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**OCC - 525 Intro to Neuroscience**

Lecture-discussion formats cover the anatomy, functions, and the selected lesion of the central and peripheral nervous systems. The student will learn the basic principles of organization, structure and function within the human nervous system and correlate specific clinical signs and symptoms to lesions within the central and peripheral nervous systems. Examples of application to medical care and occupational therapy are included in selected assessment and treatment descriptions. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**OCC - 526 OT Interventions III Fieldwork**

Prerequisite: OCC-517 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**OCC - 530 OT Persp in Health & Wellness**

This course provides students with a holistic overview of the multi-faceted dimensions of health and wellness across the life span. The six dimensions of health are explored within the context of occupational therapy. Students will also examine the influence of chronic disease on health, wellness, and occupational performance. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**OCC - 532 OT Perspectives in Technology**

Exposure to assistive technology with emphasis on assessment, selection, characteristics, and application. Emphasis will be on low technology and high technology devices and systems to include wheelchairs, seating systems, switches, computer units, and the indications for use in the role of human performance. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**OCC - 536 Issues and Perspectives in Pediatric OT**

Issues and perspectives, which are unique to the pediatric population are explored in this course. The course begins with foundational topics of occupational performance as it relates to various pediatric populations. To provide the students with clinical reasoning tools used in the occupational therapy process with children and their families, exploration of various

frames of reference is then completed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **OCC - 537 Issues and Perspectives in Geriatric OT**

Focuses on an understanding of the occupational therapist's role in working with the geriatric population including service delivery systems, normal and pathological changes occurring as one ages and specific interventions utilized by practitioners. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **OCC - 538 Evaluation & Assessments**

Administration, scoring, interpretation, and reporting of selected tests and informal assessments useful in an occupational therapy evaluation of clients of varying ages and disability will be examined in this course. Students will critically assess the merits of various instruments based upon the essential components of credibility, and will recognize the strengths and limitations of the instruments reviewed. Focus on the clinical reasoning used in the evaluation and re-evaluation process [i.e. selection of assessments, interpretation and application of results] will be explored and implemented. Ethical considerations required in evaluation process will also be addressed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **OCC - 543 Health Care Organizations**

This course reviews and identifies the factors, forces, and dynamics of the environment in which health care services are provided. The interrelationships of health care institutions in the future and their impact on occupational therapy will be discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **OCC - 544 Management Concepts for OT**

Students will examine administrative activities related to the effective delivery of OT services, including program planning, organization, control and leadership. Personnel management, communication and effective use of professional and non-professional staff, fiscal accountability, quality management, marketing/promotions, and resource allocation will be presented. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **OCC - 576 Sociocultural Aspects of Care**

This course introduces students to the cultural issues that impact practice. Culture is multi-faceted and will be explored through a variety of viewpoints and applied to a variety of practice settings. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **OCC - 579 Research Methods**

This course provides the foundation for participation in clinical research and the importance of evidence based practice in occupational therapy. Emphasis will be on quantitative research design, data analysis strategies, and the incorporation of evidence based practice to clinical practice. This course will serve as a basis for research projects with assigned research faculty. Prerequisites: CHS 501. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **OCC - 581 Qualitative Rsch Method/Design**

This course provides the students with an opportunity to explore and experience how both mixed methods and qualitative research methodologies are used in clinical and management outcome research. Emphasis will be on design, data collection, analysis and interpretation, as well as, communication and presentation of findings. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **OCC - 582 Research Methods & Evidence-Based Practice**

This course provides the foundation for participation in clinical research and the importance of evidence based practice in occupational therapy. Emphasis will be on quantitative research design, data analysis strategies, and the incorporation of evidence based practice to clinical practice. This course will serve as a basis for research projects with assigned research faculty. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **OCC - 583 Graduate Research Project**

The three Graduate Research Project courses (OCC 583-1, OCC 583-2, OCC 583-3) are the culmination of the research sequence in the occupational therapy curriculum. It provides students with the opportunity to explore and experience clinical research and the outcomes during development of a master's project. Emphasis will be on strategies related to data collection, analysis, interpretation and data presentation. Small groups of students participate in weekly faculty-student seminars to explore the literature; create and conduct a research project leading to dissemination of the work which will be a final paper and presentation. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **OCC - 584 Graduate Research Project I**

The three Graduate Research Project courses (OCC- 584, OCC-585, OCC-586) are the culmination of the research sequence in the occupational therapy curriculum. It provides students with the opportunity to explore and experience

clinical research and the outcomes during development of a master's project. Emphasis will be on strategies related to data collection, analysis, interpretation and data presentation. Small groups of students participate in weekly faculty-student seminars to explore the literature; create and conduct a research project leading to dissemination of the week which will be a final paper and presentation. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **OCC - 585 Graduate Research Project II**

The three Graduate Research Project courses (OCC- 584, OCC-585, OCC-586) are the culmination of the research sequence in the occupational therapy curriculum. It provides students with the opportunity to explore and experience clinical research and the outcomes during development of a master's project. Emphasis will be on strategies related to data collection, analysis, interpretation and data presentation. Small groups of students participate in weekly faculty-student seminars to explore the literature; create and conduct a research project leading to dissemination of the week which will be a final paper and presentation. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **OCC - 593 Advanced Fieldwork I**

Supervised field experiences applying theoretical O.T. concepts on subjects having psychosocial/physical dysfunctions. Full-time student status is continued while engaged in fieldwork. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 8

#### **OCC - 594 Advanced Fieldwork II**

Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 8

#### **OCC - 595 Advanced Fieldwork I**

Supervised field experiences applying theoretical O.T. concepts on subjects having psychosocial/physical dysfunctions. Full-time student status is continued while engaged in fieldwork. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 8

#### **OCC - 596 Advanced Fieldwork II**

Supervised field experiences applying theoretical O.T. concepts on subjects having psychosocial/physical dysfunctions. Full-time student status is continued while engaged in fieldwork. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 12

#### **OCC - 600 Introduction to Occupation, Health and Wellness**

Overview of the historical foundations of occupational therapy as they relate to general Occupational Therapy practice and the philosophical perspectives upon which the profession is based. This course also provides students with a holistic overview of the multi-faceted dimensions of health and wellness across the life span. Six dimensions of health are explored within the context of occupational therapy. The influence of chronic disease on health, wellness, and occupational performance will be explored. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **OCC - 607 Psychosocial Aspects of Care**

This course introduces students to mental health theory and how it applies to the occupational therapy process in a variety of practice settings. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **OCC - 608 Introduction to Clinical Practice**

This course is designed to provide the occupational therapy student with a foundation of technical and interpersonal clinical practice skills. The primary goal of the skills presented and practiced in the course is for the students to have exposure, experience, and acquire basic clinical assessment, intervention and clinical reasoning skills as a foundation for productive clinical placements and preceptorships at RUMC and in the community. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **OCC - 609 Occupational Performance and Ability**

Focus will be on the development of task analysis skills by applying logical thinking, critical analysis, problem solving and creativity. Students will demonstrate ability to grade and adapt occupation-based tasks and purposeful activity including the interaction of performance areas, components and contexts through dynamic classroom exercises. In addition, a four week practicum experience within the Rush University Medical Center will allow students the opportunity to apply skills learned in the classroom in a clinical setting. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **OCC - 610 Occupational Therapy Process**

This course will introduce students to the fundamentals of the occupational therapy process including evaluation, documentation, and therapeutic relationships. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**OCC - 612 Physical Disabilities I**

Application of theories and conceptual models for restoration of occupational performance based on biomechanical and rehabilitative principles are presented. The occupational therapy planning, evaluation, and intervention process is introduced and instruction methods include application and synthesis of covered topics. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**OCC - 613 Physical Disabilities II**

Application of theories and conceptual models for restoration of occupational performance based on motor learning, cognitive-perceptual and rehabilitation models of practice. The occupational therapy planning, evaluation, and intervention process is introduced and instruction methods include application and synthesis of covered topics. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**OCC - 614 Mental Health Practice**

Students learn to apply theories and conceptual models for restoration of occupational performance based on psychosocial principles for individuals, groups, and populations. Didactic and experiential learning activities will engage the student in the occupational therapy evaluation, intervention planning and intervention delivery processes. Students will also apply the principles of group dynamics to a six-week group leadership experience. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**OCC - 615 Developmental Disabilities I**

This course begins with fundamental topics of occupational performance as it relates to human and occupational development, with an emphasis on pediatric developmental. The students will be introduced to clinical reasoning within the context of the occupational therapy process with children and their families. Exposure to various assessment tools will facilitate foundational knowledge needed for occupational therapy evaluations related to development throughout the life cycle. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**OCC - 616 Developmental Disabilities II**

Interventions, which are unique to facilitating human and occupational development, are explored in this course. Students learn to apply practice models and frames of references for the prevention, development, remediation, and restoration of occupational performance as it relates to various developmental disorders. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**OCC - 617 Clinical Practice Skills/Fieldwork 1-A**

This course focuses on development of professional behaviors to prepare students for fieldwork experiences. This course also provides didactic and lab training in the use of physical agent modalities. The course culminates with a supervised two-week field experience related to the theory and application of occupational therapy in the areas of biomechanical, rehabilitation, and psychosocial principles. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**OCC - 618 Clinical Practice Skills/Fieldwork 1-B**

This course will provide didactic and lab training for select clinical skills necessary for successful completion of fieldwork experiences. In addition, this course continues to focus on development of professional behaviors to prepare students for fieldwork experiences. The course culminates with a supervised two-week field experience related to the theory and application of occupational therapy in the areas of biomechanical, rehabilitation, and psychosocial principles. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**OCC - 620 Foundational Theories in OT**

This course focuses on the prevalent theories of occupational therapy and the impact of theory on clinical practice. It introduces students to the difference between models of practice and frames of reference and how theory can be used to guide professional reasoning across the life span. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**OCC - 625 Functional Neuroscience & Cognition**

This course consists of lecture and lab content covering the anatomy, functions and selected dysfunctions of the central and peripheral nervous systems. The student will learn the basic principles of organization, structure, and function within the human nervous system and correlate specific clinical signs and symptoms to lesions within the central and peripheral nervous system. Instruction on clinical measures, including evaluation and assessment tools specific to the neurological tracts will be included, with this material being applied through interactive labs. (1.5 sh lecture; 1.5 sh lab) Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**OCC - 630 Program Development**

This course will introduce students to community-based practice and the program development process. Students will increase their awareness for opportunities to recommend

changes to existing services and/or develop proposals for new services in traditional and emerging practice areas. Students will also explore alternative funding strategies, such as grant writing to fund new or developing programs. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**OCC - 643 Health Care Systems**

This course reviews and identifies the factors, forces, and dynamics of the environment in which health care services are provided. The interrelationships of health care institutions in the future and their impact on occupational therapy will be discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**OCC - 644 Leadership and Advocacy**

This course presents the foundations of leadership development with an emphasis on effective management of the delivery of Occupational Therapy services, personnel management, fiscal management, and resource allocation. Institutional, community, and political advocacy as it relates to occupational therapy are also presented. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**OCC - 683 Evidence-Base Practice Series I**

The Evidence-Based Practice Series is comprised of three courses (OCC 683, OCC 684, and OCC 685) and is the culmination of the research sequence in the occupational therapy curriculum. It provides students with the opportunity to explore and experience clinical research and the outcomes during development of a graduate research project. Small groups of students participate in weekly faculty-student seminars to explore the literature, create and conduct a research project leading to dissemination of the work, which will be a final paper and presentation. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**OCC - 684 Evidence-Base Practice Series II**

This course is a continuation of OCC 683. Students will continue to work with their small groups to implement their research projects. Emphasis will be on strategies related to data collection and implementation of their project. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**OCC - 685 Evidence-Base Practice Series III**

This is the final course in the Evidenced-Based Practice Series. Emphasis in this course will be on strategies related to data analysis, interpretation and dissemination of findings. The culmination of this series will be completion of a

scholarly paper and presentation. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**OCC - 795 Advanced Fieldwork I**

This course offers supervised field experiences applying theoretical Occupational Therapy concepts on persons with psychosocial and/or physical dysfunctions. Full-time student status is continued while engaged in fieldwork. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 9

**OCC - 797 Advanced Fieldwork II**

This course offers supervised field experiences applying theoretical Occupational Therapy concepts on persons with psychosocial and/or physical dysfunctions. Full-time student status is continued while engaged in fieldwork. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 9

**OCC - 810 Professional Reasoning and Doctoral Experience I**

This is the first module in the Professional Reasoning and Doctoral Experience series, which culminates in the Individualized Doctoral Experience. Emphasis will be placed on development of professional reasoning. Students will begin planning their individualized doctoral experience by identifying interests and opportunities that match their strengths. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**OCC - 811 Professional Reasoning and Doctoral Experience II**

This is the second module of the Professional Reasoning and Doctoral Experience Series, which culminates in the Individualized Doctoral Experience. Emphasis will be placed on development of professional reasoning. Students will continue planning their individualized doctoral experience. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**OCC - 812 Professional Reasoning and Doctoral Experience III**

This is the final module of the Professional Reasoning and Doctoral Experience Series, which culminates in the Individualized Doctoral Experience. Emphasis is placed on the ongoing development of professional reasoning. Students will complete their plan for the Individualized Doctoral Experience and capstone dissemination. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**OCC - 820 Capstone Competencies**

Students will complete competency requirements which will include a comprehensive examination. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**OCC - 825 Individualized Doctoral Experiences**

This course affords students the opportunity to extend, build, and apply knowledge acquired in the curriculum and prior fieldwork experiences during a 16-week, full-time, Individualized Doctoral Experience. Students will engage in an area of practice beyond the generalist level by directing their experience toward an in-depth focus on advanced practice in traditional and emerging settings, management and leadership, academia, or research. Students direct the development of specific learning objectives with the guidance and approval of faculty. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 12

**OCC - 828 Capstone Dissemination**

Students will complete a capstone project based on the Individualized Doctoral Experience. The capstone will analyze professional development, advancing skills, and discovery of evidence in a culminating report. Students will complete the culminating report through producing papers and/or presentations based upon the objectives and outcomes developed through the Professional Reasoning and Doctoral Experience coursework. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**OCC - 900 Independent Study**

Creative project designed by the student and supervised by faculty. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-12

**OCC - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**PED - EXM Pediatrics Exam Remediation**

Remediation of course examination. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 8

**PED - REM Pediatrics Clinical Remediation**

Remediation of clinical weeks. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 8

**PED - 7EI Pediatrics Individualized Elective**

Students may receive credit for an individually arranged elective with a Rush faculty member. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter stating the student's activities, responsibilities, amount of supervision, and specific dates of the rotation. The sponsoring faculty member must complete an evaluation of the student's performance at the conclusion of the elective. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the assistant dean of Clinical Education before beginning the rotation. Students may receive four weeks of credit for an individually arranged elective. Credit for a maximum of only one individually arranged elective will count toward graduation requirements. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PED - 701 Core Clerkship: Pediatrics**

This course is designed to introduce students to the principles and practice of care of the patient from birth through adolescence, which are studied through direct patient contact. The primary objective is to provide an opportunity for students to become proficient in the clinical basis of pediatric diagnosis. The clinical facilities of both the inpatient and outpatient services of Rush University Medical Center, John H. Stroger Hospital of Cook County, and private physicians' offices are utilized. Regular conferences, lectures, and case presentations provide additional learning experiences. Students will have an eight-week assignment to pediatrics, which includes rotations in inpatient and ambulatory settings, and the nursery. Ambulatory activities constitute 50% of the clerkship. Night call is approximately every fourth night including weekends. Required Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 8

**PED - 710 Subinternship: Pediatrics**

The subintern will function in a capacity similar to an intern on one of two pediatric ward services. Senior residents and faculty physicians will provide supervision. The students are

expected to take call every fourth night. Required in M4 Year Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PED - 711 Pediatric Cardiology**

Ambulatory experience can be obtained in the care of children with congenital and acquired heart disease, as well as, assessment of innocent heart murmurs. Clinical history and physical findings are correlated with x-ray, electrocardiographic, echocardiographic, and cardiac catheterization data. Didactic sessions are offered once a week which include learning the interpretation of ECG and chest X-ray. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PED - 715 Chronic Diseases in Children**

Based at Shriner's Hospital for Crippled Children, students participate in an active inpatient and outpatient program which provides referral services to children with musculoskeletal disorders, neural tube defects and other chronic diseases. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PED - 716 Pediatric Ambulatory Care**

This course offers students the opportunity to participate in primary care pediatrics in a variety of settings. A hands-on approach with individual attending supervision is emphasized. Students follow private and clinic patients for both health maintenance and acute and chronic medical problems. Students generate their goals and learning experiences for the rotation. The course will be geared toward satisfying the student's individual needs and interests. Students must attend Pediatric Grand Rounds. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PED - 721 Pediatric Endocrinology**

This course provides students with a problem-oriented approach to pediatric endocrinology. All aspects of pediatric endocrinology are covered but particular emphasis is placed on the outpatient assessment of the normal and abnormal aspects of growth and pubertal development. The course aims to highlight the role of the primary care provider in the initial evaluation of pediatric patients with a suspected endocrine disorder and to provide the student with an introduction to specialized diagnostic endocrine testing and management of the endocrine patient. The student is expected to evaluate any inpatient consult which presents during the rotation. The student is provided up to 8 endocrine case exercises with questions for review, as well as other didactic

material, and is expected to present an endocrine topic researched from the literature for 15-20 minutes at the end of the rotation. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PED - 724 Pediatric Intensive Care**

This course exposes the student to the type of care provided to medical, subspecialty, and surgical pediatrics patients who require higher acuity of care. The student is part of a medical team comprised of residents of varying experience levels. The student is expected to perform at a sub-intern level with regard to expectations and work requirements. By the end of the rotation, the student will be expected to learn: (1) The initial evaluation and stabilization of a critically ill patient; (2) pediatric resuscitation techniques; (3) basic ventilator management; and (4) procedures such as intubation and central line placement. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PED - 726 Pediatric Nephrology**

This course will provide the student with experience in the care of children with renal problems in hospital and ambulatory settings. The emphasis is on participation in an active consulting service with concentration on normal and abnormal renal functions, electrolyte imbalances, proteinuria, hematuria, hypertension, urinary tract infections, and developmental diseases of the kidney. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PED - 732 Pediatric GI/Nutrition**

This course provides a core set of didactic materials and discussions. Emphasis is on understanding the pathophysiology of, and basic approach to, common clinical problems. The nutrition component includes fundamentals of enteral and total parenteral nutrition management. The student is expected to perform a literature review of one or more topics. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

**PED - 741 Pediatric Allergy/Immunology**

This course teaches the clinical approach to problems of allergy, other immune-mediated diseases, and immunodeficiency in both children and adults. Diagnosis and treatment of commonly encountered IgE-mediated diseases (allergic rhinitis, asthma, eczema, and urticaria), as well as connective tissue diseases and immunodeficiency syndromes are explained. Students are responsible for following medicine and pediatric inpatient consults at Rush and Stroger Hospitals and report to the attending physician-on-service

for daily rounds. Allergy/Immunology outpatient care is demonstrated at Fantus Clinic (part of the Stroger Hospital Ambulatory Care Network) as well as the Allergy/Immunology Office at Rush. Students also learn about skin testing techniques, spirometry and immunological tests performed by the Rush Medical Laboratory. Teaching (basic science or clinical lecture, journal club, research and chart review) conferences are held at Rush on Friday mornings. The attending physician-on-service and/or fellow-on-service also teach on daily rounds. A pretest and final quiz are given to measure achievement as a basis for evaluation. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **PED - 742 Pediatric Hematology/Oncology**

This course provides an introduction to the care of children with hematologic disorders and malignancies of childhood. A core lecture series is presented during the elective as well as a review of blood and marrow morphology. Students participate in the evaluation of new patients as well as established patients. Ward rounds are made daily for inpatients on the service and consultations. Outpatient clinics are held five days a week. Several multi-disciplinary conferences are held weekly. A course syllabus will be provided. Students complete the course by taking an oral and written (open-book) examination. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **PED - 746 Pediatric Infectious Disease**

This course focuses on clinical and laboratory evaluation of pediatric infections. An active inpatient consultation service provides ample opportunity for patient evaluation and follow-up. Correct use of laboratory facilities is stressed. Pathophysiology of infectious diseases, differential diagnosis, and antibiotic use are discussed on daily ward rounds and weekly conferences. Students see outpatients with diagnostic problems as well as attend specialized clinics for children with HIV infection, tuberculosis and congenital toxoplasmosis. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **PED - 751 Pediatric Neurology**

In this advanced course students will become acquainted with the broad scope of pediatric neurology with an emphasis on the basic examination of children with neurologic and developmental problems. Basic interpretation of common neurodiagnostic studies in the course of inpatient rounds and outpatient clinics will be emphasized. Students will become familiar with common diagnoses such as epilepsy,

migraine, autism, muscular dystrophy, "developmental delay," tics and attention deficit disorder. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **PED - 755 Advanced Clinical Genetics**

The Advanced Clinical Genetics elective is designed to provide fourth year medical students the opportunity to learn about the diagnostic process and management of common genetic disorders, particularly in the pediatric population. Genetics as a field has rapidly expanded in the last decade from a technological and molecular standpoint, and there are now known genetic disorders affecting nearly all areas of medicine. This course would allow students to translate what they have learned from the medical school curriculum into the clinical setting. Students have a choice of taking this elective for two or four weeks. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **PED - 772 Pediatric Respiratory Medicine**

The objective for this course is to expose medical student to all facets of clinical practice involving pediatric patients with respiratory disease. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **PED - 781 Research in Pediatrics**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation.

Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the Office of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout the academic year. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the director of Clinical Curriculum before

beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of eight weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Clinical Curriculum. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-8

#### **PED - 793 Neonatal Intensive Care**

This course is an introduction to the care of sick and premature newborn infants in the intensive care setting with emphasis on normal sequence of events in the birth-recovery period and disruptions to that sequence and adaptation of the baby during the post-partum period. Care of the most common complications occurring at this age will be emphasized. Visiting students are eligible for four-week rotations only. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **PED - 794 Adolescent and Young Adult Medicine**

This course provides direct experience in the care of hospitalized and outpatient adolescents and young adults. Hospitalized patients are seen at Rush University Medical Center. Outpatients are seen at a variety of sites, including the Pediatric Ambulatory Care Center at Rush, the Teen/Family Planning Clinic in Evergreen Park, the Joliet and Chicago Job Corps Center and the Orr High School Clinic. Retake course for credit: No. Pass/No Pass grading allowed: No. Credit(s): 4

#### **PED - 804 Adolescent & Young Adult Medicine**

This course provides experience in outpatient settings, including a hospital-based adolescent clinic, and HIV adolescent specialty clinic, the juvenile detention center, and school-based clinics. In addition, students are required to do short presentations and to participate in didactic sessions and a journal club that is adolescent-focused. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **PED - 842 Pediatric Hematology/Oncology**

This course provides an introduction to the care of children with hematologic disorders and malignancies of childhood. A core lecture series is presented during the elective as well as a review of blood and marrow morphology. Students participate in the evaluation of new patients as well as established patients. Ward rounds are made daily for inpatients on the

service and consultations. Outpatient clinics are held five days a week. Several multi-disciplinary conferences are held weekly. A course syllabus will be provided. Students complete the course by taking an oral and written (open-book) examination. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **PED - 861 Child Abuse and Neglect**

In this course students work one-on-one with the attending physicians in the Division of Child Protective Services at Stroger Hospital and actively participate in the work-up, management and follow-up care of children suspected of being maltreated. Students can expect to learn medical aspects of physical abuse, sexual abuse and neglect (including Failure to Thrive). Students also have the opportunity to observe and participate in the developmental evaluations of patients and in the psychosocial evaluations of patients and their families. Students attend and provide care in the weekly comprehensive follow-up clinic for abused and neglected children, and also attend the Medical Clinic at the Children's Advocacy Center. In addition to participating in the clinical work-up of suspected abuse/neglect, students learn about the role of the physician as advocate for the child within the Child Welfare and Legal Systems and learn about the physician's role in coordinating multidisciplinary care for high-risk patients and their families. There is required reading and students are expected to attend lectures and present cases during rounds and weekly multidisciplinary patient staffing. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **PHA - CLIN1 Clinical Curriculum Enrollment**

This course acts as place holder for billing purposes. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 16

#### **PHA - 510 Human Physiology**

This lecture-based course will present a comprehensive and advanced review of organ systems, including human physiologic function, regulation, and integration as a basis for understanding the complex interaction of specific body systems and their relationship to disease. Commonly occurring pathophysiologic processes will be introduced to prepare students for more in-depth learning about specific disease states and patient presentations in subsequent courses. Retake course for credit: No. Pass/No pass grading allowed: No. Credit(s): 2

**PHA - 511 Human Anatomy**

This course provides students with a thorough understanding of the principles of functional and applied human anatomy necessary for the practice of clinical medicine. The course is driven primarily by the laboratory (small group) sessions with lectures given to prepare students for the lab and provide supplementary information. Prerequisite: Successful completion, with a grade of C or higher, of prerequisite undergraduate courses in human anatomy and human physiology. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**PHA - 512 History & Physical Examination**

This course is designed to teach PA students the proper techniques for patient assessment. This course covers how to conduct an effective medical interview, how to document clinical findings in the medical record, and how to perform a physical exam. Both the comprehensive and problem focused medical history formats will be discussed and students will practice proper MR documentation using the SOAP note format. Students will learn how to perform a comprehensive physical examination and to recognize the normal examination findings associated with each organ system. The course will also introduce students to common pathological PE findings, and to interpret the significance of these findings to diagnosing disorders. Finally, students will learn to accurately record PE findings as part of a patient medical record. The course material will be presented sequentially in an organ-system basis. The course will present techniques to facilitate accurate and efficient data collection, to foster effective patient communication, and to develop appropriate patient centered responses to different patients in the clinical setting. Developing skills to effectively educate, counsel, and influence patient behaviors will also be discussed. Prerequisites: Successful completion, with a grade of C or higher, of prerequisite undergraduate courses in human anatomy, human physiology, and psychology or equivalent social or behavioral science. Also requires concurrent enrollment in PHA 510 and PHA 514. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**PHA - 513 PA Professionalism & Practice I**

This is the first of a three-part course series designed to introduce and familiarize students with the professional and practice issues of importance to the PA profession. PA Professionalism and Practice I is designed to introduce and familiarize the student with the major professional issues and communication skills important to a practicing PA

working on a medical team. Topics include the history and development of the PA profession, the physician-PA relationship, PA scope of practice and professional regulations, licensure, certification/recertification, PA program accreditation, and PA professional organizations. The course also covers legal issues in health care related to PA practice, including the Healthcare Information Portability and Accountability Act (HIPAA), professional liability, laws and regulations, billing and reimbursement, quality assurance, and risk management. This course includes basic training in verbal and non-verbal communication skills needed for successful clinical practice. Prerequisites: Successful completion, with a grade of 'C' or higher, of prerequisite undergraduate courses in psychology or equivalent social or behavioral science. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**PHA - 514 Clinical Medicine I**

This is the first in a three-part course series that provide an intensive study of the principles essential to the practice of primary care medicine. Lectures will discuss the etiology, pathophysiology, clinical presentation, diagnostic evaluation, and the management principles of various diseases in the following topic categories: introduction to pharmacology; genetics; nutrition; general pediatrics; infectious diseases; psychiatry; neurology; hematology; and, immunology. Lectures, readings, case study analysis, and discussion of specific disorders in each category will provide an understanding of the key clinical concepts relevant to disease diagnosis and patient care. Prerequisites: Successful completion, with a grade of 'C' or higher, of prerequisite undergraduate courses in human anatomy and human physiology. Also requires concurrent enrollment in PHA 510 and PHA 512. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**PHA - 515 Diagnostic Methods**

This course will introduce PA students to the various diagnostic studies used in the screening, diagnosis, and management of disease. This course focuses on the common diagnostic tools of laboratory medicine that are available to the clinician. Many of the factors influencing the test selection process and the role of laboratory test findings in clinical decision making will be discussed. Topics include clinical laboratory studies, hematology, chemistry, microbiology, urinalysis, coagulation studies, and special testing. Prerequisite: Successful completion, with a grade of 'C' or higher, of prerequisite undergraduate courses in human anatomy and human physiology. Also requires concurrent enrollment in PHA 510 and PHA 514. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**PHA - 520 Principles of Clinical Pharmacology I**

This is the first in a two-part course series designed provide students with an intensive study of the principles pharmacology and pharmacotherapeutics required for patient care. Emphasis in the course is placed on the applications of pharmacological principles in primary care medicine. This course is organ system-based; the topics discussed will mirror the major organ systems covered in Clinical Medicine II. Pharmacological principles discussed in this course include principles of pharmacology and drug action; pharmacokinetics and dynamics; drug dosage calculation; the usage profile for major classes of clinically important drugs, including indications, contraindications and side effects, and dosing and administration; principles of drug selection, and assessment of therapeutic efficacy and outcome. Prerequisite: Successful completion of PHA 514. Also requires successful completion, with a grade of C or higher, of prerequisite undergraduate courses in human physiology and biochemistry. Requires concurrent enrollment in PHA 522, PHA 524, and PHA 525. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**PHA - 521 Research & Statistics**

This online/face-to-face blended course is designed to discuss the different components and terminology of research as well as various research models ranging from the highly quantitative to broad qualitative methods. The course will provide a practical approach to research planning through the logical sequence of developing a research proposal pertaining to the research interests of individual students. Formulation of research questions, hypotheses, literature search techniques, ethical issues, and the writing of the research proposal/final research report and the dissemination of research findings will be discussed. This course is designed to provide the first-time researcher with the skills to undertake research and to write up proposals and final reports in areas of their choice. Prerequisites: Successful completion, with a grade of C or higher of prerequisite undergraduate courses in statistics. Also requires concurrent enrollment in PHA 522, PHA 524 and PHA 525. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**PHA - 522 Diagnostic Reasoning I**

This is the first in a two-part course series designed to develop students' skills in clinical problem solving and promote application of knowledge gained throughout PA school for use in patient assessment and management, and

formulating patient care plans. In class, students will be presented with clinical case scenarios, which they must analyze and make decisions relevant to patient evaluation and management. Students are encouraged to apply their medical knowledge and to utilize sound, clinically based texts and online references to derive clinical assessment plans and facilitate case analysis. The goal of this course is to develop students' clinical critical thinking and problem-solving skills, including utilizing previously learned information and recognition of how to find necessary information to fill knowledge gaps. Prerequisite: Successful completion of PHA 514 and PHA 512. Also requires concurrent enrollment in PHA 532, PHA 535, and PHA 536. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**PHA - 523 PA Professionalism & Practice II**

This is the second of a three-part course series designed to introduce and familiarize students with the professional and practice issues of importance to the PA profession. This second course is an introduction to principles and practices of population health in the U.S. healthcare system, focusing on the Chicago metropolitan area and Chicago Medical District as an exemplar microcosm to represent the larger health system paradigm. The course will discuss issues related to healthcare access, population health trends, and current topics in public health policy and healthcare reform. Additionally, the role of social determinants of health on disease management is explored as a tool for reviewing health outcomes in the U.S. Course discussions will explore the influence of race, class, gender, immigration, and social status on health care policy. These discussions are designed to provide students with various lenses through which to analyze current and emerging public health policies, practices, and healthcare outcomes. Prerequisite: Successful completion of PHA 513 and PHA 514. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**PHA - 524 Clinical Medicine II**

This is the second in a three-part course series designed provide students with an intensive study of the principles essential to the practice of primary care medicine. Lectures will discuss the etiology, pathophysiology, clinical presentation, diagnostic evaluation and management principles of various diseases in the following topic categories: dermatology; otolaryngology; ophthalmology; cardiology; pulmonology; nephrology, including fluid and electrolyte and acid-base maintenance; and urology. Lectures, readings, case study analysis and discussion of specific disorders



in each category will provide an understanding of the key clinical concepts relevant to disease diagnosis and patient care. Prerequisite: Successful completion of PHA 514. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **PHA - 525 Principles of Advanced Practice I**

This is the first of a two-part companion course to PHA 524- Clinical Medicine II. This course will discuss the essentials of ordering, interpreting and performing clinical studies used in the screening, diagnosis, management and monitoring of disease. The course will mirror the organ systems scheduled in clinical medicine. Topics include the interpretation of rhythm strips and 12 lead electrocardiograms (EKGs), basic and advanced imaging techniques including: radiography, CT, MRI, PET scan, cardiac imaging and V/Q scan. Emerging diagnostic technology and the use of diagnostic testing in disease assessment and management, including decision making regarding ordering radiologic testing, will also be included. Prerequisite: Successful completion of PHA 514. Also requires concurrent enrollment in PHA 524. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **PHA - 530 Principles of Clinical Pharmacology II**

This is the second in a two-part course series designed provide students with an intensive study of the principles pharmacology and pharmacotherapeutics required for patient care. Emphasis in the course is placed on the applications of pharmacological principles in primary patient care. This course is organ system-based; the topics discussed will mirror the major organ systems covered in the Clinical Medicine III. Pharmacological principles discussed in this course include principles of pharmacology and drug action; pharmacokinetics and dynamics; drug dosage calculation; the usage profile for major classes of clinically important drugs, including indications, contraindications and side effects, and dosing and administration; principles of drug selection, and assessment of therapeutic efficacy and outcome. Prerequisite: Successful completion of PHA 520. Also requires concurrent enrollment in PHA 534 and PHA 535. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **PHA - 532 Diagnostic Reasoning II**

This is the second in a two-part course series designed to develop students' skills in clinical problem solving, and promote application of knowledge gained throughout PA school for use in patient assessment and management, and formulating patient care plans. In class, students further

refine their patient care skills through case analysis and discussion. The format of the course is similar as PHA 522 - Diagnostic Reasoning I, where students will be presented with clinical case scenarios that they must analyze and make decisions relevant to patient evaluation and management. The cases in this term present more complex diagnostic and management issues than in the previous course. The goal of this course is to further develop students' clinical critical thinking and problem solving skills, including utilizing previously learned information and recognition of how to find necessary information to fill knowledge gaps. Prerequisite: Successful completion of PHA 522. Also requires concurrent enrollment in PHA 534 and PHA 535. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **PHA - 533 PA Professionalism & Practice III**

This is the third of a three-part course series designed to introduce and familiarize students with the professional and practice issues of importance to the PA profession. This course will explore the psychosocial aspects of patient care to help students develop their understanding of the dynamic between one's own and patient's attitudes, biases, and values, and the impact they have on medical practice and patient relationships and communication. Discussions and presentations will cover the basic counseling and patient education skills necessary to help patients and families cope with illness and injury, and to modify behaviors as needed to adhere to therapeutic management plans and improve outcomes. Discussions include issues of culture, faith, religion and sexuality, and the impact these forces have on attitudes towards health and patient counseling. Prerequisite: Successful completion of PHA 513 and PHA 523. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **PHA - 534 Clinical Medicine III**

This is the third in a three-part course series designed provide students with an intensive study of the principles essential to the practice of primary care medicine. Lectures will discuss the etiology, pathophysiology, clinical presentation, diagnostic evaluation and management principles of various diseases in the following topic categories: gastroenterology, endocrinology, women's health, rheumatology, orthopedics, geriatrics, and wellness and prevention medicine. Lectures, readings, case study analysis and discussion of specific disorders in each category will provide an understanding of the key clinical concepts relevant to disease diagnosis and patient care. Prerequisite: Successful

completion of PHA 514 and PHA 524. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 6

#### **PHA - 535 Principles of Advanced Practice II**

This is the second of a two-part companion course to PHA 534 - Clinical Medicine III. This course will discuss the essentials of ordering, interpreting and performing clinical studies used in the screening, diagnosis, management and monitoring of disease. The course will mirror the organ systems scheduled in clinical medicine. Topics include the interpretation of abdominal imaging, gastrointestinal testing, renal and bladder imaging, hormone assays, breast imaging, cervical cancer screening, bone testing, fracture imaging and preventative and geriatric testing. Emerging diagnostic technology and the use of diagnostic testing in disease assessment and management, including decision making regarding ordering radiologic testing, will also be included. There will also be several written short answer case assignments, done in class, that will encompass knowledge students have gained in Diagnostic Methods, as well as Principles of Advanced Practice I. Prerequisite: Successful completion of PHA 525. Also requires concurrent enrollment in PHA 534. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **PHA - 536 Emergency & Surgical Medicine**

This 2-credit course will provide students with an introduction to the diagnosis and treatment of disease states and conditions encountered in emergency and urgent care settings. Students will also be introduced to surgical concepts needed to assess patients and provide care in surgical settings. Emergency Medicine lectures will discuss the role of triage, assessment, and the management of commonly encountered medical, surgical, environmental, and psychiatric emergencies as they present in the adult and pediatric populations. Surgical lectures will discuss general surgical concepts. Pre- and post-operative patient assessment and care management will be emphasized. Prerequisite: Successful completion of PHA 514, PHA 524, and PHA 525. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **PHA - 581 Family Medicine**

During this experience in family medicine, students see patients, perform assessments and formulate care plans under the supervision of a physician, PA or advanced practice nurse. Comprehensive, longitudinal care is stressed. Common problems are reviewed and the responsibilities of a primary care physician assistant are observed and taught.

Principles of health, wellness, prevention, recognition and treatment of substance abuse, and chronic disease management and chronic care are introduced in the clinical setting. Patient assessment and management are reviewed to include the generation of a differential diagnosis, and oral presentation of patient data to the supervising physician and appropriate referral of patients. Prerequisite: Successful completion of all first-year PA program courses and evaluations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **PHA - 582 Internal Medicine I**

This clinical practice is designed to introduce students to the practice of internal medicine. Through participating directly in patient care, students have the opportunity to evaluate and manage a variety of patients and their problems. Students further develop their skills in history taking and physical examination and review pathophysiologic principles as a guide to caring for patients. Students will develop an understanding of relationships between disease states and the patient from the medical, social and emotional points of view. The team approach allows students the opportunity to actively work toward the goals of quality patient care while reinforcing medical principles. Patient assessment and management are reviewed to include the generation of a differential diagnosis, oral presentation of patient data to the supervising physician and appropriate referral of patients. Prerequisite: Successful completion of all first-year PA program courses and evaluations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **PHA - 583 Internal Medicine II**

This clinical practice rotation is designed to immediately follow Internal Medicine I and reinforce internal medicine concepts through practice in an internal medicine subspecialty. Through participating directly in patient care, students have the opportunity to evaluate and manage a variety of patients and their problems. Students further develop their skills in history taking and physical examination and review pathophysiologic principles as a guide to caring for patients. Students will develop an understanding of relationships between disease states and the patient from the medical, social and emotional points of view. The team approach allows students the opportunity to actively work toward the goals of quality patient care while reinforcing medical principles. Patient assessment and management are reviewed to include the generation of a differential diagnosis, oral presentation of patient data to the supervising

physician and appropriate referral of patients. Prerequisite: Successful completion of all first-year PA program courses and evaluations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **PHA - 584 General Surgery I**

The student will be introduced to the principles of preoperative, operative and postoperative care, diagnosis of surgical disease, indications for surgery, recognition and response to surgical emergencies, and the physiological principles of surgery are presented. Technical experience is provided in the operating rooms. Lectures and/or conferences provide additional direct contact with other members of the inter-professional healthcare team. Prerequisite: Successful completion of all first year PA program courses and evaluations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **PHA - 585 General Surgery II**

This clinical practice rotation is designed to immediately follow General Surgery I and reinforce general surgery concepts through the practice of a surgical subspecialty. Students will continue their exposure to the principles of preoperative, operative and postoperative care, diagnosis of surgical disease, indications for surgery, recognition and response to surgical emergencies, and the physiological principles of surgery are presented. Technical experience is provided in the operating rooms. Lectures and/or conferences provide additional direct contact with other members of the interprofessional health care team. Prerequisite: Successful completion of all first year PA program courses and evaluations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **PHA - 586 Women's Health**

The student will learn routine obstetrics, gynecologic health maintenance and patient education. Identification and management of pregnancy, infertility, gynecologic oncology, family planning and psychosomatic disorders will be introduced. Normal psychological changes in obstetrics and gynecology will also be covered. Prerequisite: Successful completion of all first year PA program courses and evaluations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **PHA - 587 Pediatrics**

Principles and practice patient care from birth through adolescence are studied by providing direct patient care. Students will learn basic pediatric assessment, diagnosis,

treatment and appropriate referral. The rotation will also provide exposure to developmental milestones, routine immunizations, common childhood illnesses, infant/child safety and patient/parent education. Seminars, conferences, lectures and case presentations provide additional learning experiences. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **PHA - 588 Behavioral Health**

Provides exposure to major psychiatric disorders focusing on diagnosis and management. Emphasis on aspects of psychology and psychiatry relevant to primary practitioner with a holistic approach to patient care, recognizing significant biological, psychological and social/environmental factors contributing to the patient's illness. Prerequisite: Successful completion of all first year PA program courses and evaluations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **PHA - 589 Long Term Care/Geriatrics**

Supervised clinical practice experience is provided in long term care/geriatrics, with a focus on rehabilitative medicine, geriatric medicine and the care of patients with chronic and/or terminal disease. Physical therapy, occupational therapy, and rehabilitation of patients with physical, psychological and social disabilities is also introduced. Prerequisite: Successful completion of all first year PA program courses and evaluations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **PHA - 590 Emergency Medicine**

Students will see patients in all areas of the emergency department under supervision of attending physicians, PAs or advanced practice nurses. Students will perform histories and physical examinations, record their findings and discuss patients with assigned preceptors. Students will formulate diagnosis and treatment plans, bearing in mind the inherent time, patient risk and cost factors. Students will learn the assessment, diagnosis, and treatment of common emergency room patients and their complaints. Prerequisite: Successful completion of all first-year PA program courses and evaluations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **PHA - 591 Elective I**

Elective rotation I may include any medical or surgical practice area as approved by the director of Clinical Education. This four-week rotation may provide a more in-depth study of one clinical practice area of interest to the student.

Students are expected to provide patient care under the supervision of the preceptor. Learning experiences should include taking histories and performing physical exams, formulating a differential diagnosis, assessment and treatment plan. Experiences may also include performing common procedures in the specific area of practice or going to the operating room (if applicable). Prerequisite: Successful completion of all first year PA program courses and evaluations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **PHA - 592 Elective II**

Elective rotation II may include any medical or surgical practice area as approved by the director of Clinical Education. This four-week rotation may provide a more in-depth study of one clinical practice area of interest to the student. Students are expected to provide patient care under the supervision of the preceptor. Learning experiences should include taking histories and performing physical exams, formulating a differential diagnosis, assessments, and treatment plans. Experiences may also include performing common procedures in the specific area of practice or going to the operating room (if applicable). Successful completion of all first year PA program courses and evaluations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **PHA - 593 Advanced Clinical Practice I**

This course is part one of a two-part course series in an advanced area of PA practice. This course consists of a 15-week rotation in a single, focused area of advanced PA clinical practice. Students will select from several areas of medicine or surgery as they are available. Availability of advanced practice clinical areas and locations are determined by the director of Clinical Education. Advanced clinical rotations will generally require a minimum of 40 contact hours per week. Prerequisite: Successful completion of second year PA rotations and evaluations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 15

#### **PHA - 594 Advanced Clinical Practice II**

This course is part two of the two-part course series and consists of a 15-week rotation in a single, focused area of advanced PA clinical practice. Students will select from several areas of medicine or surgery as they are available. Availability of advanced practice clinical areas and locations are determined by the Director of Clinical Education. Advanced clinical rotations will generally require a minimum of 40 contact hours per week. Prerequisite: Successful

completion of PAS 593 - Advanced Clinical Practice I. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 15

#### **PHA - 595 Master's Research Project I**

This is the first of a two-part course sequence that will integrate the critical thinking, application of research data analysis, and presentation skills taught throughout the program in a formative research capstone project. Students are expected to apply knowledge obtained from PHA 521: Research and Statistics and participation in journal club activities in the development of their project. Students will work with an assigned faculty adviser to develop a clinical research question and gather, analyze and critique relevant research literature related to the proposed question to develop an extensive literature review paper. Students will use this information in the next part of the course sequence to prepare a master's capstone project designed to develop a potential research study. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **PHA - 596 Master's Research Project II**

This is the second of a two-part course sequence that will integrate the critical thinking, application of research data analysis and presentation skills taught throughout the program in a formative research capstone project. Students are expected to apply knowledge obtained from PHA 521: Research and Statistics and participation in journal club activities in the development of their project. Students will work with an assigned faculty adviser to develop a feasible research project based on the research question and literature review developed in PHA 595. Students will then prepare a master's capstone paper and presentation based on their original research study design. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **PHA - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**PHR - 556 Tools for Research**

This course focuses on the practical elements required to work as a scientist in modern times. It includes didactic lecture and computer practice on Power Point, poster making, importing into word documents, Adobe Photoshop, Sigma Plot, Grants.org, on line proposal submission, advanced med-line searches, Excel spreadsheets, and reference managing systems. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**PHR - 594 Structure Function and Pharmacology Of Cell Receptors**

Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**PHR - 699 Doctoral Research**

Laboratory research for the doctoral dissertation for PhD candidates only. By special arrangement. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-9

**PHR - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**PHY - 503 Physiology of the Striated/Cardiac Muscle**

This course serves as an introduction to the basic properties of cellular electrophysiology using the cardiac muscle as an example. It introduces structural, molecular and cellular factors of cell excitation as well as its spread throughout the cell and/or tissue. The course should be useful to students of the cardiovascular system or muscle at all different levels across disciplines such as physiology, biochemistry, pharmacology and pathophysiology. The course includes lectures as well as laboratory sessions in which experimental techniques are demonstrated that allow the quantification of the parameters discussed in the lecture. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 3

**PHY - 511 Graduate Physiology I**

Comprehensive physiology course dealing with all major or an systems except the CNS. Concept formation and problem solving are stressed. Lectures are supplemented by small group discussions and laboratory exercises. Students are expected to discuss assigned study questions in group discussions. Laboratory exercises are divided between conventional experiments and computer simulations of physiological systems. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 5

**PHY - 512 Graduate Physiology II**

Continuation of PHY 511. This is the second of two courses that focuses on cellular, tissue and organ-based physiology. The first half of the course discusses renal physiology, acid-base balance, gastrointestinal physiology, gastrointestinal and reproductive physiology. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 3

**PHY - 590 Special Topics in Physiology**

Advanced course dealing with selected topics in physiology. Particular subjects vary from year to year. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 1-9

**PMR - 781 Research in Physical Medicine & Rehabilitation**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout the academic year. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the director of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of eight weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Clinical Curriculum. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-8

**PMR - 791 Physical Medicine & Rehabilitation**

This course introduces the student to the field of Physical Medicine and Rehabilitation (PM&R). The course includes

introduction in the care of patients with disabilities due to strokes, spinal cord injuries, head trauma, amputations, movement disorders, arthroplasties, etc. In addition, the student is expected to observe, understand, and learn what services are provided by the allied health professional staff, and when it is appropriate to prescribe these services. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

**PMR - 792 Physical Med & Rehab Virtual Away Elect**

This two-four week online PM&R course is designed to allow non-Rush fourth year students interested in auditioning in PM&R at Rush explore the field in addition to interacting with faculty & residents. The course is centered around 1 week learning modules on a single diagnosis (i.e. Stroke) where the students are given a clinical case they will use as a backdrop for their learning. Each day, the students will be required to submit 1-2 paragraph responses to questions, complete a group discussion (students only), group discussion with a resident, and receive a didactic lecture from an attending physician. In addition, the course will incorporate concepts of disability, have mock oral boards cases, and have a virtual get-together with residents from the program. At the end of the course, the students have to present a 20 minute presentation on a topic of their choice. They will be evaluated based upon the quality of their presentation, daily submissions, and quality of interaction/participation in group discussions. Retake course for credit: No. Pass/No pass grading allowed: No. Credit(s): 1-2

**PSY - EXM Psychiatry Exam Remediation**

Remediation of course examination. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PSY - REM Psychiatry Clinical Remediation**

Remediation of clinical weeks. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PSY - 7EI Psychiatry Individualized Elective**

Students may receive credit for an individually arranged elective with a Rush faculty member. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter stating the student's activities, responsibilities, amount of supervision, and specific dates of the rotation. The sponsoring faculty member must complete an evaluation of the student's performance at the conclusion of the elective. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval

from the assistant dean of Clinical Education before beginning the rotation. Students may receive four weeks of credit for an individually arranged elective. Credit for a maximum of only one individually arranged elective will count toward graduation requirements. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PSY - 701 Core Clerkship: Psychiatry**

This course provides basic medical and didactic exposure to the major psychiatric disorders focusing on diagnosis and management. Emphasis is placed on aspects of psychiatry relevant to the primary practitioner with a holistic approach to patient care, recognizing the significant biological, psychological and social/environmental factors contributing to the patient's illness. Systems concepts of care are presented in an integrated manner through graded, intensive clinical experiences. Inpatient settings employed for assignment of patient responsibility include general adult, intensive adult, consultation-liaison services and clinical research. Required Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PSY - 783 Research in Psychiatry**

The student is exposed to basic clinical psychiatric research and be involved with patients with a wide spectrum of psychiatric disorders. Most of the research is based on using medical treatment that is investigational. The objectives of this clerkship are to become familiar with basic clinical research, including use of psychiatric rating scales, and basic research design. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PSY - 792 Psychiatric Consult (Med/Psych)**

This course is designed for students interested in the internal medicine/psychiatry residency or psychiatry in a consultation/liaison setting. Adults hospitalized on medical, surgical, obstetric and neurological services are studied with supervised diagnostic evaluation and continuing management. Integration of medical, psychological and family issues are emphasized, including the role of the milieu-home, community and hospital. Special work is done with dialysis patients, transplant patients, patients with malignancy and those undergoing intensive care. The course is planned as an experience in all areas, with emphasis depending upon student interest and needs. Those interested in the combined internal medicine/psychiatry residency may choose to have additional experiences to acquaint them with the residency and this combined approach to patient care. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-6

**PSY - 793 Child Psychiatry**

In this course, students will work with the treatment teams of the 4 Kellogg Child Psychiatric Inpatient Unit, the Rush Therapeutic Day School, the Medication Clinic, a residential treatment center for emotionally and behaviorally disturbed students and outpatient services for children and adolescents. Students attend seminars in child development, psychopathology, psychopharmacology and therapeutic modalities. Students participate in multidisciplinary staffing's case conferences, departmental grand rounds and the journal club. Optional experience in school consultation at a therapeutic school for autistic children, and forensic consultant at the Juvenile Detention Center is available. Students are supervised by faculty members and child psychiatry fellows. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PSY - 794 Adult Psychiatry**

The objective of this course is to increase the student's knowledge of various psychiatric disorders and to improve knowledge and skills in drug therapy, individual psychotherapy, family therapy and group therapy. Emphasis is placed on crisis management and brief therapy in inpatient settings. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

**PSY - 795 Geriatric Psychiatry**

Objectives of this course are: (1) to increase the amount of experience in treating elderly patients with psychiatric diagnostic skills, and the use of psychotherapy and pharmacotherapy with elderly patients; (2) to learn the psychological changes that accompany the aging process; and (3) to become familiar with normal and abnormal states and processes in the elderly. These objectives are accomplished via: (a) readings in the field of geriatric psychiatry, and (b) direct treatment of selected patients with supervision by attending psychiatrists, fellows and residents. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PSY - 796 Addiction Medicine**

The Rush Addition Medicine Elective is designed for medical students to learn: the role of outpatient addiction medicine treatment including the role of opioid replacement treatment for treatment of opioid use disorders, the role of psychosocial and dual diagnosis treatments, and the barriers to starting the medication and linking with treatment, the general approach to patients poisoned by drugs of abuse including recognition of basic toxidromes, the evaluation

and treatment of overdoses and toxicities related to drugs of abuse, and the treatment of opioid and alcohol withdrawal syndromes in the inpatient, outpatient, and emergency department setting, the role of harm reduction in treating addiction, including the prescription of the opioid overdose antidote naloxone. and apply skills in application motivational interviewing and the stages of change model to patients with substance use disorders. They will have the opportunity to work directly with the Rush Substance Use Intervention Team and gain an understanding of the breadth of treatments available in the outpatient setting. Students will be trained with materials adapted from the PCSS buprenorphine x-waiver training course in order to make sure are aware how medication assisted treatment for opioid use disorders affects and could benefit their patients. Students have a choice of taking this elective for two or four weeks. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

**PSY - 797 Advanced Psychiatry: Road Home Program**

The Advanced Psychiatry Elective: the Road Home Program elective is designed to further students' education by: 1) providing students with an opportunity to work with veterans, a vulnerable population with unique needs; 2) giving students first-hand exposure to the processes involved in group psychotherapy, specifically cognitive processing therapy for post-traumatic stress disorder but also alternative treatments such as yoga and mindfulness; and 3) providing students the experience of being on a treatment team which manages combat-related issues such as suicidality, depression, post-traumatic stress disorder, traumatic brain injury, military sexual trauma, and substance use disorders. Students have a choice of taking this elective for two or four weeks. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

**PTH - 7E1 Pathology Individualized Elective**

Students may receive credit for individually arranged activities with Rush faculty members, outside faculty personal, private physicians or researchers or persons in medically related field such as medical historians, ethicists, attorneys and medical journalists. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter stating the student's activities, responsibilities, amount of supervision, specific dates of the rotation and that the student will not receive any monetary compensation. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the

director of Clinical Curriculum before beginning the rotation. Students may receive four weeks of credit for an individually arranged elective. Credit for a maximum of only one individually arranged elective will count toward graduation requirements. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PTH - 781 Research in Pathology**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout the academic year. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the director of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of eight weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Clinical Curriculum. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-8

**PTH - 791 Pathology**

This course is aimed at students who are considering post-graduate training in pathology and students who desire to enhance and complement their knowledge of general pathology. The student experiences what training in pathology is all about and realize that there are many aspects in this intriguing field. The student has hands-on experience in the techniques of grossing specimens in surgical pathology, molecular diagnostic techniques, image analyses, and clinical laboratory procedures. The student is encouraged to get involved in the performance of autopsies, including weekends, if so desired. On the last day of the course, the students prepare a 20-minute presentation to the department on a topic mutually agreed upon with the Course Director. The students have intimate contact with the residents and attending staff. Their activities will be supervised by the Course Director on a regular basis. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**PVM - 553 Observational Epidemiology**

Course will provide an in-depth description of case-control and cohort studies. This includes the different types (e.g., hospital- or population-based controls, retrospective and prospective cohorts, nested case-control), their strengths, weaknesses and uses, the definition and selection of cases and controls, matching and sampling, the definition and selection of exposure and comparison groups, the ascertainment of disease status and exposure status, and issues in analysis and interpretation of data, including the role of bias (selection bias, confounding bias, recall bias, misclassification of disease and exposure status), the effect of non-participation and loss to follow-up, and the application of various analytic approaches (stratification, standardization, and multivariate models). The computation, interpretation and application of basic epidemiologic concepts and statistics will be reinforced throughout the course, including measures of disease frequency (prevalence, incidence, attack rate) and measures of association (relative risk, odds ratio, risk difference, population attributable risk). Landmark studies illustrating the different types of case-control and cohort studies will be described. Trainees will be assigned readings from basic epidemiologic texts as well as publications from major case-control and cohort studies. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

**PVM - 781 Research in Preventive Medicine**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout the academic year. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the director of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of eight weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Clinical Curriculum. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-8

**RAD - 7EI Diagnostic Radiology Individualized Elective**

Students may receive credit for an individually arranged elective with a Rush faculty member. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter stating the student's activities, responsibilities, amount of supervision, and specific dates of the rotation. The sponsoring faculty member must complete an evaluation of the student's performance at the conclusion of the elective. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the assistant dean of Clinical Education before beginning the rotation. Students may receive four weeks of credit for an individually arranged elective. Credit for a maximum of only one individually arranged elective will count toward graduation requirements. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**RAD - 711 Interventional Radiology**

This clinical clerkship exposes the student to interventional radiology with emphasis on patient care. Both non-vascular as well as vascular interventional examinations are performed on inpatients as well as outpatients. Students have assigned readings and are able to attend lectures given by the Diagnostic Radiology attending staff and residents included under the Diagnostic Radiology clerkship. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**RAD - 721 Radiation Oncology**

In this course students participate in the normal activities of the department including consultations, treatment planning, and follow-up care of cancer patients. The student is assigned to multiple services, allowing exposure to different cancer sites. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

**RAD - 781 Research in Radiology**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout the academic year. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the director of Clinical Curriculum before beginning the

rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of eight weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Clinical Curriculum. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-8

**RAD - 791 Diagnostic Radiology**

In this course basic radiologic principles are demonstrated, and the role of the diagnostic radiologist in the clinical setting of general patient care, and medical and surgical specialty consultations is emphasized. Each student prepares one case for the teaching file and gives one oral presentation. Students have assigned readings to complete, and are tested by a written final examination. Students are also urged to attend the two daily departmental teaching conferences. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**RAD - 796 Nuclear Medicine**

In this course all facets of the disciplines of nuclear medicine are studied, with particular emphasis on radionuclide scanning of organ systems for diagnostic and research purposes. Emphasis is on pathophysiologic correlation and case study. Literature review and individual topics are encouraged to provide in-depth study in the broad field of nuclear medicine. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

**RCP - 501 Foundations of Professional Practice**

This course is designed to provide the student with the knowledge and skills to appropriately utilize evidence-based communication, teamwork, and conflict resolution concepts. The opportunities and challenges of social media in professional and personal contexts will also be explored. Additionally, the course will provide an overview of informatics topics that are most relevant to professional practice, namely, informatics standards, standardized clinical terminology, electronic health records, and information literacy. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**RCP - 511 Introduction to Respiratory Care**

This course provides students with the principles of chemistry and physics as they apply to respiratory care, an introduction to patient assessment, laboratory findings, radiography and pathophysiology related to common cardiopulmonary

disorders. Specific modes of respiratory care are examined to understand principles of application to common cardiopulmonary disorders and related interventions indications, hazards, contraindications and evaluation. Prerequisite: Admission to the program. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**RCP - 512 Cardiopulmonary Anatomy And Physiology**

Students will pursue an in-depth study of cardiac and pulmonary anatomy and physiology, as well as diagnostic procedures commonly used in the hospital to evaluate these systems. Topics include function of the respiratory system, ventilatory mechanics, gas transport in the blood, natural and chemical regulation of breathing, circulation, blood flow and pressure, and cardiac output. The heart-lung relationship and clinical applications of these phenomena in the pulmonary system will be emphasized. Prerequisite: Admission to the program. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 5

**RCP - 515 Respiratory Care Pharmacology**

This course introduces the physiologic and pharmacologic basis of pulmonary and cardiac medications. Students will study the preparation, as well as the calculation of dosages and mixtures. General principles of pharmacology as a basis for an in-depth discussion of bronchoactive, mucus controlling drugs, surfactant and aerosolized anti-infective agents, and the drug groups related to the cardiopulmonary system such as neuromuscular blocking agents, central nervous system depressants, cardiovascular agents, diuretics and antimicrobial agents will be included. Prerequisite: Admission to the program. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**RCP - 520 Respiratory Care Equipment & Techniques**

This course provides students with the opportunity to gain hands-on experience with respiratory care equipment. Students select, assemble, and check equipment for proper function, operation and cleanliness. Equipment malfunctions and actions to correct malfunctions will also be covered. Equipment will include oxygen delivery devices, humidifiers, aerosol generators, pressure ventilators, gas delivery, metering and analyzing devices, percussors, vibrators, environmental devices, manometers, gauges and vacuum systems. Maintenance of artificial airways, fiberoptic bronchoscopy, thoracentesis, chest tube maintenance and arterial blood gas sampling will also be discussed. Basic and advanced life support will be covered to include cardiopulmonary resuscitation, artificial ventilation and circulation, endotracheal

intubation, airway care, recognition and treatment of arrhythmias, and cardiovascular pharmacology. Related equipment will also be reviewed to include manual resuscitators, artificial airways, defibrillators and cardiac monitors. RCP 511, RCP 512. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**RCP - 521 Patient Assessment**

Fundamentals of respiratory assessment will be covered to include review of existing data in the patient record, patient history, physical examination, oximetry, blood gases, respiratory monitoring, pulmonary function assessment, laboratory studies, chest and upper airway radiographs, ventilation/perfusion scans, bedside EKG interpretation and cardiovascular monitoring. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**RCP - 522 Pulmonary Disease**

Topics include the etiology, pathophysiology, diagnosis, treatment and prognosis of common pulmonary diseases and conditions. Respiratory care management of non-respiratory disorders commonly encountered in the critical care unit will also be covered. Pulmonary and critical care medicine, obstructive and restrictive pulmonary disease, neoplastic disease of the lung, infectious diseases, neurological and neuromuscular disorders, drowning, burns, smoke inhalation, carbon monoxide poisoning, drug overdose and respiratory care of the post-operative patient will be reviewed. Prerequisite: RCP 512. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**RCP - 523 Mechanical Ventilation**

Provides instruction in the theory, set-up, operation and maintenance of mechanical ventilators, their associated modes of ventilation and related equipment. Topics include mechanical ventilator theory, ventilator operation, modes of ventilation, ventilator maintenance and trouble shooting. Prerequisite: RCP 511, RCP 512. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**RCP - 530 Cardiac Diseases**

Topics include the etiology, pathophysiology, diagnosis, treatment and prognosis of common cardiac and cardiovascular conditions. Respiratory care management of cardiac and cardiovascular disorders, shock, trauma, renal failure, acute GI disturbances, and invasive cardiovascular procedures will be reviewed. Additionally, learners will learn to interpret 12-lead ECGs and obtain their ACLS credentials. RCP 512 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**RCP - 531 Critical Respiratory Care**

Provides instruction on all phases of adult critical care and continuous mechanical ventilation. Topics include physiology and classification of mechanical ventilation, acid base balance, indications for mechanical ventilatory support, implementation, monitoring, ventilator weaning and discontinuance will be covered. Advanced critical care techniques for invasive and non-invasive patient monitoring will be covered. Hemodynamic monitoring will include arterial pressure monitoring, central venous and pulmonary artery catheters, and cardiac output measurement. Non-invasive monitoring techniques including oximetry, transcutaneous monitoring, capnography, ventilator graphic analysis, and assessment of the critical ill patient will also be reviewed. Prerequisite: RCP 512, RCP 520 RCP 521, RCP 522, RCP 523. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**RCP - 532 Pulmonary Function Testing**

Provides a hands-on experience conducting and interpreting complete pulmonary function tests to include spirometry, lung volumes, and diffusing capacity. Common variations such as bronchoprovocation testing and bronchial responsiveness along with tests for muscle weakness are also included. In addition, the student will learn the operation, maintenance, and quality control principles for all common pulmonary function and gas analysis equipment. Bronchoscopy, exercise testing, and metabolic testing will also be reviewed. Prerequisite: RCP 512, RCP 522. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**RCP - 533 Pediatric & Neonatal Respiratory Care**

This course is designed to provide the student with the opportunity to utilize evidence-based knowledge and critical thinking skills in the planning and provision of comprehensive respiratory care to newborns, infants, children, and adolescents along the health-illness continuum. Topics include fetal growth and development, neonatal and pediatric cardiopulmonary physiology and pathophysiology, respiratory care assessment of the newborn, infant and pediatric patient, as well as respiratory care diagnostic and therapeutic interventions targeted to specific cardiopulmonary pathologies. Prerequisite: RCP 512, RCP 520 RCP 521, RCP 522, RCP 523. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**RCP - 534 Clinical Practice I**

Students will observe and achieve competencies related to respiratory procedures in general medical/surgical floors

and adult intensive care units. Introduces students to clinical respiratory care procedures. Topics include introduction to the clinical affiliate, patient assessment, medical gas therapy, aerosol therapy, incentive spirometry, positive pressure breathing, chest physiotherapy and airway care. Prerequisites: Satisfactory completion of first two semesters of course work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**RCP - 563 Research Methods**

This course introduces the student to methods of scientific research to include review of literature, research designs, sampling techniques, variables and measurement, appraisal of the quality of existing evidence, research ethics, and formulation of a problem statement and hypothesis. Students will also produce the first draft of a research proposal. Prerequisite: Admission to the program. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**RCP - 565 Research Project**

Guided activities to complete the research protocol, create data collection instruments and begin data collection. Prerequisite: RCP 563. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**RCP - 566 Education**

This course provides an introduction to basic principles and techniques used in respiratory care education. Topics include patient education, in-service education, needs assessment, writing objectives, lesson plan development, development of learning activities, use of media, development of presentations and evaluation. Motivational interviewing and smoking cessation are also introduced. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**RCP - 567 Management**

Management theory and practical application is explored. Supervisory, management and leadership qualities and responsibilities are studied as well as organizational structures. Students are shown how these principles apply to organizations generally and Respiratory Care departments specifically. Students are introduced to hospital organization, health care finance, quality assurance and improvement, and health care regulation Prerequisite: Admission to the program. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**RCP - 569 Clinical Practice II**

This course provides students the opportunity to further develop both basic and advance skills required in the intensive care of the respiratory patient. Topics include patient assessment, medical gas therapy, aerosol therapy, incentive spirometry, positive pressure breathing, chest physiotherapy, airway care using nasal, endotracheal, tracheal tubes, initiation of mechanical ventilation, patient stabilization and monitoring, evaluation of hemodynamic variables, bronchial hygiene, evaluation for weaning, endotracheal intubation, extubation, arterial line sampling, arterial puncture, blood gas analysis, and non-invasive monitoring. The students will also complete a pulmonary function, bronchoscopy observation, long-term care and pediatric rotations. Prerequisite: Satisfactory completion of first-year coursework. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 7

**RCP - 570 Cardiopulmonary Diagnostics**

This advanced cardiopulmonary diagnostics course covers a range of tests that assess different body systems. Topics include polysomnography and sleep disorders, metabolic testing, ultrasound, and echocardiography. Learners will observe tests, identify indications, interpret findings, and describe the equipment required for each. Prerequisite: RCP 512, RCP 522, RCP 530. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**RCP - 573 Research Project II**

Guided activities to continue data collection, begin data analysis, interpret findings, and begin manuscript preparation. Prerequisite: RCP 563. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**RCP - 575 Clinical Practice III**

This course provides an opportunity to acquire clinical experience in the intensive care of neonatal and pediatric patients. Topics include patient assessment, medical gas therapy, aerosol therapy, incentive spirometry, chest physiotherapy, airway care, initiation of mechanical ventilation, patient stabilization and monitoring, evaluation of hemodynamic variables, bronchial hygiene, evaluation for weaning, endotracheal intubation, monitoring (invasive and non-invasive), labor and delivery assistance and transport. Students are also given the opportunity to further develop their adult critical care skills. Prerequisite: RCP 569. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 7

**RCP - 577 Clinical Seminar**

Learners review respiratory care across the life span with an emphasis on problem-solving and decision-making. Practice board credentialing examinations will be administered. Current issues relevant to respiratory care will be explored to include new trends in management, new treatments and technologies, ethical issues in health care, and issues related to professional development and practice. Prerequisite: Second-year status. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**RCP - 583 Research Project III**

Guided activities to answer an appropriate research question, data analysis, research presentation and develop a manuscript for completion of the required program research requirements. Prerequisite: RCP 563 Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**RCP - 585 Clinical Practice IV**

This course provides an opportunity to advance the students clinical experience in neonatal and pediatric respiratory care in the areas of patient assessment and monitoring (invasive and non-invasive), mechanical ventilation, ECMO, airway care, labor and delivery assistance and transport. Students will also have an opportunity for reinforcement of adult intensive care. In addition, students are provided with an opportunity in home health, skilled nursing facility, pulmonary rehabilitation and sleep. Prerequisite: RCP 575. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 8

**RCP - 589 Disease Management/Home Health**

This course places emphasis on decision-making and problem-solving as they relate to clinical respiratory care and disease management. Current issues relevant to respiratory care will be discussed such as ethical issues in health care, smoking cessation, palliative care, and issues related to professional development and practice. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**RCP - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all admitted students after completing one semester. Master or Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements

are required to maintain Continuous Enrollment through the College of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **RMC - M3 Clinical Curriculum Enrollment**

This course acts as place holder for billing purposes. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **RMC - M4 Clinical Curriculum Enrollment**

This course acts as a place holder for billing purposes. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **RMC - 5EI Basic Biomedical Research**

Students who have been selected to complete the RMC Summer Research Fellowship Program will meet weekly to discuss their independent research projects. Discussions will emphasize how to give a poster presentation, crafting an abstract, and creating a poster. Students will work with each other in small groups to discuss progress of their individual projects and troubleshoot problems they encounter with their research. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

he end of the M3 yr. At the conclusion of medical school, each RMC student will be the “Rush Medical College Expert” on their specific topic. Rush will support students who opt to publish their project with their faculty mentor. Potential publication types include case reports, book chapters, abstracts, and research papers. During the M1 year, each medical student will identify a main theme they are interested in investigating throughout the three years of the project. Each year, students will be responsible for developing topics related to their theme. For each topic, the student identify and complete learning objectives, work with a faculty adviser and submit documentation to the faculty member who will provide advice, feedback and mentoring. Themes can be re-shaped learning objectives that correspond to their current course work. Required Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **RMD - EXM Primary Care Exam Remediation**

Remediation of course examination. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **RMD - REM Primary Care Clinical Remediation**

Remediation of clinical weeks. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **RMD - 519 Capstone III**

Continuation of RMD 518 . The Capstone Project is a self-directed, longitudinal activity that will commence during the M1 year and culminate in a presentation at the end of the M3 yr. At the conclusion of medical school, each RMC student will be the “Rush Medical College Expert” on their specific topic. Rush will support students who opt to publish their project with their faculty mentor. Potential publication types include case reports, book chapters, abstracts, and research papers. During the M1 year, each medical student will identify a main theme they are interested in investigating throughout the three years of the project. Each year, students will be responsible for developing topics related to their theme. For each topic, the student identify and complete learning objectives, work with a faculty and submit documentation to the faculty member who will provide advice, feedback and mentoring. Themes can be re-shaped learning objectives that correspond to their current course work. Required Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **RMD - 520 Capstone IV**

Continuation of RMD 519. The Capstone Project is a self-directed, longitudinal activity that will commence during the M1 year and culminate in a presentation at the end of the M3 yr. At the conclusion of medical school, each RMC student will be the “Rush Medical College Expert” on their specific topic. Rush will support students who opt to publish their project with their faculty mentor. Potential publication types include case reports, book chapters, abstracts, and research papers. During the M1 year, each medical student will identify a main theme they are interested in investigating throughout the three years of the project. Each year, students will be responsible for developing topics related to their theme. For each topic, the student identify and complete learning objectives, work with a faculty adviser and submit documentation to the faculty member who will provide advice, feedback and mentoring. Themes can be re-shaped learning objectives that correspond to their current course work. Required Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **RMD - 538 Basic Spanish for Medical Professionals**

The Basic Spanish for Medical Professionals course addresses the needs of medical students with little or no experience in Spanish. Students develop communicative proficiency and accuracy in the use of the Spanish language in medical settings with Spanish speaking patients. Students are exposed to pertinent information about Hispanic cultures as well. Students also participate in language tasks through listening, reading, writing, and conversation. Classes will be taught in Spanish in order to immerse students in the target language. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **RMD - 539 Intermediate Spanish for Medical Professionals**

The Intermediate Spanish for Medical Professionals course designed for first year medical students to increase their comfort level with Spanish-language interviews, examination, and patient education. The course is primarily focused on developing medical Spanish language communication skills for students with pre-existing Spanish conversational skills, but will also incorporate the socio-cultural context of Hispanic /Latino patients. Students also participate in language tasks through listening, reading, writing, and conversation. Classes will be taught in Spanish in order to immerse students in the target language. Medical Spanish requires longitudinal practice and which learners can enhance (or lose) over time. As a result, the course is also intended to help medical students understand and self-assess their proficiencies and limitations in medical Spanish and access help when needed. This course expands across the first year of medical school. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **RMD - 540 Humanities in Medicine I**

This course examines how empathy, observation and interpretation impact one’s experience of literature and the arts. Particular attention will be paid to the ways in which observation and engagement with the arts parallels observation and engagement in patient care. Individual sessions will focus on the role of temporal and professional perspective in describing medical events, differences and similarities in observational skills in the arts, and medicine and the use of movement and drama exercises to examine how one experiences and is experienced by others. Course activities will include museum visits, movement activities, acting exercises, and reading and writing about selected works of literature. Elective Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 541 Humanities in Medicine II**

Continuation of RMD 540. This course examines how empathy, observation and interpretation impact one’s experience of literature and the arts. Particular attention will be paid to the ways in which observation and engagement with the arts parallels observation and engagement in patient care. Individual sessions will focus on the role of temporal and professional perspective in describing medical events, differences and similarities in observational skills in the arts, and medicine and the use of movement and drama exercises to examine how one experiences and is experienced by others. Course activities will include museum visits, movement activities, acting exercises, and reading and writing about selected works of literature. Elective Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 542 Spanish for Medical Professionals I**

The primary goal of this course is to make it possible for students to communicate with patients whose dominant language is Spanish. The best way to learn a language is to practice as often as possible. From the onset of this course, students are encouraged to use their Spanish language skills in class in situations similar to those they may encounter in a medical environment with Spanish-speaking patients. There are in-class activities, such as role-playing, brief conversations, interviewing, and history taking. Students also expand their Spanish vocabulary with an emphasis on medical terminology. The students review the essentials of Spanish grammar to enhance their ability to communicate. Furthermore, the course includes informal presentations about different aspects of Hispanic culture to both enhance the quality of the relationship with Spanish-speaking patients and to avoid misunderstandings about certain cultural values and expectations. By familiarizing students with conversational Spanish and medical Spanish, this course will enable students to apply their learning to real-world situations, to assist with communications, and ultimately to break down the barriers between doctors and patients. This course also includes a series of cultural extracurricular activities and Spanish language websites for students to practice Spanish independently outside of the classroom. By visiting museums, restaurants and attending Hispanic movie sessions, students will be able to engage in Spanish learning activities between classroom sessions. Students will be able to utilize the internet educational resources to fit their individual learning styles, and to complement their in-class instruction and their particular medical interests. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

### **RMD - 543 Spanish for Medical Professionals II**

The primary goal of this course is to make it possible for students to communicate with patients whose dominant language is Spanish. The best way to learn a language is to practice as often as possible. From the onset of this course, students are encouraged to use their Spanish language skills in class in situations similar to those they may encounter in a medical environment with Spanish-speaking patients. There are in-class activities, such as role-playing, brief conversations, interviewing, and history taking. Students also expand their Spanish vocabulary with an emphasis on medical terminology. The students review the essentials of Spanish grammar to enhance their ability to communicate. Furthermore, the course includes informal presentations about different aspects of Hispanic culture to both enhance the quality of the relationship with Spanish-speaking patients and to avoid misunderstandings about certain cultural values and expectations. By familiarizing students with conversational Spanish and medical Spanish, this course will enable students to apply their learning to real-world situations, to assist with communications, and ultimately to break down the barriers between doctors and patients. This course also includes a series of cultural extracurricular activities and Spanish language websites for students to practice Spanish independently outside of the classroom. By visiting museums, restaurants and attending Hispanic movie sessions, students will be able to engage in Spanish learning activities between classroom sessions. Students will be able to utilize the internet educational resources to fit their individual learning styles, and to complement their in-class instruction and their particular medical interests. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

### **RMD - 545 Sonographic Anatomy I**

The course will enhance understanding of key preclinical anatomy and physiology concepts through introducing students to living normal sonographic anatomy and physiology, clinically relevant pathophysiologic conditions, and common ultrasound guided clinical procedures. Topics will be presented in parallel with the Rush M1 anatomy curriculum. We will utilize a monthly to biweekly, interactive, hands-on workshop review of (1) normal anatomy and physiology: direct sonographic visualization of anatomic structures and real-time physiology on normal paid human models, (2) abnormal anatomy and pathophysiology: sonographic visualization of pathologic conditions through the use of a portable ultrasound simulator and review of actual clinical case images, (3) ultrasound guided clinical procedures: performance of common ultrasound guided clinical procedures on cadaver

and simulation models. Elective Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

### **RMD - 546 Sonographic Anatomy II**

Continuation of RMD 545. The course will enhance understanding of key preclinical anatomy and physiology concepts through introducing students to living normal sonographic anatomy and physiology, clinically relevant pathophysiologic conditions, and common ultrasound guided clinical procedures. Topics will be presented in parallel with the Rush M1 anatomy curriculum. We will utilize a monthly to biweekly, interactive, hands-on workshop review of (1) normal anatomy and physiology: direct sonographic visualization of anatomic structures and real-time physiology on normal paid human models, (2) abnormal anatomy and pathophysiology: sonographic visualization of pathologic conditions through the use of a portable ultrasound simulator and review of actual clinical case images, (3) ultrasound guided clinical procedures: performance of common ultrasound guided clinical procedures on cadaver and simulation models. Elective Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

### **RMD - 550 Capstone V**

Continuation of RMD 520. The Capstone Project is a self-directed, longitudinal activity that will commence during the M1 year and culminate in a presentation at the end of the M3 year. At the conclusion of medical school, each RMC student will be the "Rush Medical College Expert" on their specific topic. Rush will support students who opt to publish their project with their faculty mentor. Potential publication types include case reports, book chapters, abstracts, and research papers. During the M1 year, each medical student will identify a main theme they are interested in investigating throughout the three years of the project. Each year, students will be responsible for developing topics related to their theme. For each topic, the student identify and complete learning objectives, work with a faculty and submit documentation to the faculty member who will provide advice, feedback and mentoring. Themes can be re-shaped learning objectives that correspond to their current course work. Required Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1

### **RMD - 551 Capstone VI**

Continuation of RMD 550. The Capstone Project is a self-directed, longitudinal activity that will commence during the M1 year and culminate in a presentation at the end of the M3 yr. At the conclusion of medical school, each RMC student will be the "Rush Medical College Expert" on their specific

topic. Rush will support students who opt to publish their project with their faculty mentor. Potential publication types include case reports, book chapters, abstracts, and research papers. During the M1 year, each medical student will identify a main theme they are interested in investigating throughout the three years of the project. Each year, students will be responsible for developing topics related to their theme. For each topic, the student identify and complete learning objectives, work with a faculty adviser and submit documentation to the faculty member who will provide advice, feedback and mentoring. Themes can be re-shaped learning objectives that correspond to their current course work. Required Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

### **RMD - 552 Capstone VII**

Continuation of RMD 551. The Capstone Project is a self-directed, longitudinal activity that will commence during the M1 year and culminate in a presentation at the end of the M3 yr. At the conclusion of medical school, each RMC student will be the "Rush Medical College Expert" on their specific topic. Rush will support students who opt to publish their project with their faculty mentor. Potential publication types include case reports, book chapters, abstracts, and research papers. During the M1 year, each medical student will identify a main theme they are interested in investigating throughout the three years of the project. Each year, students will be responsible for developing topics related to their theme. For each topic, the student identify and complete learning objectives, work with a faculty adviser and submit documentation to the faculty member who will provide advice, feedback and mentoring. Themes can be re-shaped learning objectives that correspond to their current course work. Required Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

### **RMD - 560 The Foundation of Medical Practice**

Students are introduced to the structure and pedagogical methodology of the Rush Medical College pre-clerkship curriculum. Students are introduced to the roles that define the Rush curriculum and how those roles function to organize the curriculum. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

### **RMD - 561 Host Defense and Response**

This course uses a multi-disciplinary case based approach to the structure and function of cells, tissues and organs as they pertain to infectious diseases and the immune system in the normal and disease state. Students learn to identify alterations and underlying pathophysiology which occur in

the disease state, the significance of symptoms, signs and other ancillary data. Students also learn appropriate diagnostic modalities in evaluation of infectious disease and diseases of the immune system. Students are expected to describe the mechanism of action and use of antibiotics, antivirals and biologic drugs for the treatment of these diseases. Students are also expected to construct differential diagnoses for common presenting symptoms in infectious disease. Students learn how to collect an appropriate history and conduct a relevant physical exam and to recognize abnormal findings in this exam. Students also learn key techniques in communicating with patients, families and colleagues. Finally, students examine epidemiological and socioeconomic aspects of infectious disease and diseases of the immune system and explore selected ethical issues related to the clinical cases presented in the course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

### **RMD - 563 Food to Fuel**

This course will use a multi-disciplinary case based approach to the structure and function of cells, tissues and organs as they pertain to the digestive system, metabolism of food components and nutritional status. Students will learn to identify alterations and underlying pathophysiology which occur in the disease state, the significance of symptoms, signs and other ancillary data. Students will also learn appropriate diagnostic modalities in evaluation of diseases that affect the digestive system and nutritional status. Students will be expected to describe the mechanism of action and use of pharmacologic agents for the treatment of these diseases. Students will be expected to construct differential diagnoses for common presenting symptoms in diseases of the digestive system or that relate to nutritional status. Students will learn how to collect an appropriate history and conduct a relevant physical exam and to recognize abnormal findings in this exam. Students will also learn key techniques in communicating with patients, families, and colleagues. Finally, students will examine epidemiological and socioeconomic aspects of digestive system disease and nutritional status and explore selected ethical issues related to the clinical cases presented in the course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

### **RMD - 564 Movement and Mechanics**

This course uses a multidisciplinary case based approach to the structure and function of cells, tissues and organs as they pertain to the digestive system, metabolism of food components and nutritional status. Students will learn to identify alterations and underlying pathophysiology which occur in the disease state, the significance of symptoms,



signs and other ancillary data. Students also learn appropriate diagnostic modalities in evaluation of diseases that affect the digestive system and nutritional status. Students are expected to describe the mechanism of action and use of pharmacologic agents for the treatment of these diseases. Students are also expected to construct differential diagnoses for common presenting symptoms in diseases of the digestive system or that relate to nutritional status. Students learn how to collect an appropriate history and conduct a relevant physical exam and to recognize abnormal findings in this exam. Students also learn key techniques in communicating with patients, families, and colleagues. Finally, students examine epidemiological and socioeconomic aspects of digestive system disease and nutritional status and explore selected ethical issues related to the clinical cases presented in the course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 564E Movement and Mechanics Exam Makeup**

Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 565 Brain, Behavior and Cognition**

This course uses a multi-disciplinary case based approach to the structure and function of cells, tissues and organs as they pertain to the digestive system, metabolism of food components and nutritional status. Students learn to identify alterations and underlying pathophysiology which occur in the disease state, the significance of symptoms, signs and other ancillary data. Students also learn appropriate diagnostic modalities in evaluation of diseases that affect the digestive system and nutritional status. Students are also expected to describe the mechanism of action and use of pharmacologic agents for the treatment of these diseases, and to construct differential diagnoses for common presenting symptoms in diseases of the digestive system or that relate to nutritional status. Students learn how to collect an appropriate history and conduct a relevant physical exam and to recognize abnormal findings in this exam. Students also learn key techniques in communicating with patients, families, and colleagues. Finally, students examine epidemiological and socioeconomic aspects of digestive system disease and nutritional status and explore selected ethical issues related to the clinical cases presented in the course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 566 Reproduction and Sexuality**

This course uses a multi-disciplinary case based approach to the expression of human sexuality and to the structure and function of cells, tissues and organs as they pertain to regulation of the reproductive systems, fetal development, and renal function. Students learn to identify alterations and underlying pathophysiology which occur in the disease state, the significance of symptoms, signs and other ancillary data. Students also learn appropriate diagnostic modalities in evaluation of diseases that affect sexuality, reproductive systems, fetal development, and renal function. Students are expected to describe the mechanism of action and use of pharmacologic agents for the treatment of these diseases. Students are also expected to construct differential diagnoses for common presenting symptoms of diseases related to sexuality, reproduction, and renal function. Students learn how to collect an appropriate history and conduct a relevant physical exam and to recognize abnormal findings in this exam. Students also learn key techniques in communicating with patients, families and colleagues. Finally, students examine epidemiological and socioeconomic aspects of reproductive system disease, sexuality and renal disease, and explore selected ethical issues related to the clinical cases presented in the course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 567 Growth, Development and the Life Cycle**

This course uses a multi-disciplinary case based approach to normal neo-natal to geriatric development and disease related to different stages of the life cycle. Students learn to identify alterations and underlying pathophysiology which occur in the disease state, the significance of symptoms, signs and other ancillary data. Students also learn appropriate diagnostic modalities in evaluation of normal development and diseases related to different stages of the life cycle. Students are expected to describe the mechanism of action and use of pharmacologic agents for the treatment of these diseases. Students are also expected to construct differential diagnoses for common presenting symptoms of diseases associated with specific stages of the life cycle. Students learn how to collect an appropriate history and conduct a relevant physical exam and to recognize abnormal findings in this exam. Students also learn key techniques in communicating with patients, families, and colleagues. Finally, students examine epidemiological and socioeconomic aspects of health and disease through the life cycle and explore selected ethical issues related to the clinical cases presented in the course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 569 Complex Cases and Transition to Clerkship**

This course has two segments. This first segment uses a multi-disciplinary case based approach to the structure and function of cells, tissues and organs as they pertain to the complex, multi-organ system cases. Students learn to identify alterations and underlying pathophysiology which occur in multi-organ system diseases, the significance of symptoms, signs and other ancillary data. Students also learn appropriate diagnostic modalities in evaluation of multi-organ system diseases. Students are expected to describe the mechanism of action and use of pharmacologic agents for the treatment of these diseases. Students are also expected to construct differential diagnoses for common presenting symptoms of the multi-organ system diseases presented in this course. Students learn how to collect an appropriate history and conduct a relevant physical exam and to recognize abnormal findings in this exam. Students also learn key techniques in communicating with patients, families, and colleagues. Finally, students examine epidemiological and socioeconomic aspects of multi-organ system diseases, and explore selected ethical issues related to the clinical cases presented in the course. The second segment consists of a focused preparation for the USMLE Step 1 Examination. Students use the NBME CBSSA, extensive online question banks and spaced timing study as resources to support an Individualized Study Plan developed in conjunction with and monitored by course faculty and staff. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 570 Clinical Genetics I**

The goal of this course is to enhance genomic education for medical students by employing a variety of pedagogical approaches. There will be a combination of literature review, as well as observation opportunities of genetic counseling sessions including prenatal counseling, cancer, neurology and pediatric. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **RMD - 571 Clinical Genetics II**

Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 574 Vital Fluids**

This course will use a multi-disciplinary case based approach to the structure and function of cells, tissues and organs as they pertain to cardiovascular system and renal function in the normal and disease state. Students will learn to identify alterations and underlying pathophysiology which occur in

the disease state, the significance of symptoms, signs and other ancillary data. Students will also learn appropriate diagnostic modalities in evaluation of diseases that affect the cardiovascular and renal systems and renal function. Students will be expected to describe the mechanism of action and use of pharmacologic agents for the treatment of these diseases. Students will be expected to construct differential diagnoses for common presenting symptoms in cardiovascular and renal diseases. Students will learn how to collect an appropriate history and conduct a relevant physical exam and to recognize abnormal findings in this exam. Students will also learn key techniques in communicating with patients, families, and colleagues. Finally, students will examine epidemiological and socioeconomic aspects of cardiovascular and renal diseases and explore selected ethical issues related to the clinical cases presented in the course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 575 Vital Gases**

This course will use a multi-disciplinary case based approach to the structure and function of cells, tissues and organs as they pertain to the respiratory system in the normal and disease state. Students will learn to identify alterations and underlying pathophysiology which occur in the disease state, the significance of symptoms, signs and other ancillary data. Students will also learn appropriate diagnostic modalities in evaluation of diseases that affect the respiratory system. Students will be expected to describe the mechanism of action and use of pharmacologic agents for the treatment of these diseases. Students will be expected to construct differential diagnoses for common presenting symptoms in respiratory system diseases. Students will learn how to collect an appropriate history and conduct a relevant physical exam and to recognize abnormal findings in this exam. Students will also learn key techniques in communicating with patients, families, and colleagues. Finally, students will examine epidemiological and socioeconomic aspects of respiratory system diseases and explore selected ethical issues related to the clinical cases presented in the course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 576 Introduction to Hematology**

This course uses a multi-disciplinary case based approach to the structure and function of cells, tissues and organs as they pertain to the function and regulation of the hematological system. Students learn to identify alterations and

underlying pathophysiology which occur in the disease state, the significance of symptoms, signs and other ancillary data. Students also learn appropriate diagnostic modalities in evaluation of hematologic diseases. Students are expected to describe the mechanism of action and use of pharmacologic agents for the treatment of these diseases. Students are also expected to construct differential diagnoses for common presenting symptoms of hematologic diseases. Students learn how to collect an appropriate history and conduct a relevant physical exam and to recognize abnormal findings in this exam. Students also learn key techniques in communicating with patients, families, and colleagues. Finally, students examine epidemiological and socioeconomic aspects of hematologic diseases, and explore selected ethical issues related to the clinical cases presented in the course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 577 Introduction to Oncology**

This course uses a multi-disciplinary case based approach to the structure and function of cells, tissues and organs as they pertain to the function and regulation of the development and pathology associated with Oncology. Students learn to identify alterations and underlying pathophysiology which occur in the disease state, the significance of symptoms, signs and other ancillary data. Students also learn appropriate diagnostic modalities in evaluation of oncologic diseases. Students are expected to describe the mechanism of action and use of pharmacologic agents for the treatment of these diseases. Students are also expected to construct differential diagnoses for common presenting symptoms of oncologic diseases. Students learn how to collect an appropriate history and conduct a relevant physical exam and to recognize abnormal findings in this exam. Students also learn key techniques in communicating with patients, families, and colleagues. Finally, students examine epidemiological and socioeconomic aspects of oncologic diseases, and explore selected ethical issues related to the clinical cases presented in the course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 580 Foundations of Research Methods**

The goal of this course is to provide students with knowledge about the steps necessary to successfully design and execute a research project. Students learn to work collaboratively with other students and develop skills in oral presentation, both of which are critical aspects of research. Students will be mentored by faculty with research experience as well as clinical faculty, who will provide clinical contact for all

research. There is a self-directed learning component in that students select their topic area and work in teams to design their research proposals. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 701 Core Clerkship: Primary Care**

This is a required core clerkship for all third-year medical students. Students will be imbedded in either a Family Medicine or Internal Medicine ambulatory office for four weeks. Students will independently evaluate, present, and care for patients while working directly with attending preceptors. This will be a primarily outpatient experience and is meant to immerse students in the primary care of patients on all levels, including acute care, chronic illness care, and preventive care. Curriculum will highlight the unique relationships and specialized patient care that occurs in this setting. Required Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **RMD - 705 Health Equity Program: Global and Local Perspective**

The Health Equity and Social Justice Leadership Program is a four-year, longitudinal curriculum focused on both global and local health equity issues. The program is designed to empower students with knowledge, skills, and experiences that they can use to fight against health inequity throughout their careers. Students in the program will be immersed in a supportive environment through which they can collaborate with Rush community health and global health initiatives. For the first two years of the Health Equity program, students will participate in an elective composed of both classroom and community experiences, as well as a longitudinal project with a community organization. The third year will include a self-study curriculum as well as quarterly seminars. In the fourth year of the program, students will complete an equity focused elective that can be global or local in addition to monthly seminars with local and national experts. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 713 USMLE Step II Preparation**

USMLE Step certification is necessary for receiving licensure to practice medicine. The step 2 portion is required for graduation from Rush Medical College. This exam assesses the ability of examinees to apply medical knowledge, skills, and understanding of clinical science essential for the provision of patient care under supervision, and includes emphasis on health promotion and disease prevention. The purpose of this course is to give students time, guidance

and resources to prepare for successful completion of the Step 2 exam components: Clinical Knowledge (CK) and Clinical Skills (CS). Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **RMD - 714 Residency Interviewing Preparation**

Residency interviews are an important opportunity for M4 students to visit a residency program and put their best face forward to secure a PGY 1 residency position. Interviewing skills are an important component of the selection process. This course will review basic interviewing techniques and enhance students' organization skills to optimize the interviewing process. They will create an effective strategy to research programs in advance of interviews, learn how best to answer difficult interview questions, create a tracking mechanism detailing program information and outcome, and develop a financial plan. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **RMD - 720 Careers in Medicine**

Students interested in the CiM elective will identify one specialty to pursue for the two week clerkship. The students will be paired with one or two attendings for the two week period. Students will be expected to spend 85% of their time with physicians participating in patient care to experience the daily life of a practitioner in both the inpatient and the outpatient settings as appropriate for the specialty. They will spend the remaining 15% of their time in independent study researching the specialty and completing exercises on the Careers in Medicine website. The specialties available will be those into which students can match upon graduation from medical school (either into a categorical or advanced program) including anesthesia, radiology, dermatology, pathology, physical medicine and rehabilitation, ophthalmology, cardiothoracic surgery, neurosurgery, orthopedic surgery, otolaryngology, radiation oncology, urology. Specialties not eligible for this course include the core clerkships (psychiatry, neurology, family medicine, obstetrics and gynecology, pediatrics, surgery, internal medicine and emergency Medicine). Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

#### **RMD - 722 Clinical Bridge Course**

This course is designed to bridge the gap between medical student knowledge and expectations of day-one interns. Through small group, case-based discussions, this elective will expose fourth-year medical students to common intern-level concepts with an emphasis on high yield information and the thought process that drives clinical reasoning.

Elective Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 2

#### **RMD - 723 Medical Informatics**

Students will be given an introduction to the field of clinical informatics and complete a research project in informatics. An overview of Healthcare Information Technology (HIT) will be provided with an emphasis on elements relevant to clinical careers and informatics research. Students will complete a research project evaluating an informatics application for efficacy, usability, or impact on clinical outcomes. Elective Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **RMD - 726 Mindfulness in Medicine**

Mindfulness Based Stress Reduction is a curriculum taught for more than 30 years that teaches skills, drawn largely from mindfulness (or insight) meditation traditions, that: promote the capacity for holding experience in non-judgmental awareness; and cultivates patience, compassion (to self and other), clarity during moments of emotional distress, quicker resolution of stress reactivity, and creative responses to stressors. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 727 Advanced Medical Education**

The role of physicians as care givers is deeply connected to their role as educators - of patients, of students and of peers. The goal of this elective is to introduce students to their role as teachers before they start residency and to better prepare them for this role. Students will participate in medical education across RMC. This is a longitudinal experience with course content and participation spanning across the M4 year. Students participating in the four-week option will develop a work that is considered to be educational scholarship. This can include a video, a publication, a presentation or a poster. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **RMD - 735 Health Care and Homelessness**

There are innumerable health care disparities within the homeless community that many medical students want to address over the course of their careers. The Health Care and Homelessness elective is designed to have M4 students develop the skills and knowledge necessary to practice social medicine as it relates to homeless health. Social medicine focuses on understanding how social and economic conditions impact health, disease and the practice of medicine, and on fostering conditions in which

this understanding can lead to a healthier society. As such, the planned curriculum will have students rotate through Heartland Alliance Health's federally qualified health centers and adjunct community resource sites. Objectives will span topics in housing, addiction, social services, benefits eligibility, mental health treatment structures, food and nutrition, harm reduction and trauma informed care. The breadth of experiences is intended to give students an understanding of the social determinants of health, as well as assist in answering relevant questions, such as "How do we help patients obtain benefits?" and "How can we help our patients obtain housing?" Retake course for credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **RMD - 750 Transitions to Residency**

This is a 12-week longitudinal course that is designed to provide fourth-year medical students the opportunity to gain the necessary skills to prepare and navigate the residency program placement process. Students will participate in enrichment activities that will assist in the preparation and completion of USMLE Step CK and Step CS. They will receive residency interview guidance in individual and small group sessions and subsequently participate in mock interviews. Additional course content may include thematic topics to complete RUMC designated horizontal, vertical, and role curriculum. Students will be required to submit a portfolio including but not limited to: Letters of recommendation requests, noteworthy characteristics for MSPE, completion and submission of ERAS applications including CV and personal statement. There is no written examination. Retake course for credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1-12

#### **RMD - 780 Basic Biomedical Research I**

One of a two-course series, RMD-780 will introduce the student to various aspects of the theory and practice of biomedical research. Includes lectures, Journal Club, a written project proposal, practical experience and a written paper on a laboratory technique. Elective Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 781 Basic Biomedical Research II**

Continuation of RMD 780. This is one of a two term course that will introduce the students to various aspects of the theory and practice of biomedical research. It includes lectures, journal club, a written project proposal, practical experience and a written paper on a laboratory technique. Elective Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1

#### **RMD - 900 Independent Study**

Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 1-16

#### **RMD - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the College of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **SBB - 560 Human Blood Group Systems and Principles & Methods of Antibody Identification**

Focus on human blood group systems; biochemistry, inheritance, serologic activity, clinical significance and disease associations. Topics include, but are not limited to, fundamentals of immunology, molecular biology, red blood cell membrane structure, genetics, antibody identifications as they relate to blood group systems. Taught only online. Extensive computer use required. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

#### **SBB - 561 Clin Immunohematology & Transfusion**

Focus on transfusion medicine practice and therapy. Topics include, but are not limited to, human circulatory system, effects of shock, blood component therapy, special transfusion, perinatal, neonatal & pediatric transfusion practice, hemolytic disease of the newborn, transplantation, anemias, infectious and noninfectious complications of blood transfusion. Taught only online. Extensive computer use required. Prerequisites: General knowledge of immunohematology and consent of the instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **SBB - 562 Blood Procurement and Blood Product Manufacturing**

The focus of this course is on theoretical and practical concepts used in human blood procurement and blood product manufacturing. Topics include, but are not limited to, red blood cell & platelet preservation, the oxygen dissociation curve, basic coagulation, allogeneic & autologous blood donor selection, whole blood collection & component preparation, labeling, storage, distribution & use, donor testing,

transfusion infectious diseases, storage lesions, hemato-poietic progenitor cell (HPC) collection & use. Taught only online. Extensive computer use required. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **SBB - 563 Blood Bank/Transfusion Service Operation**

Review of theoretical and practical concepts used in blood bank and transfusion service operation. Topics include, but are not limited to, safety and federal regulatory requirements, disaster management, administration of blood components process validation, automation, human resources management, budgeting, competency assessment. Focus on quality management systems; QC, QA, QM, blood utilization management, error management. Taught only online. Extensive computer use required. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **SBB - 564 SBB Project & Clinical Practicum**

Independent investigation of a topic relevant to an area in immunohematology. Student will submit a written research paper as well as prepare and deliver a presentation based on the topic selected. Field experience under supervision of a professional expert in a blood center and/or hospital transfusion service setting is required for the clinical practicum. Clinical sites include, but are not limited to, apheresis centers, donor centers, stem cell processing centers, and transfusion service centers. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **SBB - 565 Blood Bank Comprehensive Review**

A comprehensive review and exam is provided for students completing the SBB program and who are eligible to sit for the ASCP SBB certification examination. Taught only online. Extensive computer use required. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **SBB - 900 Independent Study**

Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **SBB - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to

remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **SLP - 503L Auditory Skills Lab for the Speech-Language Pathologist**

This course reviews the anatomy and physiology of hearing and the basics of hearing science for the speech-language pathologist. Types of hearing loss, forms of hearing assessment, and principles of prevention, intervention, and rehabilitation are presented as foundations for practicing speech-language pathologists. Skills related to assessment and interventions are developed through laboratory activities. Course may be audited by thesis-track students. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **SLP - 506L Clinical Methods Lab**

This course emphasizes basic clinical methods and skills for beginning graduate students in speech-language pathology with an emphasis on assessment and evidence-based intervention. Topic areas include Rush clinical protocols and operational procedures, note-writing, and documentation. In addition, students will practice administering, scoring, and interpreting a battery of common standardized assessments. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **SLP - 510 Prof Issues - Speech Language Path**

This course provides an overview of professional issues for speech-language pathologists. Topics include regulatory guidelines, licensure, scope of practice, professional code of ethics, healthcare reimbursement and fiduciary responsibility, risk management and legal issues, effective communication skills, best professional practice (HIPPA, FERPA), and other current professional areas. Course may be audited by thesis-track students. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **SLP - 511P SLP Practicum I**

This is a supervised on-campus clinical experience with patients and clients presenting with speech, language, cognitive-communication, voice, motor speech, and/or swallowing impairments. Practicum students will examine and apply evaluative, therapeutic, counseling, and report-writing procedures observation, hands-on training, and simulated learning opportunities. Direct contact with clients and patients may be an opportunity for students as appropriate. Relationships between speech-language pathology and health care, education, and other professions are examined.

Introductory experience includes exposure to patients and clients across the life span and from diverse cultural backgrounds, in a variety of on-campus settings. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **SLP - 512P SLP Practicum II**

This is a supervised clinical experience with clients/patients/students presenting with speech, language, cognitive-communication, voice, motor-speech, and/or swallowing impairments. Practicum students demonstrate evaluative, therapeutic, counseling, and report-writing skills for early practicum experiences. Relationship of speech-language pathology to health care, education, and other professions is further examined. Experience includes patients/clients/students across the life span and from diverse cultural backgrounds, in a variety of settings. Opportunities for continuous professional and interprofessional education (IPE) and development to enhance team performance and outcomes are available. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **SLP - 513P SLP Practicum III**

This is a supervised clinical experience with clients, patients, and students presenting with speech, language, cognitive-communication, voice, motor-speech, and-or swallowing impairments. Students further develop evaluative, therapeutic, counseling, and report-writing skills. Relationship of speech-language pathology to health care, education, and other professions is further examined. Experience includes patients, clients, and students across the life span and from diverse cultural backgrounds, in a variety of settings. Opportunities for continuous professional and interprofessional education (IPE) and development to enhance team performance and outcomes are available. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3-4

#### **SLP - 521 Language Disorders in Children I: Birth Through Age Five**

This course covers language development and disorders from birth through five years of age. Students learn definitions and characteristics of both primary and secondary language disorders, including autism spectrum disorder. Assessment and intervention techniques across the developmental period will be presented. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **SLP - 522 Language Disorders in Children II: Age Six Through Adolescence**

This course covers language development and disorders in children aged 6 years and older. Primary and secondary

language disorders in both oral and written modalities are presented. Skills for assessment and intervention will be developed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **SLP - 523L Instrumentation Lab**

This is a lab course, which focuses on hands-on learning of various instruments that are routinely used in diagnosis and treatment of speech and voice disorders in clinical and research settings. The course will serve as an introduction to the use of digital technology to document assessment findings and provide outcome data for clinicians. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **SLP - 524 Fluency, Dysfluency, and Stuttering**

This course addresses developmental and acquired fluency disorders. Current research findings on stuttering will be discussed. Students learn to describe pertinent characteristics of speech fluency, identify the presence of a clinically significant fluency problem, and determine etiologic and maintaining factors. Differential diagnosis of neurogenic and psychogenic stuttering will also be discussed. Strategies and approaches for prevention and management are considered. Course may be audited by thesis-track students. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **SLP - 526 Speech Sound Disorders**

This course covers development and disorders of speech sound production in pediatric populations. Possible etiologies and subtypes, including childhood apraxia of speech, are discussed. Assessment skills are developed. Theories and procedures of contemporary interventions are presented. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **SLP - 535 Clinical Issues in Cultural and Language Diversity**

This course surveys topics in cultural and linguistic diversity relevant to clinical practice in the profession of speech-language pathology. It is designed to extend students' foundational clinical knowledge to diverse populations, including individuals who speak nonmainstream dialects and those who speak a language other than, or in addition to, English. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **SLP - 537L Anatomy Lab**

This course reviews the anatomy and physiology of the speech systems of respiration, phonation, and articulation in the context of studying the human body through cadaver specimens. This one-hour weekly laboratory experience is supplemented by didactic information focusing on the physiology of speech production and swallowing. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **SLP - 540 Head and Neck Cancer Management**

This course covers the unique challenges of evaluating and treating speech, voice, and swallowing disorders resulting from treatment for head and neck cancer. Basic understanding of surgical and chemoradiation effects and all forms of alaryngeal speech are studied. Emphasis will be placed on communication and swallowing evaluations, and rehabilitation using case studies. A team approach to patient care will be stressed. Course may be audited by thesis-track students. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **SLP - 542L Tracheostomy and Ventilator Lab Ventilator Dependent Patients**

This lab-based course covers the unique challenges of evaluating and treating speech, voice, and swallowing impairments demonstrated by patients requiring tracheostomy tube placement with and without mechanical ventilation. Hands-on education will include task training with various tracheostomy tubes, one-way speaking valves, and ventilators/ventilator settings; as well as interprofessional case studies using high-fidelity mannequins and simulated patient modalities/technologies. Course may be audited by thesis-track students. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **SLP - 558 Dysphagia**

This course covers the normal anatomy and physiology of swallowing, evaluation of disordered swallowing, and management/rehabilitation of swallowing disorders. Topics include clinical and imaging evaluations with special emphasis on video fluoroscopic swallow study procedures and analysis, and evidenced-based rehabilitation protocols and adjunctive modalities. Swallowing disorders in various populations across the age span are discussed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **SLP - 562 Craniofacial Anomalies and Genetic Syndromes**

This course reviews the embryology, anatomy, and physiology of normal and abnormal development of orofacial structures. The focus is on cleft-palate and craniofacial anomalies

with associated syndromes. Surgical, dental, audiological, and feeding aspects are addressed. Speech, language, and resonance evaluation and intervention strategies are discussed with a focus on current literature. The emphasis is on a multi-disciplinary approach to treatment through the craniofacial team. Course may be audited by thesis-track students. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **SLP - 563 Voice Disorders**

This course examines the acoustic, perceptual, and physiological dimensions of normal and abnormal voice. Predisposing, precipitating, and perpetuating etiologic factors are considered. Skills for assessment, differential diagnosis, and management of hyperfunctional, psychogenic, and organic voice disorders are developed. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **SLP - 564 Aphasia**

Adult onset aphasia, apraxia of speech, and related language disorders are examined. Emphases include theoretical foundations, neuroanatomy and pathophysiology, symptomatology, assessment/diagnosis, and clinical management. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **SLP - 567 Dysarthria**

This course will focus on the diagnosis and treatment of a group of speech disorders that affect either single or combined speech subsystems of respiration, phonation, resonance, articulation, and prosody. The speech disorders are caused by changes in speech musculature or its movement patterns due to central or peripheral nervous system damage. This course includes lectures, class discussions, laboratory work, hands-on class projects and literature review papers. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

#### **SLP - 568 Cognition of Acquired Language and Communication Disorders**

This course examines the attentional, memorial, linguistic, and executive processes involved in language and communication functioning. The language and communication characteristics of individuals presenting with neurologic conditions that alter these processes are also described. Assessment and treatment of these disorders is presented. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**SLP - 582 Topics in Research Methods In Communication Disorders**

This course is a supplement to CHS 610, the common research methods course for the College of Health Sciences. It is intended to cover topics other than those in the common core course that are important to audiology and speech-language pathology professionals. Content includes an introduction to systematic reviews and meta-analysis and single subject research designs, with a focus on quality indicators and evidence-based practice in communication disorders. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**SLP - 589P SLP Practicum IV**

This is an advanced clinical experience with clients/patients/ students presenting with speech, language, cognitive-communication, voice, motor-speech, and/or swallowing impairments. Students will devise and integrate evaluative, therapeutic, counseling, and report-writing skills with patients/clients/students across the life span and from diverse cultural backgrounds, in a variety of settings. Relationship between speech-language pathology and health care, education, and other professions are further examined. Opportunities for continuous professional and interprofessional education (IPE) and development to enhance team performance and outcomes are available. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 5

**SLP - 590P SLP Practicum V**

This is an advanced supervised clinical experience with clients, patients, and students presenting with speech, language, cognitive-communication, voice, motor-speech, and-or swallowing impairments. Practicum students further develop and formulate evaluative, therapeutic, counseling, and report-writing skills and procedures for advanced practicum experiences. Relationship of speech-language pathology to health care, education, and other professions is further examined. Experience includes patients, clients, and students across the life span and from diverse cultural backgrounds, in a variety of settings. Opportunities for continuous professional and interprofessional education (IPE) and development to enhance team performance and outcomes are available. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 8-9

**SLP - 592 Applied Topics in Communication Disorders**

Scientific, clinical, and professional issues in audiology and speech-language pathology are examined using a variety of

formats that include student case presentations presented in a clinical rounds format, expert guest speakers and journal club. Oral presentation skills as well as analytical and clinical problem-solving skills are highlighted. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**SLP - 598 Thesis**

Under the guidance and direction of a faculty member and committee, the student originates, proposes and executes a scientific investigation. Emphasis is on a review of current research literature and appropriate research design and methods in support of the stated research objectives. These projects reflect a high degree of scholarship. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 2

**SLP - 900 Independent Study**

This Independent study course will give a student the opportunity to pursue an area of study not commonly included in the curriculum. Independent study is often the initial focused study of a student interested in completing a master's thesis project. Those students interested in pursuing an independent study must meet with a faculty member to discuss, define, and document the coursework and expectations for this experience. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**SLP - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for Fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the College of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**SUR - EXM Surgery Exam Remediation**

Remediation of course examination. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 8

**SUR - REM Surgery Clinical Remediation**

Remediation of clinical weeks. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 8

**SUR - 7E1 Surgery Individualized Elective**

Students may receive credit for an individually arranged elective with a Rush faculty member. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter stating the student's activities, responsibilities, amount of supervision, and specific dates of the rotation. The sponsoring faculty member must complete an evaluation of the student's performance at the conclusion of the elective. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the Assistant Dean of Clinical Education before beginning the rotation. Students may receive four weeks of credit for an individually arranged elective. Credit for a maximum of only one individually arranged elective will count toward graduation requirements. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**SUR - 701 Core Clerkship: Surgery**

The Core Clerkship in Surgery will consist of an 8-week general surgery component in the M3 year. During Surgery, the principles of pre-operative and post-operative care, diagnosis of surgical disease, indications for surgery, recognition and response to surgical emergencies, and the physiological principles of surgery are stressed through the case study method. Students will be involved in the care of approximately three patients per week. Technical experience is provided in the operating rooms and clinical skills lab. Outpatient clinics, lectures and conferences provide additional direct contact with faculty. Required Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 8

**SUR - 710 General Surgery Subinternship**

Under supervision, the student assumes many of the duties and responsibilities of a resident physician. This includes responsibility for preoperative and postoperative care, participation in surgery, and rotating on the night on-call schedule. On-call responsibilities for the surgical sub-intern are at the level of the first year resident, namely, sub-interns will be the first member of the surgical team to see in-hospital consults, emergency room patients, and answer calls from the nurses. They will be supervised by in-house residents. The work is primarily with hospitalized patients; however, there is an opportunity to work with ambulatory and elective surgical patients. Independent library investigative projects are assigned. Required in M4 Year Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**SUR - 711 Cardiovascular Surgery**

This course emphasizes the clinical diagnosis and surgical management of adult and pediatric cardiac disorders. Preoperative evaluation including review of cardiac catheterization data, intraoperative management and postoperative care are discussed at conferences and in the operating room. Indications for surgery, preoperative evaluation and postoperative care are discussed at patient rounds, in conferences and on an individualized basis. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**SUR - 712 Surgical Intensive Care**

This rotation exposes the experienced student to comprehensive management of critically ill surgical patients. Application of advanced life support techniques including vaso-active drugs, mechanical aids to circulation, pacing, and respiratory therapy are reviewed. Pathophysiologic discussion and integration with cardiopulmonary analysis of data obtained from invasive monitoring are emphasized. Radiologic, medical, and surgical aspects of critical care medicine are also incorporated. Students will attempt to function as sub-interns with direct patient responsibilities. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**SUR - 713 Peripheral Vascular Surgery**

This course emphasizes the clinical non-invasive laboratory and radiologic diagnosis of peripheral vascular disorders considered for surgical management. Indications for surgery, pre-operative evaluation and post-operative care are discussed at patient rounds, in conferences and in the operating room. This rotation allows extensive time in the operating room with open cases. The student will work closely with the Vascular Fellow and Attendings. Elective Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

**SUR - 716 Plastic & Reconstructive Surgery**

The primary goal of this clerkship is to provide an introduction to the surgical subspecialty of plastic and reconstructive surgery in as many of its various elements and diverse applications as possible. Plastic surgery covers a broad array of surgical/medical problems including wound healing; burns, both acute and long-term care; congenital anomalies such as cleft lip and palate and other craniofacial defects; breast surgery including breast reduction, augmentation, and reconstruction following mastectomy; microsurgical procedures for a free flap transfer, nerve repair, and other

means of tissue transposition; hand surgery, ranging from acute industrial accidents to long-term rehabilitation for neuromuscular problems; care of facial fractures, both acute and delayed repair; care for trunk and extremity problems, relating both to trauma and tumor extirpation; and aesthetic surgery of the face, extremities and trunk. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **SUR - 721 Pediatric Surgery**

The pediatric surgery elective is available to fourth year medical students. The students that can benefit most from this rotation include students interested in general surgery and pediatrics. The elective will provide an opportunity to become familiar with the pathogenesis, diagnosis, and management of common conditions requiring surgery in the neonatal and pediatric population. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **SUR - 725 RMD Virtual Urology Away (non-Rush)**

2-week elective for away students to participate in Rush Urology educational and clinical activities. We will host didactics via WebEx and also aim to include students in surgeries by Vidyo streaming and virtual outpatient clinical encounters via Vidyo and Epic. We will assess students on oral presentation and an exam. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **SUR - 726 Principles of Urology**

This clerkship provides further experience in the diagnosis and management of urological problems as a supplement to the basic clerkship in surgery. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **SUR - 727 Genitourinary Neoplasia**

This course is designed to present the basic concepts of neoplasia, using the genitourinary neoplasms as models. The student actively participates in the management of both hospitalized and ambulatory patients. Multidisciplinary seminars and individual projects are available. Approval to take this course must be obtained from Dr. Coogan prior to registration. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **SUR - 731 Pain Management**

This rotation exposes the experienced student to the care and management of patients with low back pain, post herpetic neuralgia, complex regional pain syndrome and other common pain problems. This is a busy office setting where students will see new and returning patients to take

histories, perform physical exams and assist in various nerve block procedures. Student will function as a junior house officer. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **SUR - 751 Orthopedics**

This fourth-year elective rotation in Orthopedic Surgery is intended for students considering a career path requiring knowledge of musculoskeletal problems. Students are assigned to work with individual attendings on the Adult Reconstructive Service, Foot-Ankle-Hand Service, Sports Medicine Service, Pediatric and Tumor Service, or the Spine Service. Students work with individual attendings in an office/clinic setting, assist in surgery, and round on inpatients. Students are required to attend the various clinical and resident education conferences. Educational goals include review of functional anatomy, understanding of injury triage, and concepts of treatment. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **SUR - 752 Orthopedic Research**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the Office of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of 8-weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Medical Student Programs. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **SUR - 756 Neurosurgery**

This clinical clerkship expands upon and demonstrates the practical application of neurological sciences. The diagnosis and management of both simple and complex neurosurgically oriented disorders are addressed. Conferences with both the resident and attending staff are held weekly. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **SUR - 757 Principles of Ophthalmology**

The purpose of this course is to acquaint students with the surgical specialty of Ophthalmology. They will learn basic ophthalmic terminology, history and examination principles, attend daily rounds and other didactic sessions, and observe surgery. It is intended that the students will not only learn techniques of examination which will be useful in their own medical practices, but will also understand the capabilities and limitations of the ophthalmologist in order to make better use of ophthalmic consultations. This clerkship may also be taken as a four-week clerkship if prior approval is received from Jack A. Cohen, MD, the associate chairman for Education in the Department of Ophthalmology (Jack\_A\_Cohen@rush.edu). During the second two-week period, the student will gain experience in performing history and physical examinations and will work up patients to present to resident and attending physicians. The student will learn to perform more sophisticated techniques of examination, including slit lamp funduscopy examination and indirect ophthalmoscopy. In general, the student will gain hands-on experience in ophthalmic examination, diagnosis, and theory. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **SUR - 759 Otolaryngology**

Clinical experience is provided in the diagnosis and management of patients with diseases of the ear, nose, throat, head, and neck. Office practice, in addition to the care of hospitalized patients, provides the basis for clinical instruction, with emphasis on case study and proper use of instruments. Departments of Pathology, Radiology and Otology Conferences and Journal Club are included. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **SUR - 761 Surgical Oncology**

Concentrated experience in the surgical diagnosis and management of patients with tumors is provided. Correlation of surgical problems with anatomic and pathological physiology is stressed, including examination of gross and microscopic tissue. Attendance at the tumor clinic and tumor conference is required. Students may also enroll in this clerkship for six weeks by contacting the Office of Medical Student Programs. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-6

#### **SUR - 765 Colon and Rectal Surgery**

Close one-on-one instruction between the student and physician in an apprentice-teacher relationship. The student

accompanies the physician in all outpatient clinic office hours, as well as surgical procedures and hospital rounds. This involves spending approximately 15 hours per week in a clinic environment, assisting in approximately 50 surgical and endoscopic procedures over the month and daily in-hospital rounds. No night call required. The grade will be determined by an essay exam, course clinical evaluations, submitted history and physical exams, and classroom participation. Elective Retake Counts for Credit: No. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **SUR - 771 Thoracic Surgery**

The diagnosis, operative, and postoperative care of patients with pulmonary and esophageal disorders are studied in both hospitalized and ambulatory patients. In addition, students assist in patient care, and topics are assigned for discussion. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **SUR - 781 Research in Surgery**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout the academic year. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the Office of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of eight-weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Medical Student Programs. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **SUR - 782 Research in Anesthesiology**

Students may arrange research rotations individually with faculty at Rush. In order to receive credit for such a rotation, the person to whom the student will be responsible must write a letter describing the student's activities, responsibilities, amount of supervision, and the specific dates of the rotation. Credit toward graduation is granted assuming that the research project is ongoing throughout

the academic year. Students must submit a proposal to the Office of Clinical Curriculum for approval at least eight weeks before the rotation and must have written approval from the Office of Clinical Curriculum before beginning the rotation. Research rotations are scheduled for a minimum of four weeks of credit with the expectation that the full project will extend beyond the formal course duration. Depending on the proposal, the weeks of credit may or may not apply to the rule of 8-weeks maximum credit for coursework in a single subspecialty. This decision is at the discretion of the Office of Medical Student Programs. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **SUR - 794 Advanced Surgery**

Advanced Surgery offers an opportunity for Rush students and especially outside students to become familiar with the Department of General Surgery at Rush University Medical Center. The student will participate in the rotation in a manner similar to the 3rd year students and may assume some of the duties and responsibilities of the junior residents, depending upon their familiarity with the task involved. Students will become involved in preoperative and postoperative care, they will participate in surgery, and 4th year students rotating in Advanced Surgery will take part in the in-house call schedule on a shared rotating basis with 3rd year students. The work is primarily with hospitalized patients, however, there is an opportunity for ambulatory and elective surgery. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **SUR - 795 Anesthesiology**

The program enables medical students to learn airway management; recognize circulatory inadequacy and initiate support of the failing circulation; induce topical and infiltrative anesthesia safely; understand the actions and interactions of depressant and stimulant drugs commonly encountered or used by anesthesiologists; and participate in pre-operative evaluation preparations of surgical and obstetric patients. Prerequisite: MED 701, OBG 701, SUR 701. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 2-4

#### **SUR - 796 Transplantation**

The clinical aspects of transplantation, including donor and recipient surgery, and pre-operative and post-operative care are studied. The student participates in organ preservation care as well. Seminars on the fundamental and clinical aspects of transplant immunology are held. Elective Retake

Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **SUR - 798 Trauma/Critical Care Surgery**

This rotation is designed to provide the fourth year medical student with an in-depth clinical experience in the care of injured patients. Critical decision making and surgical training are the key elements taught during resuscitation, operative management and the critical care phase. The student will follow patients from the ambulance to their discharge home. Multi-level supervision and teaching is available from attending physicians and residents. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4

#### **SUR - 808 Trauma/Critical Care Surgery**

The Cook County Trauma Unit is one of the busiest urban trauma centers in the nation and offers an exceptional clinical experience for both medical students and residents. The trauma surgery rotation is designed to provide the senior-level medical student with an in-depth clinical experience in caring for the severely injured patient. The clerkship focuses on the initial management and associated decision-making, the necessary procedures and operative interventions, and the critical care necessary for survival of the trauma patient. The student is expected to take an assertive role in patient care from the initial encounter with EMS until the patient is discharged from the hospital. Multi-level supervision and guidance is provided by the attending physicians and residents as well as the clinical support staff. Elective Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: Yes. Credit(s): 4-8

#### **VAS - 305 Vascular Anatomy, Physiology and Pathophysiology**

This course is a detailed survey of the large, small, and microscopic vasculature of the human body including variations. Surrounding structures are also studied in their relationship to the vasculature. The purpose and normal mechanism of arterial and venous systems are explored. Disease mechanisms of a wide variety of disorders of arteries and veins are examined, with emphasis on those diseases that can be assessed by noninvasive vascular studies. Risk factors, symptoms and treatment of these pathophysiologic processes will also be presented. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **VAS - 310 Patient Care**

Vascular sonographers interact with patients continually through the workday. Patient care responsibilities include physical care and comfort as well as respectful communication and interactions with all. Patient attitudes in both health and disease are examined in order to make the sonographer more conscious of interactions in a diverse world. Activities are provided to practice patient care and safety skills that students may encounter in a vascular lab, such as, but not limited to, patient transport and comfort, CPR training, universal precautions, infection control and wound wrapping. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **VAS - 320 Ultrasound Physics and Physical Principles I**

This is the first of two courses in ultrasound physics and principles. The topics covered in this course include the basic parameters of sound and ultrasound, B-mode ultrasound, the Doppler Effect, continuous and pulsed wave Doppler, color flow, basic hemodynamics and ergonomics in the vascular lab. Math equations are utilized to examine the relationships of variables in the physics concepts. The relationship of these principles to guide appropriate, efficient, and intelligent use of the instrument controls is emphasized. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **VAS - 320L Physics & Instrumentation Lab**

Students will actively learn basic ultrasound techniques and use of equipment controls in this lab course. Duplex ultrasound controls for B-mode, Doppler, and color image production will be utilized by students to create interpretable images and waveforms. Scanning skills such as appropriate vessel orientation, moving from transverse to longitudinal view on vessels, scanning in long and transverse planes, appropriate ergonomics, are also covered. Student efficiency and problem solving in use of equipment controls are evaluated in the lab proficiency exams. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **VAS - 325 Ultrasound Physics and Physical Principles II**

This is the second of two courses in ultrasound physics and instrumentation. A continuation of the basic principles of B-mode, pulsed wave, and color Doppler are discussed emphasizing the components of the duplex scanner. Math equations are utilized to examine the relationships of variables in the physics concepts. The interaction of ultrasound and tissue, including ultrasound artifacts and bio-effects are also examined. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **VAS - 330 Venous Ultrasound Procedures**

The theories, techniques, and processes for performing deep vein thrombosis (DVT), chronic venous insufficiency (CVI), and vein mapping (VM) studies of the lower and upper extremities (LE/UE) are presented primarily through the use of duplex ultrasound. Topics also include anatomy, diseases, terminology, indications, patient history taking, diagnostic criteria, reporting, and problem-solving procedures. These skills will be addressed in this didactic course and applied in the related laboratory course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **VAS - 330L Venous Ultrasound Procedure Lab**

The venous ultrasound techniques and procedures for LE DVT duplex ultrasound learned in the didactic course will be practiced on models in the student laboratory. Scanning activities will also include history taking, data analysis, reporting, and problem-solving, and appropriate ergonomics. Chronic venous insufficiency, vein mapping, and upper extremity procedures skills will be practiced in VAS-345L Advanced Procedures Lab. Students will observe actual patient exams in the hospital laboratory. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

#### **VAS - 340 Arterial Physiologic and Duplex Procedures**

The theories, techniques and processes of performing physiologic and duplex arterial examinations of the lower and upper extremities are presented. The physiologic exams include segmental pressures, continuous wave Doppler waveforms, plethysmography, exercise testing and some less frequently performed exams. Duplex scanning of the lower and upper extremities includes native arteries, postoperative, pseudoaneurysm, arteriovenous fistula and other less common patient exams. Topics also include anatomy, diseases, terminology, indications, patient history taking, diagnostic criteria, reporting, treatment and problem-solving procedures. These skills will be addressed in this didactic course and practiced in the related laboratory courses VAS 340L and VAS345L. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

#### **VAS - 340L Arterial Physiologic Procedures Lab**

The upper and lower extremities native artery physiologic techniques and procedures in learned in the didactic course will be practiced on models in the student laboratory. Scanning activities will be emphasized but activities also include history taking, data analysis, reporting and problem-solving. Students will observe actual patient exams in the hospital laboratory Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**VAS - 345L Advanced Duplex Ultrasound Procedures Lab**

Advanced vascular procedures including upper extremity venous, chronic venous insufficiency, vein mapping, upper and lower extremity arterial duplex techniques and photoplethysmography (PPG) venous reflux exams are practiced in this course. The advanced vascular procedures, appropriate ergonomics, data analysis, and problem-solving will be practiced on models in the laboratory using duplex and PPG equipment. Students will observe actual patient exams in the hospital's outpatient vascular lab. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**VAS - 350 Cerebrovascular Procedures**

The theories, techniques, and processes of performing cerebrovascular studies using duplex ultrasound of extracranial arteries and transcranial Doppler (TCD) for intracranial arteries are covered in this course. Topics also include anatomy, diseases, terminology, indications, patient history taking, diagnostic criteria, reporting, treatment and problem-solving procedures. These skills will be addressed in this didactic course and practiced in the related laboratory course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**VAS - 350L Cerebrovascular Procedures Lab**

The extracranial duplex ultrasound and intracranial (TCD) techniques and procedures will be practiced on models in the student vascular lab. Scanning activities will be emphasized but activities also include history taking, data analysis, reporting, and problem-solving. Students will observe actual patient exams in the hospital laboratory. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**VAS - 360 Abdominal Vascular Procedures Class and Lab**

Duplex ultrasound procedures used to assess the aorta, iliac, renal, mesenteric, inferior vena cava and hepatoportal vessels will be addressed in this course. Topics also include anatomy, diseases, terminology, indications, patient history taking, diagnostic criteria, reporting, treatment and problem-solving procedures. The abdominal vascular procedures will be practiced on models in the laboratory using duplex equipment. Scanning activities will be emphasized but activities also include history taking, data analysis, reporting and problem-solving. Students will observe actual patient exams in the hospital laboratory. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**VAS - 370 General Pathophysiology**

Pathologic processes for general and organ system pathology in the human body are covered in this course including

the manifestations of disease, etiology, pathogenesis, clinical features, diagnostic tools, prognoses and therapeutic options.

This is an online course comprised of primarily distance learning with some face to face activities on campus. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**VAS - 380 Professional Practices in Ultrasound**

This course is designed to prepare students for a career in vascular ultrasound by generating knowledge and skills in a broad overview of topics that will assist in their professional development under four general headings: professional standards and resources, laboratory management, personal professional skills and applying ethical principles. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 3

**VAS - 390 Introduction to Research**

The student is expected to be a life-long learner, evaluate research and data reports, and contribute to the knowledge base of the field. This course addresses basic knowledge and understanding of the methods of research available and how to use them. It introduces the student to research processes, basic analysis of research papers, evidence based practice, and the application of quality improvement information. Test validation accuracy procedures, including calculations, are also covered. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 2

**VAS - 400 Independent Study**

Independent study courses give students a unique opportunity to pursue a course of study not commonly included in the curriculum. If you are interested in pursuing an independent study, meet with the faculty member you want to work with to define the coursework and expectations. Retake Counts for Credit: Yes. Pass/No Pass Grading Allowed: No. Credit(s): 1-12

**VAS - 411 Clinical Skills in Vascular Ultrasound I**

In this clinical course, the student learns to perform vascular exams on patients in the first clinical rotation in the program. A plan of practice focuses the student on learning particular types of vascular exams from a list of required and elective patient exams according to the program's clinical experience handbook. The student will first observe then perform sections of the planned vascular exams on patients, and go on to perform complete exams under the supervision of the clinical instructor. Prerequisites: Students must successfully complete the required first year courses (C grade or higher) prior to this clinical course. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 11

**VAS - 412 Clinical Skills Vascular Ultrasound II**

In this clinical course, the student continues to learn to perform vascular exams on patients. A plan of study for the rotation focuses the student's learning activities on particular required and elective patient exams according to the clinical experience handbook. Students will first observe, perform sections and finally perform complete vascular exams as their skills improve under supervision of a clinical instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 7

**VAS - 413 Clinical Skills-Vascular Ultrasound III**

In this clinical course, the student continues to learn to perform vascular exams on patients from the list of required and elective patient exams according to the clinical experience handbook. Students will first observe, perform sections and finally perform complete vascular exams as their skills improve under supervision of a clinical instructor. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 8

**VAS - 421 Professional Skills I**

Students will practice professional skills during each semester of the senior year at clinical sites and be evaluated on particular characteristics such as honesty/integrity, interrelationships with patients and staff, communication, cleanliness, initiative, efficiency, confidence, judgement, constructive criticism, learning from mistakes, professional growth, HIPAA compliance, patient mindfulness and personal responsibility. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**VAS - 422 Professional Skills II**

Students will practice professional skills during each semester of the senior year at clinical sites and be evaluated on particular characteristics such as honesty/integrity, interrelationships with patients and staff, communication, cleanliness, initiative, efficiency, confidence, judgement, constructive criticism, learning from mistakes, professional growth, HIPAA compliance, patient mindfulness and personal responsibility. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**VAS - 423 Professional Skills III**

Students will practice professional skills during each semester of the senior year at clinical sites and be evaluated on particular characteristics such as honesty/integrity, interrelationships with patients and staff, communication, cleanliness, initiative, efficiency, confidence, judgement, constructive criticism, learning from mistakes, professional

growth, HIPAA compliance, patient mindfulness and personal responsibility Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**VAS - 441 Senior Topics / Cases I**

Students will prepare, write and present multiple case studies from the patient exams they have performed at their clinical sites. Students will also attend lectures on advanced topics. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**VAS - 442 Senior Topics / Cases II**

Students will prepare, write and present multiple case studies from the patient exams they have performed at their clinical sites. Students will also attend lectures on advanced topics. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**VAS - 443 Senior Topics III/Comprehensive Review**

Students will attend multiple review classes in preparation for the comprehensive Rush comprehensive exam and the ARDMS credentialing exams. Students are required to submit a case study abstract to the national professional and complete the national credentialing examinations. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

**VAS - 451 Cumulative Clinical Skills in Vascular Ultrasound I**

After students master clinical skills in newly learned patient exams with a passing grade, they must continue to demonstrate consistent performance at an appropriate skill level. During this course, students will continue to perform previously learned clinical skills at new and/or current clinical sites, demonstrating their ability to adjust to new protocols and clinical settings, and be evaluated for proficiency in these skills each semester. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4

**VAS - 452 Cumulative Clinical Skills in Vascular Ultrasound II**

After students master clinical skills in newly learned patient exams with a passing grade, they must continue to demonstrate consistent performance at an appropriate skill level. During this course, students will continue to perform previously learned clinical skills at new and/or current clinical sites, demonstrating their ability to adjust to new protocols and clinical settings, and be evaluated for proficiency in these skills each semester. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 4



**VAS - 999 Continuous Enrollment**

The requirement for Continuous Enrollment applies to all students admitted or re-admitted for fall 2015 or later. Doctoral students should follow program requirements for continuous enrollment and degree completion. Students who have not completed their degree requirements are required to maintain Continuous Enrollment through the college of their program until the degree is earned. Continuous Enrollment courses are graduate level courses set up by departments at Rush University for students who need to remain actively enrolled in the University while they finish their graduate work. Retake Counts for Credit: No. Pass/No Pass Grading Allowed: No. Credit(s): 1

600 S. Paulina St.  
Chicago, IL 60612  
(312) 942-7100  
[www.rushu.rush.edu](http://www.rushu.rush.edu)



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