University of Minnesota Rochester 2011–13 Catalog

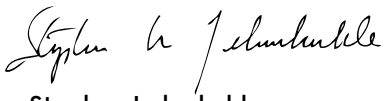
Note: The information in this catalog PDF is subject to change without notice. Many departments make changes in their degree requirements and course descriptions between updates of the online catalog and PDF. For the most current information, check with department offices or visit www.catalogs.umn.edu.

General Information

Chancellor's Welcome

I am excited to welcome you to the University of Minnesota Rochester. As the University of Minnesota's newest campus, our students, faculty, and staff are delighted to be part of your personal journey into a health sciences career. You will be challenged by a rigorous and comprehensive course of study, but the faculty will always use relevant health topics to enhance your understanding of the academic material. Your relationships with your fellow UMR students, UMR faculty, and our colleagues at Mayo Clinic, IBM, and the Rochester community will support you on this journey.

My promise is that if you are willing to work, we will design a personalized learning experience that will help you develop as a person and as a professional, and will empower you to pursue a health sciences career that best matches your interests and talents. It is an honor that you have chosen us to join you on this journey.



Stephen Lehmkuhle

Chancellor

University of Minnesota Mission

The University of Minnesota, founded in the belief that all people are enriched by understanding, is dedicated to the advancement of learning and the search for truth; to the sharing of this knowledge through education for a diverse community; and to the application of this knowledge to benefit the people of the state, the nation, and the world. The University's mission, carried out on multiple campuses and throughout the state, is threefold:

Research and Discovery

Generate and preserve knowledge, understanding, and creativity by conducting high-quality research, scholarship, and artistic activity that benefit students, scholars, and communities across the state, the nation, and the world.

Teaching and Learning

Share that knowledge, understanding, and creativity by providing a broad range of educational programs in a strong and diverse community of learners and teachers, and prepare graduate, professional, and undergraduate students, as well as non-degree-seeking students interested in continuing education and lifelong learning, for active roles in a multiracial and multicultural world.

Outreach and Public Service

Extend, apply, and exchange knowledge between the University and society by applying scholarly expertise to community problems, by helping organizations and individuals respond to their changing environments, and by making the knowledge and resources created and preserved at the University accessible to the citizens of the state, the nation, and the world.

Guiding Principles

In all of its activities, the University strives to sustain an open exchange of ideas in an environment that embodies the values of academic freedom, responsibility, integrity, and cooperation; that provides an atmosphere of mutual respect, free from racism, sexism, and other forms of prejudice and intolerance; that assists individuals, institutions, and communities in responding to a continuously changing world; that is conscious of and responsive to the needs of the many communities it is committed to serving; that creates and supports partnerships within the University, with other educational systems and institutions, and with communities to achieve common goals; and that inspires, sets high expectations for, and empowers the individuals within its community.

Rochester Campus Mission

The University of Minnesota Rochester promotes learning and development through personalized education in a technology-enhanced environment. The University of Minnesota Rochester empowers undergraduate and graduate students to be responsible for their own learning and provides appropriate support to prepare them to succeed in a global and multicultural society.

The University of Minnesota Rochester serves as a conduit and catalyst for leveraging intellectual and economic resources in Rochester and southeastern Minnesota through its signature academic, research, and public engagement programs in collaboration with other campuses of the University of Minnesota, other higher education institutions throughout the state and nation, governmental and non-profit organizations, and private enterprise.

—Campus Mission Statement, approved by the University of Minnesota Board of Regents, June 2009

Academic Program

The University of Minnesota Rochester (UMR) offers two undergraduate degrees, the bachelor of science in health sciences (B.S.H.S.) and the bachelor of science in health professions (B.S.H.P.). These health science programs prepare students for postbaccalaureate education in a broad spectrum of health science fields and health professions, including certification programs, professional schools, and graduate programs leading to health profession careers, as well as entry-level science and laboratory positions in industry, government agencies, and universities.

Accreditation

The B.S.H.S and B.S.H.P. programs are delivered exclusively at the Rochester campus and will be accredited through the University of Minnesota Twin Cities (UMTC) campus until the University of Minnesota Rochester achieves separate accreditation through the Higher Learning Commission of the North Central Association of Colleges and Schools.

A Downtown Campus

Named one of the best places to live in America by several publications, Rochester merges a cosmopolitan atmosphere with Midwestern hospitality. *Money Magazine* said it best: "One thing to remember about Rochester is that it has the sophistication of a larger metro area, but not the congestion or the complications." The city, with a population of 106,000, is located in the rolling farmland of southeastern Minnesota, approximately 75 miles from the Twin Cities. Home to the internationally renowned Mayo Clinic and to the world's largest IBM facility under one roof, the city attracts more than half a million visitors each year from all corners of the globe. In 2010, *Kiplinger's* named Rochester the number six pick for Best Cities for the Next Decade based on the high-tech, healthcare and hospitality industries that fuel the city's growth.

Downtown Rochester offers diverse and independent shopping, dining, and beautiful outdoor spaces. University Square, one of the hubs of the UMR campus, is in the heart of downtown. A skyway/subway system connects University Square to 318 Commons, the newly developed facility that provides additional academic and housing opportunities for UMR students. The skyway/subway system also connects to a plethora of hotels, restaurants, banks, shops, libraries, government offices, parking ramps, and the Mayo Clinic campus.

History of the Rochester Campus

The University of Minnesota, the state's land grant institution, was established in 1851 and now operates five campus locations: Minneapolis/St. Paul (Twin Cities), Crookston, Morris, Duluth, and Rochester. The University of Minnesota Rochester is the newest campus in the University of Minnesota system. While the University has been offering higher education opportunities in Rochester since 1966, UMR was formally established as a coordinate campus in December 2006.

In 2005, Minnesota's governor and legislature established the Rochester Higher Education Development Committee (RHEDC) to research, recommend, and develop a proposal for expanded higher education programs or institutions in the growing Rochester area. The Minnesota Office of Higher Education provided staff support, served as fiscal agent for state funds appropriated to the committee, and provided web access to information about the committee's activities as a courtesy to interested parties.

The Rochester Higher Education Development Committee produced a report to the governor and the legislature in January 2006 and included the following vision and recommendations:

> *The committee recommends the establishment of a world class higher education institution that leverages the University of Minnesota's research capability, in partnership with IBM, Mayo Clinic, and other industry leaders to build signature academic and research programs that complement southeast Minnesota's existing leadership roles in health sciences, biosciences, engineering, and technology. Education programs will provide application to economic activities via innovation, translational research, and clinical experiences. This institution will have a distinct identity and one governing entity. This institution will be the University of Minnesota Rochester.*

The governor, legislature, and Rochester community largely embraced the 50-page report and its recommendations. The Rochester City Council approved $11.3 million in sales tax dedicated to the development of a downtown campus for a University of Minnesota campus in Rochester. In 2006,

lawmakers approved $5 million in new annual operating funds for the University of Minnesota to expand its presence in Rochester and develop unique upper-division and graduate-level bioscience, health science, and technology programs not offered elsewhere in the state.

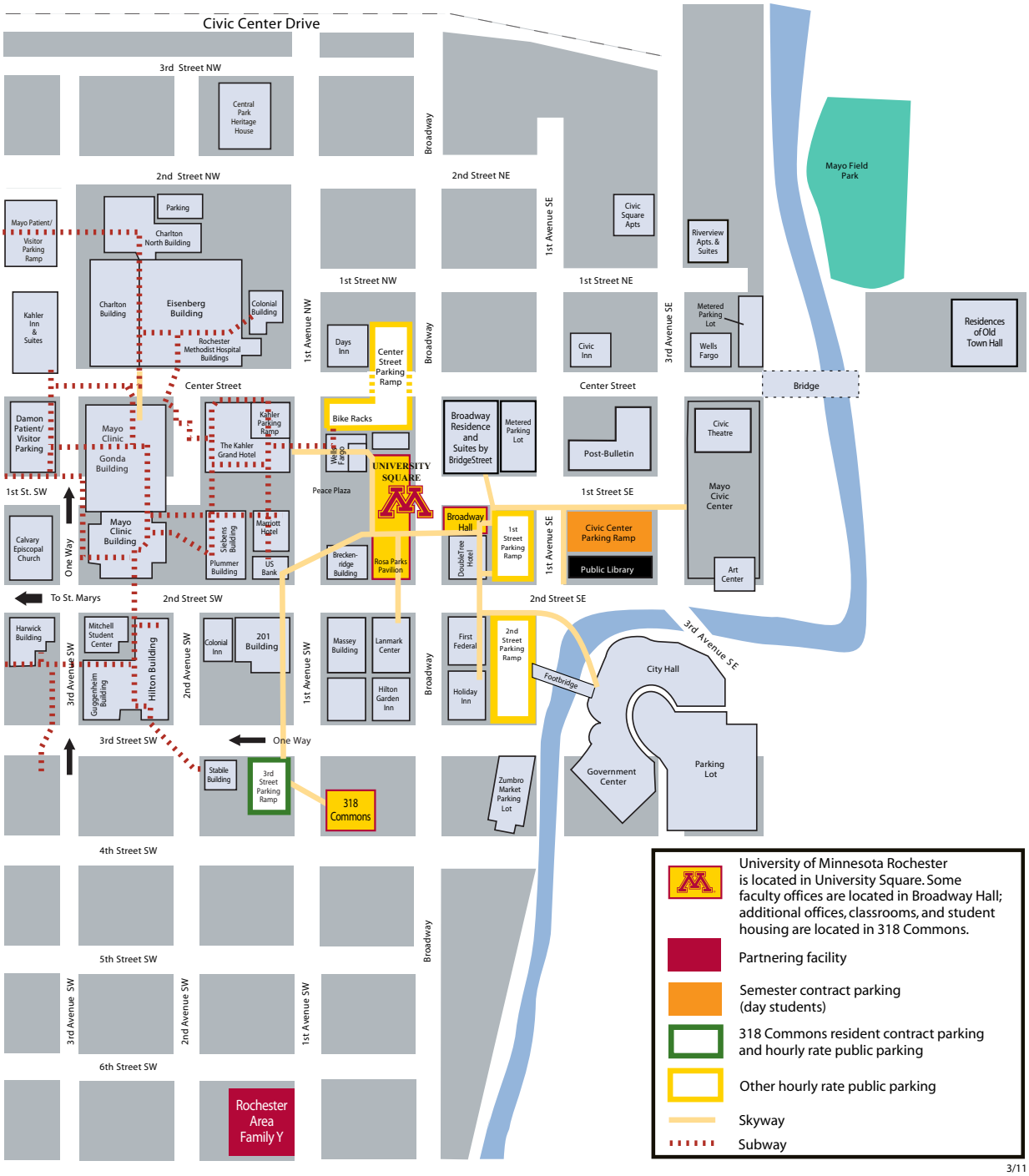
The current campus is designed to serve approximately 1,400 students; that capacity may be reached by 2015. The current campus master planning process will outline a long range plan for the continued expansion of the University of Minnesota Rochester. As of fall 2007, all classrooms and administration for the University of Minnesota Rochester were moved to the new leased campus facilities in downtown Rochester at 111 South Broadway. The 56,000 square foot space contains labs, offices, and classrooms in University Square, which is a former shopping center in close proximity to Mayo Clinic. Since that time the campus has expanded its classroom and administration to include Broadway Hall and 318 Commons. As enrollment continues to grow, so will the UMR campus.

Campus Map

UNIVERSITY OF MINNESOTA | ROCHESTER

111 South Broadway - Rochester, MN 55904
Telephone: 507-258-8000 or 1-800-947-0117
Website: www.r.umn.edu

The University of Minnesota Rochester is located on the 3rd and 4th floors of University Square. UMR Admissions is located on the 1st floor.



University Policies

Equal Opportunity and Discrimination Overview

The University of Minnesota shall provide equal access to and opportunity in its programs, facilities, and employment without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression.

Inquiries regarding compliance may be directed to the Director, Office of Equal Opportunity and Affirmative Action, University of Minnesota, 274 McNamara Alumni Center, 200 Oak Street S.E., Minneapolis, MN 55455, 612-624-9547, eoaa@umn.edu. Website: www.eoaa.umn.edu.

General

Equal opportunity means that every person has an equal chance to participate and succeed in employment or academic activities without discrimination based on membership in a protected class. Under state and federal law and University of Minnesota policy, individuals and groups are designated as protected class members by race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, and gender expression. The law, and basic fairness, demands that decisions about our employment and academic success should be made on the basis of merit.

Discrimination involves intended or unintended denial of recognition, power, privilege, and opportunity to certain people based on the groups to which they belong. Harassment on the basis of a person's protected classification is a violation if the conduct creates an intimidating, hostile, or offensive work or educational environment, or if it interferes with an individual's work or educational performance. Slurs or jokes and verbal or physical conduct motivated by an individual's protected class are unacceptable in the University educational and work community.

Any person seeking assistance in either resolving or making a complaint about any of the forms of discrimination, including harassment, should contact the Office of Human Resources at 507-280-4650 or the University of Minnesota Office of Equal Opportunity and Affirmative Action (EOAA) at 612-624-9547. Students may also seek assistance from Student Affairs at 507-258-8457.

Age

The Age Discrimination in Employment Act (ADEA) prohibits age discrimination against older workers (those 40 years of age or older) in all aspects of employment. The Minnesota Human Rights Act more broadly protects all people over the age of 18 years from age discrimination as students and employees.

It is unlawful to discriminate against an employee or applicant on the basis of age with respect to any term or condition of employment including but not limited to hiring, firing, promotion, layoff, compensation, benefits, job assignments, and training.

Disabilities

The Americans with Disabilities Act and other related laws prohibit employers, units of government, and labor unions from discriminating against qualified individuals with disabilities as employees, students, and users of public accommodations and services.

An individual with a disability is a person who has a qualifying physical or mental impairment that substantially limits one or more major life activities (walking, eating, breathing, sleeping, etc.), or who is regarded as having such impairment. The person must be qualified to perform the essential functions of the job or the academic program with or without reasonable accommodation. Employment and academic standards are not lowered.

Gender

Making decisions on the basis of someone's gender, or sex, is illegal under state and federal law. In employment, this includes decisions related to hiring, wages, terminations, promotions, leaves, and benefits. In education, this includes decisions related to admissions and grading. Both men and women are protected from discrimination.

Race, Color, and National Origin

Race discrimination is defined as unfair treatment of an individual based on characteristics traditionally associated with race—such as skin color, hair texture, and facial features. It also includes making decisions or taking adverse actions against an employee or student because of preconceived negative assumptions, biases, or judgments concerning race or color.

As an international institution, the University is enhanced by its many students and employees who reflect a wide variety of national origins. No individual can be denied equal opportunity because of birthplace, ancestry, or cultural or linguistic characteristics common to a specific ethnic group or national origin.

Religion and Creed

The University may not discriminate in any aspect of the work or educational environment on the basis of religion or creed. Religion and creed can have the same or equivalent meaning. They include all religious and spiritual observances, practices, and sincerely held beliefs.

As a public entity, the University cannot be in a position of supporting, or appearing to support, one religion or spiritual practice. Today's world finds an increasing number of religions in our society. The University has long supported adjustment of work and exam schedules for staff and students when necessary to permit sincere religious practices.

The policy on Student/Employee Absences for Religious Holidays and the Calendar of Religious and Spiritual Festivals and Observances are available by links to the Office of Human Resources and the Religious and Spiritual Resource Directory on the EOAA web page, www.EOAffAct.umn.edu.

Sexual Harassment

It is the University's goal to maintain a work environment free from sexual harassment. The Board of Regents policy on sexual harassment applies to all members of the University community. The policy defines sexual harassment as:

> *unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of sexual nature when: 1) submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment or academic advancement in any University activity or program; 2) submission to or rejection of such conduct by an individual is used as the basis of employment or academic decisions affecting this individual in any University activity of program; or 3) such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program.*
>
> —Sexual Harassment Policy, adopted by the Board of Regents, December 11, 1998, Section I, subd. 1

Sexual harassment can occur between members of the same sex, and the victim as well as the harasser may be a woman or a man. If harassment is believed to be occurring, whenever possible the victim should directly inform the harasser that the conduct is unwelcome and must stop. The victim's supervisor, administrator, or faculty member can also be informed to help prevent future incidents and to prevent retaliation. These people must take timely and appropriate action when they know or have reason to know that sexual harassment may be occurring.

Sexual Orientation, Gender Identity, and Gender Expression

University of Minnesota policy and state law prohibit discrimination on the basis of sexual orientation, gender identity, and gender expression. The Minnesota Human Rights Acts defines sexual orientation as:

> *...having or being perceived as having an emotional, physical, or sexual attachment to another person without regard to the sex of that person, or having or being perceived as having an orientation for such an attachment, or having or being perceived as having a self-image or identity not traditionally associated with one's biological maleness or femaleness.*
>
> —Minnesota Human Rights Acts, Section 363.01, Subd. 45

At the University of Minnesota, this includes gay, lesbian, bisexual, and transgender people.

In compliance with University policy on equal access to its programs, facilities, and employment, University policy also provides benefits to spouses and registered domestic partners of University employees and students.

Additional Information

More information about Equal Opportunity may be found in the booklet, Equal Opportunity and Affirmative Action at the University of Minnesota. A copy may be requested from Twin Cities Office of EOAA at 612-624-9547 or the UMR Office of Human Resources at 507-280-4650. It is also available online at www.eoaffact.umn.edu.

Reporting Bias or Hate Crimes

General

Members of the University of Minnesota community have the right to participate and succeed in employment or academic activities without discrimination against them by any agent or organization of the University for reasons of actual or perceived race, color, creed, religion, national origin, gender, identification, age, marital status, disability, public assistance status, veteran status, and/or sexual orientation. The University of Minnesota Rochester does not tolerate such incidents and will seek resolution of such matters.

Any student, acquaintance of a student, or group within the University community who has experienced bias, discrimination, or hostility, should report it by completing the *University Bias/Discrimination/Harassment Reporting* form at www.eoaffact.umn.edu/services/biasreportform.html.

What is a Bias Incident or Hate Crime?

Bias incidents or hate crimes are expressions of disrespectful bias, hate, harassment, or hostility against an individual, group, or their property because of the individual or group's actual or perceived race, color, creed, religion, national origin, gender, identification, age marital status, disability, public assistance status, veteran status, and/or sexual orientation can be forms of discrimination. Expressions vary and can be in the form of language, words, signs, symbols, threats, or actions that could potentially cause alarm, anger, fear, or resentment in others, or that endanger the health, safety, and welfare of a member or members of the University community, even when presented as a joke.

Hate crime

Minnesota does not have a "hate crimes law." Instead, the legislature has identified particular crimes that—if perpetrated because of the victim's actual or perceived race, color, religion, sex, sexual orientation, disability, age, or national origin—trigger heightened penalties. Included crimes are criminal damage to property, assault, and harassment/stalking.

Bias incidents not under the jurisdiction of the University of Minnesota

Bias incidents which impact students, faculty, and staff, but occur beyond the campus should be reported to local law enforcement authorities and to the University by completing the *University Bias/Discrimination/Harassment Reporting* form at www.eoaffact.umn.edu/services/biasreportform.html.

Conduct and Free Speech

The conduct underlying some bias incidents might be protected speech, however, it may still violate the University of Minnesota's commitment to civility and diversity. Constitutional rights will continue to be protected and University community members will also exercise the right to speak, engage in educational dialogue, and seek a constructive response rooted in the University's mission and vision.

Smoke-Free Campus Policy

Smoking is prohibited in all buildings of the University of Minnesota Rochester campus. Smoking is also prohibited in the Peace Plaza adjacent to UMR.

Email

A University assigned student email account will be the University's official means of communication with all students. Students are responsible for all information sent to them via their University assigned email account. If a student chooses to forward their University email account, he or she is responsible for all information, including attachments, sent to any other email account.

Extracurricular Events During Finals

No extracurricular events requiring student participation may be scheduled during finals week. Exceptions to this policy may be granted by the chancellor. Any exemption granted pursuant to this policy shall be honored, and students who are unable to complete course requirements during finals week shall be provided an alternative and timely opportunity to do so. Persons seeking an exception to this policy should contact the Office of the Chancellor.

Class Schedule

The *Class Schedule* lists course offerings with class times, rooms, instructors, and prerequisites. It is available online at One Stop, www.r.umn.edu/onestop.

Admissions and Registration

Admissions

The Admissions Office is the primary source of information about the University for prospective students. For information about admissions, academic programs, student services, and education resources at the University of Minnesota Rochester, contact UMR at:

Admissions Office

University of Minnesota Rochester
300 University Square
111 South Broadway
Rochester, MN 55904

877-280-4699 (toll free, continental United States)
507-258-8687 (Rochester)

Website: www.r.umn.edu/bshs
Email: ApplyUMR@umn.edu

Campus Visits and Tours

Campus visit options include a personalized individual appointment or participation in a campus visit day. The Admissions Office accommodates campus visits between 9 a.m. and 3 p.m., Monday through Friday, and is closed on University holidays. To arrange a campus visit, call 877-280-4699, email ApplyUMR@umn.edu, or visit r.umn.edu/visit.

Application Review Process

Admission to the University of Minnesota Rochester is competitive. Factors that have an impact on the level of competition and placement are the number of applications received, the academic qualifications of the applicant pool, and the number of spaces available in the degree program.

Enrolling an academically qualified, diverse student body is essential to the University's mission. The academic and social environment of the campus is greatly enhanced by a diverse student body, and students are better prepared to thrive in a multicultural world.

Because of the nature of the integrated curriculum, the standards of academic performance required, and the need to maintain the small size of the college, a selective admission policy is necessary. Success with high school preparatory courses, ACT and/or SAT test scores, educational objectives, extracurricular activities, and other relevant information are all taken into consideration in the admissions decision.

Applications for freshman applicants are reviewed on a rolling basis beginning December 15. Applicants may obtain an application online at r.umn.edu/apply or request an application by contacting the Admissions Office at 877-280-4699. Each application submitted must be accompanied by a nonrefundable fee, payable by check or money order to the University of Minnesota Rochester. (Please do not send cash through the mail.)

All admitted applicants are required to confirm their acceptance with a $200 nonrefundable confirmation fee due on or before May 1. The confirmation fee reserves the student's enrollment in the class, and a portion will be applied to the student's fall semester payment. Students are encouraged to send their confirmation fees as soon as possible.

Each application is reviewed individually and admissions decisions are based on an overall assessment of academic requirements and additional review factors, as well as the student's academic interests.

Academic Requirements

- **Successful completion of a college preparatory curriculum**—During high school, students should complete the following:
  - **Four years of English**, with emphasis on writing, including instruction in reading and speaking skills and literary understanding and appreciation reading; and a speech course, such as introductory speech, public speaking, and debate
  - **Three years of mathematics**, including one year each of elementary algebra, geometry, and intermediate algebra (UMR highly recommends four years of mathematics and completion of a mathematics course during the senior year of high school.)
  - **Three years of science**, including at least one year each of biological and physical science, including laboratory experiences (UMR highly recommends four years of science.)
  - **Three years of social studies**, including U.S. history (Applicants who are missing this requirement will not be denied admission if they are otherwise admissible.)
  - **Two years of a single foreign language** *(*Applicants who are missing this requirement will not be denied admission if they are otherwise admissible.)
- **Standardized test scores**—Freshmen must submit scores from the American College Testing (ACT) Assessment Program or the College Board's SAT Reasoning Test. As a basis for admission, applicants' ACT/SAT scores should clearly indicate strength in their aptitude and preparation. Applicants should complete the ACT/SAT assessment during one of the national testing periods (preferably spring or summer of the applicant's junior year of high school or early fall of their senior year of high school) and have their assessment report sent to UMR (ACT code 2154, SAT code 5877)
- **High school and college grade point averages (GPAs)**—If a student did not complete high school, a GED (General Equivalency Diploma) may be accepted in lieu of high school transcripts.
- **Earned GPA**—in STEM (science, technology, engineering, math) and English composition courses
- **Application essay**—Applicants must submit a typed essay (of approximately 250 to 750 words) on one of the options listed below. The application essay provides an opportunity for Admissions Office staff to become acquainted with the student as a scholar and a person, apart from courses, grades, test scores, and other objective data. It will also demonstrate the student's ability to organize thoughts and express him/her self
  - **Option A**—Describe a person or experience that influenced your decision to pursue an education in health sciences.
  - **Option B**—Describe the qualities you possess that will help you be successful as a student and a professional in the field of health sciences.

Additional Applicant Review Factors

- Involvement in health science related volunteer or employment opportunities
- Submitted letter of recommendation or teacher evaluation form (strongly recommended but not required)
- ACT/SAT writing test results
- Exceptionally rigorous academic curriculum to include courses that exceed the college preparatory curriculum (honors, Advance Placement, International Baccalaureate, and/or college level courses)
- Outstanding high school or community involvement
- Work experience, paid or unpaid
- Participation in extracurricular college preparatory programs (e.g. Migrant Education Program (MEP), Post Secondary Enrollment Option (PSEO), Talent Search, University of Minnesota Talented Youth Math Program (UMTYMP), Upward Bound, and other programs)
- Evidence of exceptional talent or ability in artistic pursuits, scholarly research, or leadership
- High school rank percentile (Students from non-ranking schools and those with GED or other high school equivalency scores will be given full consideration.)
- Evidence of exceptional motivation, maturity, or responsibility
- Evidence of having overcome social, economic, or physical barriers to educational achievement
- Evidence that enrollment would enhance the cultural, gender, age, economic, racial, or geographic diversity of the student body
- Extenuating circumstances

Freshmen With College Credit

Former PSEO (Post Secondary Enrollment Options) Students—Students who have acquired college credits from regionally accredited post secondary institutions through Minnesota's Post Secondary Enrollment Options Act must provide the UMR Admissions Office with an official transcript of courses taken from a college or university during their junior and/or senior year in high school. Former PSEO students must follow all freshmen application procedures and deadlines.

Special Admission Status

Non-Degree-Seeking Students—Non-degree-seeking student enrollment status is reserved for students—whether part- or full-time—who are not degree candidates, who are granted permission to enroll on a term-by-term basis, and who have access to courses if space is available. Non-degree-seeking student status is reserved for three categories of students: 1) adults taking courses of special interest; 2) students who are admitted with probationary status and who will later become regular degree candidates; 3) faculty and staff.

Deferred Admission—Students choosing to delay their matriculation into UMR after being admitted may defer admission. To seek deferred admission, students must first complete all admissions procedures. Once admitted, they must request deferred status in writing. After deferment has been granted, the $300 nonrefundable confirmation fee will reserve space for up to one year.

International Students—International students (non-U.S. citizens who are not U.S. permanent residents) should contact the UMR Admissions Office at 877-280-4699 to speak with an admissions representative.

Senior Citizens—Minnesota residents age 62 years or older may be allowed to enroll in classes at a minimal cost when space is available after tuition-paying students have been accommodated. Persons wishing to take a course for no credit pay only materials or other special fees. Those seeking credit for a course pay $10 per credit as well as materials or other special fees. Contact the Admissions Office for more information.

Multi-U Enrollment

A consortium agreement among the University of Minnesota campuses allows students planning to earn their degree at their home college to attend another University of Minnesota college. Requests to enroll through the consortium agreement should include academic reasons supported by the student's adviser or extenuating circumstances such as a student's need to be close to a medical facility or family in a time of crisis. Registration and applications are processed through the home college. Tuition and fees vary according to rates at the instructional unit(s).

Nonresidents and Reciprocity

Under reciprocity agreements, residents of North Dakota, South Dakota, Wisconsin, and Manitoba who attend UMR may pay a specially-designated tuition rate. To obtain current figures and necessary forms, contact the student's home state higher education services office, the Admissions Office, or the appropriate office listed below:

- **North Dakota residents**—Reciprocity Program, North Dakota Board of Higher Education, 10th Floor, State Capitol Building, Bismarck, ND 58501
- **South Dakota residents**—Reciprocity Program, South Dakota Board of Regents, Box 41, Brookings, SD 57007
- **Wisconsin residents**—Reciprocity Program, Wisconsin Higher Educational Aids Board, 137 East Wilson Street, Madison, WI 53707

As part of its effort to make a high quality UMR education available to students from across the country and around the world, UMR charges the same tuition to both residents and non-residents.

Transfer Admission

Minnesota's public colleges and universities are working to make transfer easier. Students seeking to transfer should plan ahead, ask questions, and use pathways created by transfer agreements.

Definition—Applicants who have enrolled at a postsecondary institution after high school graduation are considered transfer students.

Application Review Process—Admission to the University of Minnesota Rochester is competitive. UMR requires a cumulative grade point average of at least 2.50

(on a 4.00 scale) for applicants to be considered for admission. Transfer applicants must have successfully completed at least 75 percent of all college coursework attempted. Applicants should also have completed designated prerequisite courses for certain degree programs.

Admission decisions are based on an applicant's demonstrated potential for successfully completing the program to which they apply. All applications are reviewed holistically and individually.

Applicants who have completed less than 30 college credits at the time of application will be considered for admission using a combination of transfer and freshman admission criteria. High school and college transcripts and ACT or SAT scores will be reviewed.

Transfer students who graduated from high school after 1986 and have not earned a bachelor's degree are subject to all academic requirements for admission, including completion of college preparatory curriculum in high school (see Academic Requirements section).

Transfer applicants are subject to a priority application deadline of November 1 for spring admission and May 1 for fall admission.

Transfer Application Procedures

Applications—Complete the University of Minnesota Rochester application, available online at www.r.umn.edu/apply.

Change of College or Campus—The Office of Admissions at the University of Minnesota Rochester processes admission applications from current and former University of Minnesota (Twin Cities, Duluth, Morris, or Crookston campus) students who wish to transfer into a UMR undergraduate degree program.

Students may download the *Change of College or Campus* form online: http://onestop.umn.edu/forms. Change of College or Campus students are still subject to application deadlines, and must submit additional application materials, including the application essay. For more information, please contact the UMR Office of Admissions. (1-877-281-4699, or ApplyUMR@umn.edu).

Transcripts—Applicants must arrange for official transcripts to be sent from every postsecondary institution they have attended (including coursework taken as PSEO or CITS), whether or not they successfully completed coursework at those institutions. To be regarded as official, transcripts must bear the original signature of the registrar or the seal of the institution or must be college-certified or printed on security paper. Transfer applications must also submit an official final high school transcript. All transcripts must have been issued within the last year.

Transfer Credit Evaluation

When students are admitted, their previous college record will be evaluated to determine which of the courses they have taken at other institutions will transfer to the University of Minnesota Rochester.

Registration and Orientation

Registration and up-to-date registration publications and information are available on the One Stop website, www.r.umn.edu/onestop.

New Students

Designated registration periods are held on campus for entering first-year students and transfer students who plan to enroll fall semester. Student success coaches assist new students with academic planning, course selection, enrollment, and orientation to the campus.

New Student Orientation

UMR offers a comprehensive new student orientation program, which provides information on UMR's educational opportunities, services, and resources. New Student Orientation is held prior to the beginning of the academic year. Students entering UMR spring semester also take part in orientation activities prior to the beginning of the semester.

Current Students

Registration for students currently attending UMR occurs during the previous term. Registration instructions and materials are issued from the Student Resource Center using the official University email account and the web. Students can begin to register according to the chart provided at http://onestop.umn.edu/registration/prepare/times/time_tables.html.

Re-Enrollment

UMR students who interrupt their enrollment for less than one year through the leave of absence procedure must be re-enrolled through the Registrar's Office before they can register for classes. Those who interrupt their enrollment for more than one year need to apply for readmission through the Admissions Office. Former Rochester students are considered for readmission on the basis of their past performance as space is available. Former Rochester students who interrupted their enrollment to transfer to another college must submit official transcripts from that institution with their application for readmission.

Withholding Permission to Register

UMR reserves the right to deny students permission to register for a subsequent term and the right to withhold the release of grades, transcripts, or diplomas if students have not complied with academic or disciplinary regulations or financial obligations to the University. A student who believes that the policy of withholding transcripts, grade reports, diplomas, or permission to register has been unjustly applied in a particular case may appeal to the assistant vice chancellor for student affairs for a resolution.

Change in Registration

Cancel/add procedures and deadlines are available online at http://onestop.umn.edu/calendars/cancel_add_refund_deadlines/index.html. After the first week of the semester, faculty permission is required for all course additions. Student Scholastic Committee and faculty approval is required for changes in grading systems and for course additions after the end of the second week of the semester.

Withdrawal from, or changes to, classes may affect refunds, grants-in-aid, loans, and scholarships. Students who receive any type of financial assistance should check with One Stop staff before withdrawing from a class. The refund schedule is published online.

Withdrawals

Students may withdraw from full-semester courses without special permission through week nine of the semester. If a student withdraws from a course during the first two weeks of classes, that course registration is not recorded on the student's transcript. If a student withdraws during week three through week nine, a symbol of W appears on the transcript. Detailed course cancellation deadlines are online at http://onestop.umn.edu/calendars/cancel_add_refund_deadlines.

Withdrawal after the cancellation deadline requires Student Scholastic Committee approval and will be granted only for extenuating nonacademic reasons.

Discretionary Course Cancellation

Each student, during his or her undergraduate enrollment at the University of Minnesota, may withdraw from a course after the deadline only once, up to and including the last day of class for that course, without proof of extenuating circumstances. This "one-time-drop" must be processed at the Registrar's Office, and a W appears on the transcript.

Withdrawing from the University

Students who choose to discontinue their enrollment after registering for classes must contact their student success coach. Cancellation processing includes notification of other campus offices and may involve financial aid repayment. Final clearance for cancellation takes place in the Registrar's Office. Until an official notice of cancellation is received in the Registrar's Office, spaces in the classes are reserved, and tuition and fee charges continue to accrue regardless of nonattendance.

Access to Student Educational Records

In accordance with Board of Regents policy on access to student records, information about a student generally may not be released to a third party without the student's signed release. (Exceptions under the law include state and federal education and financial aid institutions.) The policy also permits students to review their educational records and to challenge the contents of those records.

Some student information, including name, address, electronic (email) address, telephone number, dates of enrollment and enrollment status (full-time, part-time, not enrolled, withdrawn and date of withdrawal), college and class, major, adviser, academic awards, honors received, and degrees earned, is considered public or directory information. Students may prevent the release of public information. To do so, they must complete a *Request to Suppress Directory Information* form in the Student Resource Center.

Students are notified annually of their right to review their educational records. Board of Regents policy, including a directory of student records, is available for review at the Student Resource Center. Inquiries may be directed to the administrator of the unit responsible for maintaining the records in question or to the registrar.

Expenses

All University of Minnesota Rochester fees, deposits, and refund policies are subject to change without notice. Current information may be obtained from One Stop Student Services or online (www.r.umn.edu/onestop/index.htm). Actual expenses may vary due to personal choices.

Refunds

In response to the federal Higher Education Amendments of 1992, the University of Minnesota has established a refund policy that follows the federal regulations with flexibility to serve both day school and continuing education students. There is an eight-week refund period.

Week one of both fall and spring semesters ends the following week, on the same day of the week that classes began. Students are entitled to a full or partial refund or credit of tuition, student services fees, and special course fees as described in the following paragraphs.

Any aid that has been received by the student is recovered first, as required by the aid programs involved. Refunds to or collection of the balance from the student depend upon remaining funds and outstanding obligations to the University. Refund examples are available upon request by contacting One Stop.

Students participating in approved study abroad, internships, or other individual projects at remote off-campus locations may be granted a waiver of some student fees (with the exception of nonrefundable fees) for the period of their absence from the campus. Students should contact the registrar for further information on student services fee waivers.

Refund Schedules

Refund schedules, including those for May and summer sessions, can also be found on the web at http://onestop.umn.edu/calendars/cancel_add_refund_deadlines.

Estimated Cost of Attendance

Per Year

The approximate yearly academic cost for a UMR student is currently $23,614, which includes tuition, fees, laptop computer, and an estimate for textbooks and supplies. Not included are personal expenses such as clothing, travel, and recreation, which are best estimated by the individual student. (Reciprocity tuition rates vary from state to state.)

Per Semester

A breakdown of anticipated expenses per semester for a typical student in 2011–12 follows:

Tuition (13 or more credits)	$5,661
Room and board	$3,864
Mandatory fees (including laptop computer)	$685
Textbooks and supplies	$500
Total	$10,710

Resident and Nonresident

Both Minnesota residents and nonresidents are charged $5,661 tuition per semester. Students from states with reciprocity agreements with Minnesota may receive additional assistance through their home state.

Tuition Band

Tuition at all University of Minnesota institutions is banded. UMR bands tuition at 13 credits. Students will be charged for 13 credits no matter how many credits in which they enroll. Students may request a reduced course load. If approved, students would pay $435.46 per credit.

Fees

Application Fee—A nonrefundable fee of $35 must be submitted with an application for admission to UMR.

Confirmation Deposit—A deposit of $200 is necessary for students to demonstrate their intent to enroll at UMR.

Credit by Examination Fee—A fee of $50 per credit is charged to students seeking credit for acquired knowledge that they believe is comparable to that required to complete a specific course offered at UMR.

Durable Goods Fee—A fee of $400 is charged to undergraduates enrolled at UMR to cover the costs of the laptop students are provided.

Health Insurance Fee—All students who are registered for 6 credits or more are required to provide proof of health insurance. Students who are unable to provide such proof are required to carry insurance through a group plan provided by an outside agency contracted through University Health Services. The annual cost for the insurance premium is $950. Students from foreign countries and those who are unable to provide proof of health insurance are required to purchase the University group insurance or they may seek a waiver based on proof of equivalent coverage. For more information call the Student Health Benefits Office at 612-624-0627 or visit www.shb.umn.edu/rochester/students.htm.

Housing Deposit—A deposit of $100 is necessary for students to demonstrate their intent to live on campus.

Parking Fee—A discounted "Flex Parking Lease" is available to students enrolled in six or more weekday credits at a rate of $120 per semester. Students may purchase a parking card ($30 activation fee) for the roof level of the Civic Center Parking Ramp and will be billed directly from Lanier Parking (not the University).

Rochester Campus Fee—The $125 UM Rochester Campus Fee covers student wireless access throughout campus buildings, printing access to Information Commons, classroom technology, ITV access for distance learning, student activities, orientation and welcome week activities, and commencement.

Student Services Fee—All students registered for six or more credits are required to pay a fee of $160. The fee contributes to many areas of campus life including providing support for the fitness center, physical and mental health, Rochester Student Association, learning abroad, and academic support. More information is available at www.r.umn.edu/onestop/students/finances/costs-tuition.

Transcript Fees—Unofficial transcripts are available online at no cost to currently registered students. If a student has no financial holds on his/her record, official transcripts are issued for a fee at the student's signed request. Transcripts are processed in two to three working days. Rush and fax service are also available at a higher rate. For current prices, students should contact the Registrar's Office.

U-Card Replacement Fee—A fee of $25 is charged to replace a U-Card, the University's identification card. The fee applies to students who have lost or damaged their cards.

Payment

Students must pay tuition, student services fees, special course fees, and other financial obligations by the due date shown on the billing statement. It is the student's obligation to pay bills on time in order to avoid late fees.

Installment Option Fee

Students may elect to pay their tuition and fees in three installments. Under this plan, one third of the total amount due for the semester must be paid in each installment. A $35 installment fee is added to each payment. Students who do not pay through the installment plan are expected to pay their bill in full by the due date on the first bill produced for the term.

Consequences of Late Payment

Students who fail to pay at least one third of the amount due on their first bill of the term are assessed a late fee. Accounts not paid in full by the due dates on all subsequent bills are assessed an additional late fee each time a due date passes. In addition, holds may be placed on the student's record preventing him or her from registering, obtaining official transcripts, or taking advantage of other university services. For more information, see http://onestop.umn.edu/finances/pay/billing_statement/statement_and_payment_guidelines.html.

Financial Aid

The University of Minnesota Rochester's financial aid program is dedicated to providing students with the most comprehensive and simplified methods of financial aid delivery. The program is designed to provide financial assistance to as many students as possible in an equitable and consistent manner. For more information on financial aid, visit One Stop at www.r.umn.edu/onestop.

Application Procedure

The priority deadline to complete and submit the Free Application for Federal Student Aid (FAFSA) or Renewal FAFSA is March 1; however, students are encouraged to complete the application as soon as they are able.

UMR's FAFSA code is 003969 (listed as University of Minnesota Twin Cities).

Eligibility Requirements

The FAFSA is the only application needed to receive most forms of federal, state, or institutional financial aid at UMR. Certain scholarships require a separate application. It is the responsibility of the student to ensure compliance with each scholarship's requirements.

The type and amount of financial aid awarded to students is based on financial need and/or the eligibility criteria of individual scholarship, grant, loan, and employment programs. The student's Expected Family Contribution (EFC) and financial need is determined by federal methodology based on information provided in the FAFSA. The EFC determines what the student/parent(s) can reasonably be expected to pay toward the student's educational costs. The University uses the EFC to determine financial need and eligibility for federal, state, and institutional financial aid based on federal, state, and institutional formulas, criteria, policy, regulations, and the availability of funds under the direction of the University administration.

Unusual Circumstances

If a family's financial situation changes after the FAFSA has been received by the federal processor, the student should contact One Stop at 507-258-8457.

Death, separation, divorce, unemployment, loss of employment, unusual medical or dental expenses, tuition expenses for children attending a private elementary or high school, or loss of non-taxable income or benefits are unusual circumstances that may affect financial aid eligibility.

A One Stop employee can help determine whether unusual circumstance adjustments should be made to the processed FAFSA by requesting the appropriate documentation.

Satisfactory Academic Progress (SAP)

Each term, the Financial Aid Office is required by federal and state regulations to determine if students receiving financial aid are making Satisfactory Academic Progress. To maintain eligibility for federal, state, and institutional aid, students must meet the University's academic progress standards for financial aid recipients.

More information can be found at http://onestop.umn.edu/finances/financial_aid/eligibility/sap/index.html.

Types of Scholarships and Grants

Unless otherwise noted, a student must be enrolled for at least 12 credits to receive scholarships and grants.

Minnesota State Grant

The Minnesota State Grant is awarded to students who are pursuing their first undergraduate degree and are Minnesota residents attending an eligible Minnesota institution. This grant is based on financial need and is limited to eight semesters or the equivalent of four years at full-time status. Students must be enrolled for 15 credits to receive the maximum Minnesota State Grant. When students are enrolled for fewer than 15 credits, the Minnesota State Grant will be prorated.

Pell Grant

This grant is awarded to students who are pursuing a first undergraduate degree or teaching certification. The actual Federal Pell Grant award depends on the cost of education, the student's financial need and enrollment status, and the availability of funds.

Shakopee Mdewakanton Sioux Community Endowed Scholarship

The Shakopee Mdewakanton Sioux Community (SMSC) Endowed Scholarship was established in 2008 through a generous gift from the Shakopee Mdewakanton Sioux Community. The SMSC scholarship program is designed to recruit and retain talented American Indian students with demonstrated financial need to the University of Minnesota. The program is administered by the University's Office for Equity and Diversity. Visit www.academic.umn.edu/equity/awards/smsc.html for more information.

Supplemental Educational Opportunity Grant (SEOG)

The Federal Supplemental Educational Opportunity Grant is restricted to undergraduate students. This grant is based on financial need, enrollment status, the availability of funds, and the amount of other aid the student is receiving.

U Promise Scholarships

Under the University of Minnesota Promise Scholarships (U Promise), eligible new Minnesota resident undergraduates with a family income up to $100,000, who enroll at any of the University's five campuses, will be guaranteed a U Promise Scholarship.

Eligible new freshmen and transfer students enrolling for the first time in the fall of 2011 and beyond will receive a guaranteed, multi-year, U Promise Scholarship:

- Eligible new freshmen will receive a guaranteed need-based scholarship, ranging from $500 to $3,500 each year, for four years.

- Eligible new transfer students will receive a guaranteed, need-based scholarship, ranging from $500 to $1,500 each year, for two years.

Students who are Minnesota residents are automatically considered for U Promise when they take two steps:

- Apply for admission to any of the University of Minnesota campuses
- Submit the Free Application for Federal Student Aid (FAFSA) at www.fafsa.ed.gov

For more details and eligibility requirements, see www.upromise.umn.edu.

UMR Scholarships

University scholarships are not disbursed until a student is officially registered and the refund period has expired.

Endowed Scholarships

Neil P. Anderson Scholarship—Awarded to new, full- and part-time students pursuing undergraduate or professional school degrees in the health sciences who have work and/or volunteer experience demonstrating community involvement, demonstrated financial need, and a cumulative GPA of 3.00 or higher in high school or prior postsecondary academic coursework. The scholarship may be guaranteed for multiple years at the discretion of the scholarship selection committee and as long as student meets all eligibility requirements.

Margaret and Robert L. Benson Scholarship—Awarded to new, full- and part-time students pursuing undergraduate or professional school degrees in the health sciences, who have demonstrated financial need, and who have a cumulative GPA of 3.00 or higher in high school or prior postsecondary academic coursework. The scholarship may be guaranteed for multiple years at the discretion of the scholarship selection committee and as long as student meets all eligibility requirements.

Jim and Carmen Campbell/Wells Fargo Scholarship—Awarded to new, full-time undergraduate or professional school degree students who have work and/or volunteer experience demonstrating community involvement.

Ann and Gus Chafoulias Scholarship—Awarded to new, full-time undergraduate or professional school degree students who have a cumulative GPA of 3.00 or higher in high school or prior postsecondary academic coursework. The scholarship may be guaranteed for multiple years at the discretion of the scholarship selection committee and as long as student meets all eligibility requirements.

Jim and Sue Clausen UMR Scholarship—Awarded to any full-time undergraduate or professional school degree students who have demonstrated financial need. In accordance with the donor's wishes, a plus factor will be given to applicants from Steele and Olmsted counties in Minnesota, and then to students from the state of Minnesota.

Lara E. Fischer Scholarship—Awarded to new, full-time undergraduate or professional school degree students who have work and/or volunteer experience demonstrating community involvement, and demonstrated financial need. The scholarship may be guaranteed for multiple years at the discretion of the scholarship selection committee and as long as student meets all eligibility requirements.

Dr. Joseph A. and Josephine W. Gibilisco Scholarship—Awarded to new, full-time undergraduate or professional school degree students with demonstrated financial need. The scholarship may be guaranteed for multiple years at the discretion of the scholarship selection committee and as long as student meets all eligibility requirements.

John and Rita Hunt Scholarship—Awarded to new, full-time undergraduate or professional school degree students with demonstrated financial need who have a cumulative GPA of 3.00 or higher in high school or prior post-secondary academic coursework.

Dick and Nancy Knowlton Scholarship—Awarded to new, full-time undergraduate or professional school degree students who have work and/or volunteer experience demonstrating community involvement, and who have a cumulative GPA of 3.00 or higher in high school or prior post-secondary academic coursework

H. Bryan Neel III, Health Sciences Education Scholarship—Awarded to new, full- and part-time students pursuing undergraduate or professional school degrees in the health sciences who have a cumulative GPA of 3.00 or higher. The scholarship may be guaranteed for multiple years at the discretion of the scholarship selection committee and as long as student meets all eligibility requirements

Gregg S. K. and Laverne F. Orwoll Scholarship—Awarded to new, full-time undergraduate or professional school degree students with demonstrated financial need. The scholarship may be guaranteed for multiple years at the discretion of the scholarship selection committee and as long as student meets all eligibility requirements.

Rochester Area Alumni and Friends of the University of Minnesota UMR Scholarship—Awarded to new, full-time undergraduate or professional school degree students with demonstrated financial need who have a cumulative GPA of 3.00 or higher in high school or prior postsecondary academic coursework.

Dr. John L. and Marilyn D. Stewart Scholarship—Awarded to new, full-time undergraduate students with demonstrated financial need who have a cumulative GPA of 3.00 or higher in high school or prior postsecondary academic coursework. The scholarship may be guaranteed for multiple years at the discretion of the scholarship selection committee and as long as student meets all eligibility requirements.

James and Joyce Talen/Eastwood Bank Scholarship—Awarded to new, full-time undergraduate or professional school degree students who have work and/or volunteer experience demonstrating community involvement. The scholarship may be guaranteed for multiple years at the discretion of the scholarship selection committee and as long as student meets all eligibility requirements.

Women Supporting Success Through Education Scholarship—Awarded to any full- or part-time (minimum of three semester hours) graduate, professional studies, or undergraduate student. This scholarship may not be used for tuition, but instead is awarded to support other needs related to the recipient's education. Examples of appropriate use include: childcare, fees, books, transportation, or other expenses directly related to pursuing higher education. In accordance with the donors' wishes, a plus factor will be given to female students who have demonstrated financial need.

Three broadly based areas of involvement will be considered for scholarship qualification:

- reasons for seeking degree, licensure, or certificate;
- how the applicant plans to use the degree, licensure, or certificate to benefit self and others; and
- financial need.

The scholarship may be guaranteed for multiple years at the discretion of the scholarship selection committee and as long as student meets all eligibility requirements.

Additional Scholarships

Community Celebrity Scholarship—Awarded to any full- or part-time (minimum of three semester hours), graduate, professional studies, or undergraduate students who have work and/or volunteer experience demonstrating community involvement, a cumulative GPA of 3.00 or higher in high school or prior post-secondary academic coursework, and demonstrated financial need.

Patrick and Joan Dean Scholarship—Awarded to students enrolled in a health science related program. In accordance with the donors' wishes, students must be involved with the Rochester Rowing Club in order to qualify for this award.

In Memoriam Scholarships—These scholarships are usually given by family and friends in honor of a loved one who has died. Awarded to any full- or part-time (minimum of three semester hours) graduate, professional studies, or undergraduate students with demonstrated financial need and who have a cumulative GPA of 3.00 or higher in high school or prior post-secondary academic course work.

Kereakos Family Scholarship—Awarded to candidates who are planning to attend, or are already enrolled in, the Translation and Interpretation Program or Health Sciences Program at the University of Minnesota Rochester. Any traditional or non-traditional, full- or part-time students taking credit courses are encouraged to apply.

Candidates must meet *one of the following three* criteria:

- The applicant must have earned a minimum of 12 credits at Rochester Community and Technical College (RCTC) and a cumulative GPA of 3.00 or higher.
- The applicant must be an individual who has immigrated to the United States, and may include:
  - the spouse of an individual who has immigrated to the United States,
  - a non-U.S. citizen and child of a parent or parents who has (have) immigrated to the United States, or
  - a first-generation U.S. citizen who was born in the United States and is the descendent of immigrant parents.
- The applicant's established home residence must be in southeastern Minnesota; and she or he must have demonstrated financial need, and must demonstrate community involvement through work and/or volunteer experience.

Dr. Ingrid Neel Scholarship—Awarded on the basis of merit and/or success to any full- or part-time students pursuing undergraduate, graduate, or professional school degrees in the health sciences who have a cumulative GPA of 3.00 or higher in high school or prior post-secondary academic coursework

David E. and Valerie Halverson Pace Scholarship—Awarded to new, full-time undergraduate or professional school degree students with demonstrated financial need who have a cumulative GPA of 3.00 or higher in high school or prior post-secondary academic coursework. The scholarship may be guaranteed for multiple years at the discretion of the scholarship selection committee and as long as student meets all eligibility requirements.

Rekward Family Scholarship—Awarded on the basis of merit and/or success to any full- or part-time (minimum three semester hours) graduate, professional studies, or undergraduate students who have a cumulative GPA of 3.00 or higher in high school or prior post-secondary academic coursework.

Wendy and Larry Shannon Scholarship—Awarded to any full- or part-time (minimum of three semester hours) graduate, professional studies, or undergraduate student on the basis of merit and/or success.

Judy and Jim Sloan Scholarship—Awarded to students planning to enroll in, or already enrolled in, the B.S.H.S. program at UMR who have a cumulative GPA of 3.00 or higher in high school.

UMR Staff and Alumni Scholarship—Awarded on the basis of merit and/or success to any full- or part-time (minimum of three semester hours) graduate, professional studies, or undergraduate students, who have a cumulative GPA of 3.00 or higher in high school or prior post-secondary academic coursework.

Types of Loans

Federal Perkins Loan

The Federal Perkins Loan has a fixed interest rate of 5 percent. This loan is awarded using the institution's financial aid office criteria, and is based on financial need, the availability of funds, enrollment status, and the amount of other aid the student is receiving.

Ford Federal Direct PLUS Loan

This loan has a fixed interest rate of 7.9 percent. Parents of a dependent student may apply for a Ford Federal Direct Parent Loan for Undergraduate Students (PLUS), a non-need-based program that allows a parent to borrow an amount up to the cost of attendance, minus other financial aid awarded.

Ford Federal Direct Subsidized Loan

This loan has a fixed interest rate of 6.8 percent. The Ford Federal Direct Subsidized Loan is a need based loan program, subsidized by federal funds, that allows students to borrow money interest-free while in school at least half-time.

Ford Federal Direct Unsubsidized Loan

This loan has a fixed interest rate of 6.8 percent. The Ford Federal Direct Unsubsidized Loan is a non-need-based program. Students will be charged interest on this loan, but have the option to defer the interest while in school at least half time.

Alternative Loan Programs

UMR recognizes that even with the assistance of traditional aid resources, not all students and their families will have the financial means to pay for a college education. UMR cannot recommend alternative loan programs. Since each student's needs are unique, students and their co-signers should evaluate each loan program to determine the best loan for their educational plans.

Student Employment at UMR

Students must be registered for a minimum of 6 credits per semester to maintain eligibility for all student employment.

Undergraduate Research Opportunities Program (UROP)

This program benefits students by allowing them to work with a faculty member on research, scholarly, or creative projects. Students develop detailed knowledge of research methods and have unique access to the faculty and facilities of the entire University of Minnesota system. Contact the UROP Office or visit www.urop.umn.edu for more information.

Blind and Deaf Student Tuition Waivers

Students may be eligible for full-tuition waivers if they are legally blind Minnesota residents, or for partial assistance if they are currently enrolled deaf students. To apply for either of these tuition assistance programs students must complete the *Tuition Waiver/Assistance for Blind or Deaf Students* form.

Minnesota War Orphans Tuition Waiver

Students may be eligible for a full-tuition waiver and assistance to help with other education expenses at a Minnesota institution. To be eligible for this program, students must have lost a veteran parent through death as a result of a service-related injury or disease. Students should contact a Veterans Service officer in their home county to help them apply for these education benefits. Visit www.mdva.state.mn.us/education.htm for more information.

Veterans Education Benefits

UMR is approved by the Minnesota State Approving Agency to participate in all Veterans Education Assistance Programs. These programs include benefits for those who have served on active duty and their eligible dependents, as well as members of the Reserve and National Guard. The student must be enrolled for at least 12 credits. Contact One Stop services for coordinated veterans services support at UMR.

Vocational Rehabilitation

Students may be eligible for vocational rehabilitation if they have a physical or mental disability that makes it difficult for them to find or keep a job. When students are determined eligible for services, Minnesota's vocational rehabilitation program considers students' eligibility for other financial aid and may fund some direct costs such as tuition, student service fees, books, supplies, and equipment. For more information, contact the Division of Rehabilitation Service (DRS), 390 North Robert Street, Saint Paul, MN 55101; 651-296-5616 or 1-800-328-9095; or a local DRS office in the student's home county. Visit www.deed.state.mn.us/rehab/index.htm for more information. Olmsted County residents can contact Community Services at 151 4th Street S.E., Rochester, MN 55904-3711 or 507-328-6500.

Student Affairs

At the University of Minnesota Rochester, students will find a wide range of activities and services that can enhance their education and enrich their personal experience. They will be part of a learning community that is continually changing and growing. UMR is a friendly campus where students will come to know many fellow students and staff members on a first-name basis.

Many of the services and extracurricular opportunities available at UMR are described in the following pages. Campus services from Financial Aid to Health Services support students during their college experience. Varied social, educational, and recreational programs extend learning beyond the classroom and provide a full range of night and weekend activities including participation in student clubs and organizations. Each of these services and activities enhances the UMR college experience. For the most complete listing of resources and student services on the Rochester campus, students should refer to the "Campus Life" section of the UMR website, www.r.umn.edu.

Mission

To advocate for students and shape their higher education experience by providing exceptional service and support to University of Minnesota Rochester's students—from inquiry to graduation.

Vision

With expertise in student development, Student Affairs has the unique opportunity to impact the comprehensive student experience. Building on a foundation of authentic relationships and innovation, we will constantly assess processes and services, using data and research to improve our efforts to prepare students for their next steps and an increasingly diverse world.

Registrar's Office

The mission of the Registrar's Office is to provide a service-oriented environment that promotes and supports the academic goals of students, faculty, and staff in accordance with University, state, and federal guidelines. Assistance is available on a walk-in basis, via the web, by telephone, or by appointment. The Registrar's Office is located in the Student Resource Center on the third floor of University Square.

The Registrar's Office is responsible for many activities and processes including registration, processing of grades, transfer credit evaluation, the Academic Progress Audit System (APAS), degree clearance, transcript distribution, and certification of full-time attendance for loan deferments and scholarships. Staff work directly with faculty and students to ensure a positive learning environment on campus.

Health Services

All students registered for 6 credits or more may use the UMR Health Service, which is funded by a mandatory student services fee paid with each semester's tuition and fees. Students have access to professional health care providers, medical treatment, routine laboratory tests, immunizations, and prescriptions for medication. All Health Service records are confidential. Information about hours of operation, location, and range of services can be found on the UMR Health Services website: http://r.umn.edu/student-life/health-wellness/health-services.

Students should seek treatment for emergencies by calling 911.

The health service fee does not pay for medical or surgical inpatient services at a hospital. Health insurance is required for all students enrolled for 6 credits or more. For those not covered by parents' policies or alternate coverage obtained elsewhere, the University offers an insurance policy. Students must provide proof of health insurance coverage each semester during the enrollment process; otherwise, they will be automatically enrolled in the student health insurance program.

Mental Health Services

Students can access referrals to mental health providers through the Student Health Service, as well as through other means, funded by the UMR student services fee. The most up to date information on mental health services can be found on the UMR website: http://r.umn.edu/student-life/health-wellness/mental-health.

Students with Disabilities

Because UMR is a small, student-centered institution, it may be a suitable choice for students with disabilities. Such students receive personal attention and are accommodated on an individualized basis. The UMR Disability Services Office is located within the Office of Student Affairs. Disability Services provides support for students with physical, mental, and/or cognitive disabilities. Its staff works with students to ensure that they receive appropriate academic accommodations.

Students with disabilities can be accommodated through a variety of means such as alternate print formats, alternate testing, note-takers, priority registration, sign language interpreters, and lectures and books in audio format.

Teaching facilities, Information Commons, and Student Affairs are accessible and have elevator access. Students with disabilities are responsible for registering with Disability Services, providing appropriate documentation of their disability, and requesting accommodation far enough in advance for accommodations to be made. Persons with disabilities seeking assistance or information should contact the Student Resource Center at 507-258-8457, toll-free at 800-947-0117, or via email at stuserv@r.umn.edu.

Students with Children

Student parents seeking child care are encouraged to use local resources. Local providers can be found at:

- Minnesota Child Care Resource and Referral Network
  www.mnchildcare.org/ccrrmap.php
- Child Care Resource and Referral
  www.c2r2.org/parentsmain.htm

Post Secondary Child Care Grant

The Minnesota Office of Higher Education sponsors, a state-funded child care grant. To qualify, applicants must be *MN State Grant eligible*, taking a minimum of 6 credits, and *must report any MFIP or other county child care assistance they are receiving* (state welfare program, food stamps, and medical coverage excluded). The maximum award is approximately $1,100 per child, per semester, based on income, credit hours, and availability of funds.

Housing

318 Commons in downtown Rochester is the newest addition to the UMR Campus and includes on campus housing. This building features apartment style living accommodations incorporating a variety of floor plans each containing a full kitchen and washer and dryer unit inside every apartment. In addition to common area activity and lounge space, this facility also includes classroom and lab space, as well as faculty offices inside the building. Conveniently connected by skyway, students living in this building are a short walk from other campus buildings, parking, and a variety of downtown venues. Please visit the website, www.r.umn.edu/student-life/housing/index.htm to learn more about 318 Commons as well as other student-friendly housing located near the downtown area. The housing coordinator is available to help students find the right accommodations to meet their needs on campus and in the community.

Student Center

The third floor student lounge in University Square and the second floor lounge in 318 Commons are centers for co-curricular activity on campus, but activities are not limited to those spaces. Activities, events, and functions—club meetings, concerts, conferences, forums, and world-class performances and lectures—throughout the community are an integral part of enriching the student experience.

Student Activities

By participating in student organizations, students develop leadership and organizational skills, meet new people, make an impact on campus and in the community, and have fun. The assistant director of student life supports UMR's extracurricular social, educational, cultural, and recreational programs by providing assistance to individuals or groups of students who would like to organize activities on campus or become involved.

Student Organizations

UMR students are encouraged to form organizations, clubs, committees, and special interest groups based on their unique interests. These organizations provide opportunities for involvement in the academic, social, cultural, religious, and recreational activities of the campus, as well as in local, national, and international issues. Students are encouraged to visit http://r.umn.edu/student-life/student-activities for more information.

Sports and Recreation

Recreational activities and physical wellness are important features of life at UMR. Through athletic and recreational experiences, students have the opportunity to improve their level of personal fitness.

To help facilitate these experiences UMR has partnered with the Rochester Area Family Y. All degree-seeking students who are enrolled in six or more credits automatically receive a Y membership. Non-degree seeking and students enrolled less than half-time can elect to pay the student services fee which makes them eligible for the Y membership. Visit http://r.umn.edu/student-life/health-wellness/fitness for more information or contact the Student Resource Center at 507-258-8457 or stuserv@r.umn.edu.

Community Service and Volunteerism

UMR belongs to the Minnesota Campus Compact Association, which promotes and supports both community service and service-learning at colleges and universities. The goals of these activities are to develop leadership skills, encourage civic participation, and connect UMR students with community members in the area. For more information on community service and volunteer opportunities contact the Office of Student Affairs. See also the section on Service Learning in the Academic Information section of this catalog.

Campus Safety and Security

Security services for University Square are provided by Premier Security, which can be reached any time by calling 507-281-4952. Student security staff supplements Premier Security presence on campus. Public spaces are monitored via security cameras. Students who need a personal safety escort to their car in one of the public parking ramps or lots can call Premier Security or contact the uniformed official in the common areas at any time.

UMR publishes an annual Campus Safety and Security Report in compliance with federal legislation now known as the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act. This legislation requires all public and private colleges receiving federal financial aid to provide annual information on campus safety services, crime reporting and the university's response, data regarding crimes occurring on campus, and relevant policies and procedures.

The current UMR Campus Safety and Security Report is available at http://www.r.umn.edu/administration/prepared/security. This report will be updated on an annual basis and distributed electronically each fall by the Office of Student Affairs to all currently enrolled students. The report is available in printable format online and in alternative formats upon request.

Student Alert Systems

Student success coaches work closely with faculty to provide broad-based support for student success. They coordinate intervention strategies and support for students who are at risk academically. Working directly with the student, they determine strategies for success. Faculty is also encouraged to use the Midterm Alert System.

Midterm Alert

This is an all-University alert that is available during weeks 6–8 of the semester. Alerts are automatically sent to both the adviser and the student. Only one midterm alert can be sent for each student in each course.

Gay, Lesbian, Bisexual, Transgender, and Allied Resources

As part of the University of Minnesota system, UMR is committed to providing a safe and respectful environment for persons who are gay, lesbian, bisexual, or transgender. The Office of Student Affairs is equipped to assist GLBT students, faculty, and staff in finding the information they need to be successful on and off campus. These resources may come from the Rochester community, from the UMTC campus, or the UMD campus.

GLBTA Programs Office—The Gay, Lesbian, Bisexual, Transgender, and Ally Programs Office is available to students, staff, faculty, administrators, alumni, and community members. Their services include consultation on program development, diversity training, advocacy, and community partnerships. The office also serves as a place to gather general information about the GLBT Community on all five University of Minnesota campuses. See the website, www.glbta.umn.edu.

GLBTA Mentor Program—A collaboration with the Minnesota GLBTA Campus Alliance, this program matches undergraduate and graduate students from Minnesota colleges and universities with a mentor for one academic year. See the website, www.glbta.umn.edu/programming/mentorprogram.

The program seeks to provide an opportunity for GLBTA students to access support and resources and to attain personal growth; offer an opportunity for mentors to give back to their community; to provide support and growth opportunities that mentors and mentees may not find otherwise; to build community among participating mentors; and to encourage community involvement.

GLBTA Student Leadership Retreat—For student leaders on all five University campuses who are dedicated to working toward a more positive atmosphere and experience for GLBTA students, this retreat focuses on leadership development, small group facilitation skills, and exploring intersecting identities and oppressions through a social justice lens. It's also a great way to make new friends and meet new people. See the website, www.glbta.umn.edu/programming/leadershipretreat.

The Systemwide Standing Commission for GLBT Concerns—Comprised of students, staff, faculty, alumni, and community members from all five University campuses, the commission is charged with assessing the campus climate and making recommendations to the vice president and vice provost for equity and diversity. See the website, www.glbta.umn.edu/systemwide.

The Transgender Commission—This commission is a coalition of students, staff, faculty, alumni, and community members working for institutional change at the University of Minnesota for trans communities and people of all genders through advocacy, education, community building, and policy reform. See the website, www.glbta.umn.edu/trans.

Campus Programming

A variety of campus programs are planned by student success coaches, the assistant director of student life, faculty, and staff. Some programs target current students and provide entertainment, career exploration opportunities, and academic and personal enrichment. Other programs target professionals in the community. Students are encouraged to provide feedback and suggestions to any staff or faculty member. They are also encouraged to form student groups and request student services fee money.

UMR Alumni Activities

Student Alumni Organization

Students currently studying to earn their degrees in programs offered by UMR are engaged in many traditional alumni activities through their educational experience. Planned interactions to support career and professional development with U of M graduates and others in their professional field of choice are integrated into degree programs. As these students graduate from UMR, a student alumni organization will be available to keep them connected to the institution to provide networking opportunities with fellow graduates and support their continued professional development. Also critical will be their support of the ongoing institutional initiatives that relate to learning, research, and student development outcomes.

Study Away from Rochester

UMR is committed to preparing students to become global citizens and to deepening their understanding of world issues. Experiencing another location and culture offers students an exciting opportunity that will enhance their understanding of global issues. Studying away from the Rochester campus will challenge students to learn and conduct research in a cultural context different from their own, encourage students to develop their sense of self in the world, and provide an experience that will aid in development of professional skills. Because firsthand knowledge of other societies and cultures builds human awareness, UMR encourages students to study in diverse locations as part of their academic program.

As a part of the University system, UMR students have access to an especially broad range of programs all over the world. Most UMR federal and state financial aid is available for study abroad. Scholarships are also offered nationally and by the University for study abroad.

Students considering this opportunity are encouraged to consult with a student success coach and the international programs coordinator as early in their academic programs as possible to identify appropriate locations and programs, and the best time in their academic career to participate in an international experience.

Study abroad courses may fulfill liberal education requirements. Check with your student success coach for more details.

International Learning Abroad

Several types of international experiences are available to students: studying at an international university, volunteering in another country and internship opportunities are among these experiences. International experiences can last from a few weeks up to an entire year; and financial aid can be available for qualified students. The University of Minnesota Rochester provides opportunities in diverse geographic locations around the globe. See the website, www.r.umn.edu/travel.

National Student Exchange

National Student Exchange (NSE) is a study away program, much like learning abroad, involving a consortium of U.S. and Canadian colleges and universities, including the University of Minnesota Rochester. With NSE you can study away for a semester or for a year. NSE locations encompass nearly 200 colleges and universities in the United States, Guam, Puerto Rico, U.S. Virgin Islands and Canada. See the website, www.r.umn.edu/student-life/study-away/nse.

Center for Learning Innovation

The Center for Learning Innovation (CLI) at UMR takes a research-based approach to learning and assessment in the development and implementation of the UMR curriculum. Research on learning and teaching emphasizes learning with understanding that goes beyond memorization and asks students to develop a rich network of well-organized, usable, and transferable knowledge. It calls for a learner-centered approach that takes into account students' pre-existing knowledge and preconceptions and cultural differences. It stresses the importance of a community-centered approach that includes learning communities and linking classroom learning to students' experiences. CLI takes a comprehensive approach to assessment that monitors and guides students' learning, with the result being a curriculum that is technology-enhanced and has a significant project-based component to enable students to transfer and integrate knowledge across disciplines to solve complex problems.

Vision

The Center for Learning Innovation (CLI) functions as a single academic unit wherein faculty from across the disciplines deliver a synergistic academic program in the health sciences. This integrated approach prepares students for a wide variety of healthcare careers and professions, graduate studies in health related programs, and careers in the bioscience industry. CLI promotes a learner-centered, technology-enhanced, concept-driven, and community-integrated learning environment. Through ongoing assessment of student achievement, CLI aspires to personalize students' education, establish data-driven research on learning, and continuously improve the UMR curriculum.

Goals

- Develop an **integrated curriculum** across the life/health, physical, and quantitative sciences for a bachelor of science in health sciences (B.S.H.S.) degree that delivers a liberal education and prepares students for careers in the health profession, or for professional and graduate programs in the health sciences.
- Develop **learning informatics** tools to support ongoing formative and summative assessment that guides learning and development of students, and the development of a database for ongoing research on learning.
- Engage in and disseminate data-driven educational **research on learning**.
- Advance **technology-enhanced learning** to expand opportunities for learning and to support ongoing assessment.
- Establish **Learning Spaces** where student learning will be supported through one-on-one, group, and peer mentoring.
- Work closely with Student Affairs to provide guidance and support for student learning outcomes through academic and **career advising, service learning opportunities**, and other support services.
- Develop a postdoctoral and graduate student **mentoring program** to prepare future educators.

Organization

The core science disciplines—life/health sciences, physical sciences, and quantitative sciences—are the disciplinary backbone of the B.S.H.S. degree program and form three clusters. A fourth cluster, which includes the social sciences, arts and humanities, and other components that are important to a liberal education, complements the natural and quantitative sciences and is critical to UMR's goal of delivering a strong liberal education. Learning design faculty with content expertise in the four clusters and research interest in learning take the lead in designing the curriculum and are supported by student-based faculty and postdoctoral associates. All UMR faculty and staff are expected to participate in the entirety of the curriculum to guarantee a well-integrated experience for students.

Learning Modules

The UMR curriculum is modularized. Modules are two- to three-week units that focus on either a disciplinary or an interdisciplinary topic. Each module has a set of learning objectives, skills and knowledge expectations, and an assessment component. A curriculum map links the modules together. Modules are grouped and will appear on student transcripts as courses. A strong liberal education is integrated throughout the four-year curriculum.

Faculty and staff at UMR develop learning materials on an ongoing basis for multiple modes of delivery, including technology-enhanced methods that are integrated with assessment, to accommodate diverse learning styles and to ensure active participation by students in the learning process.

- **Disciplinary modules** focus largely on the natural and quantitative sciences to provide students with the knowledge and skills necessary for careers in the health sciences.
- In their **integrative modules**, students transfer their disciplinary knowledge and skills to solving complex problems that relate to their career interests or address aspects of the broader liberal education. These integrative modules emphasize analysis, synthesis, and interpretation, and may be community based or integrated into internships or study abroad.

Career Advising

Career advising is an integral part of the curriculum and is designed to inform students about the rich career opportunities in the health sciences. It is delivered through exploratory seminars, presentations by professionals, internships, or one-on-one advising.

Assessment

Assessment serves multiple purposes, including monitoring and guiding student learning and measuring the value added to their education. The basic unit of assessment for the curriculum is the module. While a student studies a particular module, well-defined learning objectives guide the assessment process, which includes pre- and post-tests in addition to ongoing assessment. This detailed assessment will allow students and instructors to track progress and identify where individual students are experiencing difficulties.

Bachelor of Science in Health Sciences (B.S.H.S.)

Degree Requirements

Required credits to graduate with this degree: 120

Required credits within the major: 65 to 75

Degree: Bachelor of Science

Rochester students majoring in the health sciences will receive an integrated education across the life/health sciences, the physical sciences, the quantitative sciences, the social sciences and the arts and humanities. Students must complete at least 120 credits, including at least 65–75 credits in the major. Requirements in the major include coursework in the physical sciences cluster, quantitative sciences cluster, life/health sciences cluster, and a personalized capstone experience. All courses in the major must be taken A-F, unless the course is only offered S-N.

The Health Sciences B.S. program prepares students for postbaccalaureate education in a broad spectrum of health science related fields; health profession careers, including certificate programs in the health sciences; professional schools in the health sciences; and entry-level science and laboratory positions in industry, government agencies, and universities..

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Admission Requirements

A GPA above 2.00 is preferred for the following:

- 2.50 transferring from outside the University

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements, http://www.r.umn.edu/onestop/students/degree-planning/liberal-ed-requirements.

Program Requirements

Students are required to take 4 semester(s) of Spanish.

All students are required to complete campus-wide requirements for liberal education and writing. UMR liberal education is integrated into the curriculum throughout the four years and is modeled after the new liberal education requirements on the UMTC campus. Writing and communication follows a writing-enriched curriculum and is integrated throughout the curriculum across all courses.

Life/Health Sciences Requirement

CHEM 2331—General Chemistry I (3 cr)
BIOL 2311—Integrative Biology [BIOL] (5 cr)
BIOL 2331—Anatomy and Physiology I [BIOL] (4 cr)
PUBH 2561—Public Health: A Global Perspective [GP] (3 cr)
BIOC 3321—Biochemistry (3 cr)
or BIOL 2332—Anatomy and Physiology II (4 cr)
or BIOL 3341—Microbiology (2 cr)
BIOL 3342—Microbiology and Environmental Issues (1 cr)
or BIOL 3341—Microbiology (2 cr)
BIOL 3345—Microbiology Lab (1 cr)
Take 1 or more course(s) from the following:
- BIOL 4364—Immunology (2 cr)
- PUBH 3361—Epidemiology and Public Health (3 cr)
- PUBH 3561—Environmental Health and Environmental Justice [ENV, SOCS] (3 cr))

Physical Sciences

CHEM 1231—Organic Chemistry I [PHYS] (4 cr)
CHEM 2231—Organic Chemistry II [PHYS] (4 cr)
PHYS 1251—Physics I [PHYS, TS] (4 cr)

Quantitative Requirement

MATH 1161—Statistics and Discrete Mathematics [MATH] (3 cr)
MATH 1171—Calculus, Modeling, and Data I [MATH] (3 cr)
Take 1 or more course(s) from the following:
- MATH 1111—College Algebra, Trigonometry, and Precalculus [MATH] (3 cr)
- MATH 2171—Calculus, Modeling, and Data II [MATH] (3 cr)
- MATH 3171—Bioinformatics and Biostatistics (3 cr)
- HINF 3173—Introduction to Health Informatics (3 cr)

Humanities and Social Sciences

HUM 1441—Introduction to Ethics [CIV] (3 cr)
PSY 1511—Psychology [SOCS] (3 cr)
or SOC 1571—Sociology [SOCS, DSJ] (3 cr)
Take 2 or more course(s) from the following:
- HUM 1431—Introduction to Philosophy [AH] (3 cr)
- HUM 1433—Literature in a Social and Historical Context [LITR] (3 cr)
- HUM 1435—Introduction to History [HIS, GP] (3 cr)

Take 1 or more course(s) from the following:
- HUM 3437—History and Philosophy of Science [HIS, TS] (3 cr)
- HUM 3441—Ethics of Medicine and Sciences [CIV] (3 cr)
- SOC 3531—Global Perspectives [GP, SOCS] (3 cr)
- SOC 3581—Technology and Society [SOCS, TS] (3 cr)

Language Requirement

SPAN 1521, SPAN 1522, SPAN 2521 can be replaced by proficiency exam. SPAN 2521 and SPAN 2522 can be replaced by study abroad in a Spanish speaking environment.

SPAN 1521—Spanish I (3 cr)
SPAN 1522—Spanish II (3 cr)
SPAN 2521—Spanish III (3 cr)
SPAN 2522—Spanish IV (3 cr)

Writing Requirement

WRIT 1511—Writing Studio I (1 cr)
WRIT 1512—Writing Studio II (1 cr)
WRIT 3511—Communication Methods (2 cr)
or advanced technical writing and communication course

Career Development

CLI 1711—University Experience I (1 cr)
CLI 1712—University Experience II (1 cr)
CLI 2711—Career Development I (1 cr)
CLI 2712—Career Development II (1 cr)
CLI 3711—Leadership and Development I (1 cr)
CLI 3712—Leadership and Development II (1 cr)

Capstone

CLI 4711—Reflections I (1 cr)
CLI 4712—Reflections II (1 cr)
Take 2 semesters of any capstone opportunity listed below.
CLI 4696—Capstone Internship (6 cr)
or CLI 4896—Capstone Research Experience (6 cr)
or CLI 4896—Capstone Certificate in Health Professions (6–15 cr)
or Equivalent and approved set of courses in a health certificate program or graduate program (up to 30 credits over two semesters)

Electives

Electives may not be used to satisfy other requirements but may be replaced by courses that count towards the capstone experience, including courses in approved health certificate programs or graduate programs.

Take 11 or more credits(s) from the following:
CHEM 2332—Laboratory for General Chemistry I (1 cr)
BIOL 4312—Advanced Topics in Molecular and Cellular Biology and Genetics (4 cr)
BIOL 4364—Immunology (2 cr)
HINF 3173—Introduction to Health Informatics (3 cr)
HUM 3437—History and Philosophy of Science [HIS, TS] (3 cr)
HUM 3441—Ethics of Medicine and Sciences [CIV] (3 cr)
MATH 3171—Bioinformatics and Biostatistics (3 cr)
PHYS 2251—Physics II [PHYS] (4 cr)
PUBH 3361—Epidemiology and Public Health (3 cr)
PUBH 3561—Environmental Health and Environmental Justice [ENV, SOCS] (3 cr)
SOC 3531—Global Perspectives [GP, SOCS] (3 cr)
SOC 3581—Technology and Society [SOCS, TS] (3 cr)
BIOL 3341—Microbiology (2 cr)
BIOL 3342—Microbiology and Environmental Issues (1 cr)
BIOL 3341—Microbiology (2 cr)
BIOL 3345—Microbiology Lab (1 cr)

Bachelor of Science in Health Professions (B.S.H.P.)

Degree Requirements

Required credits to graduate with this degree: 120 to 124

Required credits within the major: 60 to 65

This program requires summer terms.

Degree: Bachelor of Science

The bachelor of science in health professions (B.S.H.P) consists of a degree awarded by the University of Minnesota and a certificate awarded by the Mayo School of Health Sciences (MSHS) in one of four fields. The degree/certificate program provides pathways for transfer students who have completed a required set of lower division coursework that satisfies rigorous liberal education and science education requirements. The program admits juniors and delivers an upper division curriculum leading to the bachelor of science degree and prepares students to become certified health professionals in the fields of echocardiography, radiography, respiratory care, or sonography. The curriculum combines University of Minnesota Rochester academic courses as well as didactic and laboratory coursework from Mayo School of Health Sciences. Clinical experiences are provided by Mayo Clinic Health System.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Admission Requirements

Students must complete 16 courses before admission to the program.

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Statistics

MATH 1161—Statistics and Discrete Mathematics [MATH] (3 cr)

College Algebra

MATH 1111—College Algebra, Trigonometry, and Precalculus [MATH] (3 cr)

Chemistry with Laboratory

CHEM 1231—Organic Chemistry I [PHYS] (4 cr)

Physics with Laboratory

PHYS 1251—Physics I [PHYS, TS] (4 cr)

Microbiology with Laboratory

BIOL 3341—Microbiology (2 cr)
BIOL 3345—Microbiology Lab (1 cr)

Anatomy and Physiology

BIOL 2331—Anatomy and Physiology I [BIOL] (4 cr)
BIOL 2332—Anatomy and Physiology II (4 cr)

Psychology

PSY 1511—Psychology [SOCS] (3 cr)

Higher Level Mathematics or Science Course

Take one course for 3-4 credits.

Writing

Writing Enriched Curriculum
WRIT 1511—Writing Studio I (1 cr)
WRIT 1512—Writing Studio II (1 cr)
or English (two semesters, without a writing intensive or writing enriched curriculum)
or English (one semester, writing intensive curriculum with lower division writing intensive courses)

Speech or Communication

WRIT 3511—Communication Methods (3 cr)

Ethics

HUM 1441—Introduction to Ethics [CIV] (3 cr)

Medical Terminology

UMTC Medical Terminology

Patient Care with Clinical Experience

One course or CNA

General Requirements

All students are required to complete general University and college requirements including writing and liberal education courses. For more information about University-wide requirements, see the liberal education requirements.

Program Requirements

Admission to Mayo School of Health Sciences in one of four programs: echocardiography, radiography, respiratory care, and sonography.

Program Sub-plans

Students are required to complete one of the following sub-plans.

Echocardiography—Mayo School of Health Sciences Certificate

Echocardiographers use ultrasound to assess cardiovascular anatomy. Using sonography equipment, they capture two-dimensional images and Doppler tracings which they provide for physicians with data in order to provide optimal diagnoses. The curriculum for the echocardiography track combines University of Minnesota Rochester academic courses as well as didactic and laboratory coursework from Mayo School of Health Sciences. Clinical experiences are provided by Mayo Clinic Health System.

Echocardiography Sub-plan Requirements

The echocardiography curriculum currently consists of 65 credits.

ECHO 3011—Foundations of Echocardiography (8 cr)
ECHO 3101—Cardiovascular Anatomy & Physiology (2 cr)
ECHO 3301—Clinical Practicum I (3 cr)
ECHO 3202—Adult Echocardiography I (2 cr)
ECHO 3212—Adult Echocardiography II (2 cr)
ECHO 3222—Adult Echocardiography III (2 cr)
ECHO 3302—Clinical Practicum II (7 cr)
ECHO 3403—Echocardiographic Application (3 cr)
ECHO 3503—Stress Echocardiography (2 cr)
ECHO 4111—Ultrasound Physics I (2 cr)
ECHO 4303—Clinical Practicum III (7 cr)
ECHO 4112—Ultrasound Physics II (2 cr)
ECHO 4201—Vascular Imaging (1 cr)
ECHO 4211—Congenital Heart Disease (2 cr)
ECHO 4401—Clinical Practicum IV (8 cr)
ECHO 4501—Research Project and Publication I (1 cr)
ECHO 4402—Clinical Practicum V (12 cr)

Radiography—Mayo School of Health Sciences Certificate

Radiographers use ionizing radiations (X-rays) to create images of body parts or organs systems. They prepare patients for X-rays, and select the appropriate radiation exposure factors, position, and equipment in order to get optimal images. The curriculum for radiography track combines University of Minnesota Rochester academic courses as well as didactic and laboratory coursework from Mayo School of Health Sciences. Clinical experiences are provided by Mayo Clinic Health System.

Radiography Requirements

The radiography curriculum currently consists of a total of 62 credits.

RADI 3011—Foundations of Radiography (2 cr)
RADI 3021—Patient Care Techniques (2 cr)
RADI 3101—Radiographic Procedures I (3 cr)
RADI 3111—Radiation Physics (2 cr)
RADI 3301—Clinical Practicum I (5 cr)
RADI 3202—Principles of Radiographic Exposure (2 cr)
RADI 3102—Radiographic Procedures II (7 cr)
RADI 3302—Clinical Practicum II (5 cr)
RADI 3503—Radiographic Factor Analysis (1 cr)
RADI 3603—Applied Radiography Topics (1 cr)
RADI 4303—Clinical Practicum III (6 cr)
RADI 4101—Radiographic Procedures III (3 cr)
RADI 4241—Radiation Protection Advanced Imaging (3 cr)
RADI 4401—Clinical Practicum IV (7 cr)
HP 4802—Health Care Delivery Systems and Finance (3 cr)
HP 4902—Leadership and Management in Health Professions (2 cr)
RADI 4402—Clinical Practicum V (8 cr)

Respiratory Therapy—Mayo School of Health Sciences Certificate

Respiratory therapists provide treatment, evaluation, and management of patients with breathing disorders or cardiovascular problems. Respiratory therapists work mainly in hospitals, but are also employed by clinics, private practices, and medical transport teams. They may administer oxygen, manage mechanical ventilators, perform cardiopulmonary resuscitation (CPR), and measure lung function. The curriculum for the respiratory therapy track combines University of Minnesota Rochester academic courses as well as didactic and laboratory coursework from Mayo School of Health Sciences. Clinical experiences are provided by Mayo Clinic Health System.

Respiratory Therapy Requirements

The respiratory therapy curriculum currently consists of a total of 60 credits.

RESP 3011—Foundations of Respiratory Care (2 cr)
RESP 3021—Patient Care Techniques (2 cr)
RESP 3101—Respiratory Care Modalities and Equipment I (4 cr)
RESP 3201—Cardiopulmonary Patient Assessment (4 cr)
RESP 3301—Clinical Practicum I (4 cr)
RESP 3401—Seminar in Respiratory Care I (1 cr)
RESP 3102—Respiratory Care Modalities and Equipment II (4 cr)
RESP 3202—Advanced Cardiopulmonary Physiology and Pathophysiology (3 cr)
RESP 3302—Clinical Practicum II (4 cr)
RESP 3402—Seminar in Respiratory Care II (1 cr)
RESP 3502—Clinical Research: Literature, Methodology, and Application (3 cr)
RESP 4400—Advanced Adult Respiratory Critical Care Techniques (3 cr)
RESP 4311—Advanced Perinatal and Pediatric Respiratory Care (2 cr)
RESP 4321—Advanced Cardiopulmonary Diagnostics (2 cr)
RESP 4341—Clinical Practicum III: Advanced Respiratory Care (3 cr)
RESP 4401—Clinical Practicum IV: Advanced Adult Respiratory Critical Care (1 cr)
RESP 4501—Research Project and Publication (1 cr)
RESP 4331—Cardiopulmonary Rehabilitation, Disease Prevention and Case Management (1 cr)
Complete Pharmacotherapy for Health Professions (online) UMTC PHAR 3800.
RESP 4342—Clinical Practicum V: Advanced Respiratory Care (3 cr)
RESP 4402—Clinical Practicum VI: Advanced Adult Respiratory Critical Care (1 cr)

RESP 4502—Research Project and Publication II (1 cr)
RESP 4602—Grand Rounds (2 cr)
HP 4802—Health Care Delivery Systems and Finance (3 cr)
HP 4902—Leadership and Management in Health Professions (2 cr)

Sonography—Mayo School of Health Sciences Certificate

Diagnostic medical sonographers use nonionizing high frequency sound waves (i.e., ultrasound) to diagnose, monitor, and treat medical conditions. They closely examine images of organs and vessels in the body for subtle differences between healthy and pathological areas and present their images to physicians for diagnosis. The curriculum for the sonography track combines University of Minnesota Rochester academic courses as well as didactic and laboratory coursework from Mayo School of Health Sciences. Clinical experiences are provided by Mayo Clinic Health System.

Sonography Requirements

The sonography curriculum currently consists of a total of 65 credits.

SONO 3011—Foundations of Sonography (3 cr)
SONO 3111—Abdomen I Sonography (2 cr)
SONO 3201—Gynecologic Sonography (2 cr)
SONO 3121—Cross-Sectional Abdominal Anatomy (1 cr)
SONO 3311—Vascular Technology (2 cr)
SONO 3301—Clinical Practicum I (3 cr)
SONO 3112—Abdomen II Sonography (3 cr)
SONO 3401—OB Sonography (2 cr)
SONO 3312—Vascular Technology II (3 cr)
SONO 3302—Clinical Practicum II (5 cr)
SONO 3503—Superficial Sonography (2 cr)
SONO 3113—Abdomen III Sonography (2 cr)
SONO 3313—Vascular Technology III (1 cr)
SONO 3403—Concepts Review and Case Studies (2 cr)
SONO 4303—Clinical Practicum III (6 cr)
SONO 4111—Ultrasound Physics I (2 cr)
SONO 4201—Pediatric Sonography (1 cr)
SONO 4301—Fetal Anomalies (2 cr)
SONO 4401—Clinical Practicum IV (7 cr)
SONO 4501—Research Project & Publication (1 cr)
SONO 4112—Ultrasound Physics II (2 cr)
SONO 4802—Mock Exams (1 cr)
SONO 4602—Professional Growth and Development (1 cr)
SONO 4402—Clinical Practicum V (8 cr)
SONO 4502—Research Project and Publication II (1 cr)

Checkpoint Requirements

General requirement checkpoints (complete all)

Checkpoint requirement:	Requirement definition:	Potential term for fulfilling the requirement:	Recommended term for fulfilling the requirement:
Freshman Composition	WRIT 1511	Fall Year 1 to Spring Year 1	Fall Year 1
Freshman Composition	WRIT 1512	Fall Year 1 to Spring Year 1	Spring Year 1
Ethics	HUM 1441	Fall Year 1 to Spring Year 2	Spring Year 1
Social Sciences	SOC 1511 or PSY 1571	Fall Year 1 to Spring Year 2	None

Program requirement checkpoints (complete all)

Checkpoint requirement:	Requirement definition:	Potential term for fulfilling the requirement:	Recommended term for fulfilling the requirement:
Biochemistry	BIOC 2321	Fall Year 2 to Fall Year 3	Fall Year 2
Biology	BIOL 2311	Spring Year 1 to Spring Year 2	Spring Year 1
Biology	BIOL 2331	Fall Year 2 to Fall Year 3	Fall Year 2
Chemistry	CHEM 1231	Fall Year 1 to Fall Year 2	Fall Year 1
Chemistry	CHEM 2231	Spring Year 1 to Spring Year 2	Spring Year 1
Physics	PHYS 1251	Fall Year 2 to Fall Year 4	Fall Year 3
Mathematics	MATH 1161	Fall Year 1 to Fall Year 2	Fall Year 1
Mathematics	MATH 1171	Spring Year 1 to Spring Year 2	Spring Year 1

Liberal Education Requirements

The University of Minnesota Rochester is committed to providing an effective liberal education. Effective writing and communication are critical components of liberal education. UMR supports the principles of a Writing Enriched Curriculum. All courses leading to the Bachelor of Science will therefore have writing integrated.

Students at UMR will take at least one course in each of the following seven areas: Arts and Humanities, Biological Sciences, Historical Perspectives, Literature, Mathematical Thinking, Physical Sciences, and Social Sciences. UMR follows the requirements in the core developed by the Council on Liberal Education (April 2008).

Students will complete one course that meets each of the following themes: Civic Life and Ethics, Diversity and Social Justice in the United States, the Environment, Global Perspectives, and Technology and Society.

Theme Area	Civic Life and Ethics	Diversity and Social Justice in the United States	Environment	Global Perspectives	Technology and Society	NONE
Arts and Humanities						HUM 1431
Biological Sciences						BIOL 2311 BIOL 2331
Historical Perspectives				HUM 1435	HUM 3437	
Literature						HUM 1433
Mathematical Thinking						MATH 1111 MATH 1161 MATH 1171 MATH 2171
Physical Sciences					PHYS 1251	CHEM 1231 CHEM 2231 PHYS 2251
Social Sciences		SOC 1571 SOC 3571	PUBH 4561	SOC 3531 SOC 3541	SOC 3581	PSY 1511
NONE	HUM 1441 HUM 3441 SOC 1641	HUM 3471	BIOL 3341, BIOL 3342, & BIOL 3345	PUBH 2561	BIOL 3311 HUM 3481	

Quality of Work

The cumulative GPA required for graduation is 2.00. A minimum GPA of 2.00 (or higher if indicated by the discipline) is required in the major in order to graduate. Both the cumulative GPA and the major/minor GPA include all, and only, University of Minnesota coursework.

Course Descriptions

Course Numbers, Symbols, and Abbreviations

Courses in this catalog are current as of December 2011. Check the University Catalogs website at www.catalogs.umn.edu for the most current course information. Not all courses are not offered every semester. To find out whether a course is offered during a particular semester, consult One Stop's online *Class Search* site at http://onestop2.umn.edu/courseinfo.

Course Designators

In conjunction with course numbers, departments and programs are identified by a 2-, 3-, or 4-letter designator prefix (e.g., CE for Civil Engineering, POL for Political Science, ECON for Economics). When no designator precedes the number of a course listed as a prerequisite, that prerequisite course is in the same department as the course being described.

Course Numbers

0xxx Courses that do not carry credit toward any University degree.

1xxx Courses primarily for undergraduate students in their first year of study.

2xxx Courses primarily for undergraduate students in their second year of study.

3xxx Courses primarily for undergraduate students in their third year of study.

4xxx Courses primarily for undergraduate students in their fourth year of study; graduate students may enroll in such courses for degree credit. 4xxx courses can be counted for a Graduate School degree if the course is taught by a member of the graduate faculty or an individual appointed to Limited Teaching Status (LTS).

Course Abbreviations

The following abbreviations are used throughout the course prerequisites of most University catalogs to denote common and recurring items of information.

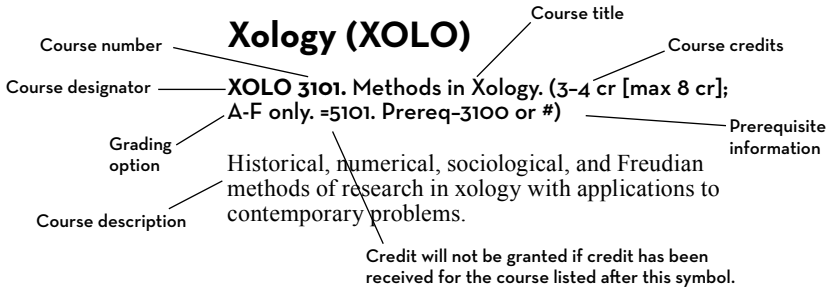
Prereq .....Course prerequisites.
cr.....Credit.
div.....Division.
DUS .....Director of undergraduate studies.
equiv .....Equivalent.
fr, soph, jr, sr ...Freshman, sophomore, junior, senior.
H .....Honors. Courses with an H following the course number satisfy honors requirements.
V.....Honors and Writing Intensive. Courses with a V following the course number satisfy both honors and liberal education writing intensive requirements.
W .....Writing Intensive. Courses with a W following the course number satisfy the writing intensive requirement for liberal education.
A-F only.....A-F grade basis only; course may not be audited or take pass/fail
A-F or Aud .....A-F grade basis, or course may be audited for no grade
S-N only.....S-N grade basis only (pass/fail), course may not be audited or taken A-F
S-N or Aud.....S-N grade basis (pass/fail), or course may be audited for no grade
No Grade .....No grade will be given for the course; typically used for laboratory components of courses
OPT No Aud ....Student selects the grading option; course may not be audited
Stdnt Opt.....Student selects the grading option; course may be audited

Course Symbols

The following symbols are used throughout the course prerequisites of most University catalogs to denote common and recurring items of information.

=.....Credit will not be granted if credit has been received for the course listed after this symbol.
& .....Concurrent registration is required (or allowed) in the course listed after this symbol.
# .....Approval of instructor required for registration.
%.....Approval of department offering the course required for registration.
@ .....Approval of college offering the course required for registration.
,.....In prerequisite listings, comma means "and."
1-4 cr [max 6]....The course can be taken for 1 to 4 credits and may be repeated for up to 6 credits.

Course Listing Sample



Course Descriptions

Biochemistry (BIOC)

BIOC 3321—Biochemistry.(3 cr; Prereq-BIOL 2311, CHEM 2231, CHEM 2333 or #; A-F or Aud, spring, every year)
Introduction to amino acid and protein chemistry; Enzyme structure, function, and kinetics; lipids, and biological membranes; Bioenergetics; Carbohydrate and lipid metabolism and hormonal regulation of these processes; Glycolytic pathway, the gluconeogenic pathway, the pentose phosphate pathway, glycogen formation and degradation, the citric acid cycle, the respiratory chain, oxidative phosphorylation, photosynthesis, fatty acid and triacylglycerol formation and degradation. Introduction to modern experimental techniques.

Biology (BIOL)

BIOL 2311—Integrative Biology (BIOL) (5 cr; Prereq-[Grade of at least C- in [[MATH 1161 or equiv], [CHEM 1231 or equiv]]] or placement test; A-F or Aud, spring, every year)
Introduction to core biological concepts, from biomolecules to complex systems. How principles from biochemistry, cellular/molecular biology, genetics/diversity, and evolution contribute to understanding of complex systems. Problem solving, applications to health sciences. Lab.

BIOL 2331—Anatomy and Physiology I (BIOL) (4 cr; Prereq-Grade of at least C- in 2311 or placement test; A-F or Aud, fall, every year)
Shape, structure, and function of human body and its parts. Basic anatomy, structure, and function of body systems and special senses. Concepts/principles of body organization, histology, and hematology. Case studies, lab.

BIOL 2332—Anatomy and Physiology II (4 cr; Prereq-Grade of at least C- in 2331 or placement test; A-F or Aud, spring, every year)
Shape, structure, and function of human body and its parts. Basic anatomy, structure, and function of body systems and special senses. Concepts/principles of body organization, histology, and hematology. Case studies, lab.

BIOL 3311—Molecular Genetics (TS) (3 cr; Prereq-2311, CHEM 1231, CHEM 2331; A-F or Aud, fall, every year)
Introduction to genetic information, molecular aspects of inheritance, gene expression and regulation in cells/organisms, population genetics, mutation and molecular evolution, genome analysis, and pedigree construction. Emphasizes human genetics.

BIOL 3341—Microbiology (2 cr; Prereq-BIOC 2321, MATH 1171; [3341, &3342, &3345] fulfills 'biological sciences core' category under liberal education requirements; A-F or Aud, fall, every year)
Biology of bacteria, viruses, and fungi. Diversity, evolution, ecology. Structural/functional organization of microorganisms. Host-parasite interactions. Infectious diseases. Pathogenic microorganisms.

BIOL 3342—Microbiology and Environmental Issues (1 cr; Prereq-&3341; [3342, &3341] fulfills 'environment theme' category under liberal education requirements; A-F or Aud, fall, every year)
Population interaction within ecosystems. Molecular microbial ecology. Applications to health issues related to microbes in the environment. Case studies.

BIOL 3345—Microbiology Lab (1 cr; Prereq-&3341; A-F or Aud, fall, every year)
Techniques, experimental methods in microbial biology. Cultivation, isolation of microbial cultures. Physiological experiments. Taxonomy/anatomy of microorganisms.

BIOL 4312—Advanced Topics in Molecular and Cellular Biology and Genetics (4 cr; Prereq-3311, &BIOC 3321; A-F or Aud, fall, every year)
Molecular biology of prokaryotic and eukaryotic cells. Structure of genes and chromosomes. Mechanisms of DNA replication, transcription, translation. Regulation of gene expression. Processes fundamental to cells. Assembly/function of membranes/organelles. Cell division, cell form/movement, intercellular communication, transport, secretion pathways. Emphasis on molecular basis of cell functions. Lab. Effective: Fall 2012

BIOL 4364—Immunology (2 cr; Prereq-BIOC 3321; A-F or Aud, spring, every year)
Immune system. Its manifestation and mechanisms of action.

BIOL 4721—Special Topics in the Life Sciences (1.0–4 cr [max 8 cr]; Prereq-#; repeated enrollment allowed only if topics are different; A-F or Aud, fall, spring, offered periodically)
In-depth study of special topics in the life sciences.

Chemistry (CHEM)

CHEM 1231—Organic Chemistry I (PHYS) (4 cr; Prereq-&MATH 1161, [high school chemistry or equiv preferred and three years high school math required]; A-F or Aud, fall, every year)
Introduction to organic chemistry. Atomic theory of matter. Reaction stoichiometry, bonding, hybridization, functional groups, IR spectroscopy, thermochemistry, organic acids/bases, stereochemistry. Conformational analysis of cycloalkanes. Chemical kinetics. Classification of organic reactions. Aliphatic nucleophilic substitution reactions. Biological examples. Lab.

CHEM 2231—Organic Chemistry II (PHYS) (4 cr; Prereq-Grade of at least C- in 1231, &BIOL 2311; A-F or Aud, spring, every year)
Study of organic reactions (addition/elimination reactions, chemistry of carbonyl compounds, aromatic electrophilic substitution, rearrangements, oxidations and reductions); Biological examples. Introduction to the use of spectroscopic tools in structure elucidation (nuclear magnetic resonance, mass spectroscopy, Infrared and electronic absorption spectroscopy); Organic polymers and biologically important classes of organic compounds such as lipids, carbohydrates, amino acids, peptides, proteins, and nucleic acids; Lab.

CHEM 2331—General Chemistry I (3 cr; Prereq-Precalculus or equivalent; grade of at least C- in MATH 1161; BIOL 2311; 1231; A-F or Aud, fall, every year)
SI units, factor conversion and essential physical magnitudes. Structure, properties and behavior of gases, liquids and solids. Ideal gases. Thermochemistry. Nature of light and quantum atomic theory. Periodic table and periodic trends. Chemical bond and molecular structure. Intermolecular interactions and phase change. Solution chemistry and stoichiometry. Chemical equilibrium. Acid-base reactions. Chemical applications to Health Sciences.

CHEM 2332—Laboratory for General Chemistry I (1 cr; Prereq-&2331; A-F only, fall, every year)
Introduction to the quantitative and qualitative study on the properties and chemical reactions relevant to the health sciences. Study of experimental error and representation of data. Introduction to the use of chemistry laboratory material.

CHEM 2333—General Chemistry II (4 cr; Prereq-2331; MATH 1171; A-F or Aud, spring, every year)
Chemical kinetics and nuclear chemistry. Chemical thermodynamics and spontaneity of processes. Electrochemistry and redox reactions. Complex acid-base chemical equilibria: Acid-base buffers, titration curves and polyprotic acids. Equilibria of partially soluble substances. Coordination chemistry: structure and equilibria. Crystal field theory of coordination compounds. Experimental laboratory of General Chemistry.

CHEM 4721—Special Topics in Chemistry (1–4 cr [max 8 cr]; Prereq-#; repeated enrollment allowed only if topics are different; A-F or Aud, fall, spring, offered periodically)
In-depth study of special topics in chemistry.

Center for Learning Innovation (CLI)

CLI 1196—National Student Exchange: Plan A (0 cr; S-N only, fall, spring, summer, every year)
National Student Exchange enrollment; off-campus study.

CLI 1296—National Student Exchange: Plan B (0 cr; S-N only, fall, spring, summer, every year)
National Student Exchange enrollment; off-campus study.

CLI 1393—Directed Study (1-3 cr [max 3 cr]; Prereq-#, %; S-N or Aud, fall, spring, summer, every year)
Individual study on selected topics or problems.

CLI 1711—University Experience I (1 cr; Prereq-Admitted to Bachelor of Science in Health Sciences (BSHS); S-N or Aud, fall, every year)
Orientation to University environment. Student development. Communication.

CLI 1712—University Experience II (1 cr; Prereq-1711 or #; S-N or Aud, spring, every year)
Career planning. Effective leadership. Communication. Student development.

CLI 2522—Health, Culture, and Immigrant Communities in the US (2 cr; Prereq-#; A-F only, spring, every year)
The academic goals of this course are to foster multi-cultural competence and increase multi-national awareness of the complex social issues and health care issues that affect international (immigrant) communities in the US. Through discussion-based classroom experiences and meaningful on-site service-learning projects (community-based experiences), students will develop interpersonal and intercultural skills, strengthen community engagement understanding, and cultivate a better awareness of what it means to be a global citizen.

CLI 2711—Career Development I (1 cr; Prereq-1712 or #; S-N or Aud, fall, every year)
Active exploration of diverse career fields. Effective resumes, cover letters, and interviewing. Orientation to research and service opportunities. Orientation to postbaccalaureate programs. Capstone planning.

CLI 2712—Career Development II (1 cr; Prereq-2711 or #; S-N or Aud, spring, every year)
Active exploration of diverse career fields. Effective resumes, cover letters, and interviewing. Orientation to research and service opportunities. Orientation to postbaccalaureate programs. Capstone planning.

CLI 3390—Undergraduate Seminar (1 cr; Prereq-#, %; S-N or Aud, fall, spring, every year)
Faculty members lead groups of students in discussions on topics of current interest.

CLI 3393—Directed Study (1–3 cr [max 3 cr]; Prereq-#, %; S-N or Aud, fall, spring, summer, every year)
Individual study on selected topics or problems. Emphasizes selected readings, use of scientific literature.

CLI 3394—Directed Research (1–6 cr [max 6 cr]; Prereq-#, %; S-N or Aud, fall, spring, summer, every year)
Individual research on selected topics or problems.

CLI 3496—Internship: Professional Experience (1–6 cr [max 6 cr]; Prereq-#, %, acceptance of internship proposal; S-N or Aud, fall, spring, summer, every year)
Matches student's academic/career goals with opportunities in industry, nonprofit organizations, and government agencies.

CLI 3711—Leadership and Development I (1 cr [max 4 cr]; Prereq-CLI 2712 or #; S-N or Aud, fall, spring, every year)
Diverse fields of life/health sciences. Integration across disciplines. Career planning. Student development. Communication. Effective leadership. Preparation for postbaccalaureate programs.

CLI 3712—Leadership and Development II (1 cr; Prereq-3711 or #; S-N or Aud, spring, every year)
Diverse fields of life/health sciences. Integration across disciplines. Career planning. Student development. Communication. Effective leadership. Preparation for postbaccalaureate programs.

CLI 4496—Capstone Internship (6 cr; Prereq-[&4711 or 4712], acceptance of capstone proposal; S-N only, fall, spring, summer, every year)
Experience in industry, nonprofit organization, or non-government agency.

CLI 4696—Capstone Research Experience (6 cr; Prereq-[&4712 or 4712], acceptance of capstone proposal; S-N or Aud, fall, spring, summer, every year)
Research experience in academic or clinical setting.

CLI 4711—Reflections I (1 cr; Prereq-3712 or #; A-F or Aud, fall, spring, summer, every year)
Reflections on capstone experiences.

CLI 4712—Reflections II (1 cr; Prereq-4711 or #; A-F or Aud, fall, spring, summer, every year)
Reflections on capstone experiences.

CLI 4896—Capstone Certificate in Health Professions (6–15 cr [max 15 cr]; Prereq-[&4711 or &4712], acceptance of capstone proposal, full-time enrollment in certificate program; fall, spring, summer, every year)
Enrollment in certificate program courses in a health profession.

CLI 4950—Special Topics (1–3 cr [max 3 cr]; Prereq-#, %; A-F or Aud, fall, spring, every year)
In-depth study of special topic related to BSHS program.

Echocardiography (ECHO)

ECHO 3011—Foundations of Echocardiography (8 cr; A-F only, fall, every year)
The intent of this course is to provide the student with a basic knowledge of performing an echocardiographic exam including two-dimensional imaging, Doppler, Color Flow imaging, patient care, transducer placement, imaging skills, assessment of systolic and diastolic function by echocardiography, basic instrumentation of ultrasound physics and echocardiographic terminology. Students will participate in scanning labs in preparation for their clinical experience. Two-dimensional (2-D) and Doppler skills and competency testing will be completed during scanning labs. Students will apply 2-D and Doppler echocardiography skills learned in the classroom to echocardiographic exams performed in scanning lab demonstrating an understanding of the clinical application of echocardiography.

ECHO 3101—Cardiovascular Anatomy & Physiology (2 cr; A-F only, fall, every year)
The course is designed to provide the student with an in-depth understanding of gross and cross-sectional cardiac anatomy and an understanding of normal cardiac physiology. The concepts of cardiovascular physiology will include circulation blood flow, the cardiac cycle, electrical and mechanical properties of the heart, and blood flow hemodynamics of the arterial and venous system. This course will provide the foundation for advanced physiologic concepts and Doppler hemodynamic assessment in subsequent courses.

ECHO 3202—Adult Echocardiography I (2 cr; A-F only, spring, every year)
The intent of this course will provide the student with the necessary knowledge of cardiomyopathies coronary artery disease. The course will focus on the echocardiographic assessment of dilated, hypertrophic and restrictive cardiomyopathies by 2-D, M-mode, Doppler and Color Flow imaging. This course will also provide the student an understanding of coronary anatomy and distribution, pathophysiology of coronary heart disease, and the echocardiographic assessment of coronary heart disease and left ventricular assist devices. The course will also allow for students to get a basic understanding of Nuclear, CT, MRI, Cath Lab procedures and the information they can provide about the heart.

ECHO 3212—Adult Echocardiography II (2 cr; A-F only, spring, every year)
The intent of this course is to provide the student with the necessary knowledge for the echocardiographic assessment of valvular heart disease (stenosis, regurgitation, and prosthetic valves). Course content will include echocardiographic appearance of normal valve function and evaluation of valve area, mean gradient, regurgitant volume, and effective regurgitant orifice. This course will also include anatomy and clinical indications of TEE and provide students with the knowledge required to use the continuity equation and PISA formula and proper techniques for evaluating prosthetic valves.

ECHO 3222—Adult Echocardiography III (2 cr; A-F only, spring, every year)
The intent of this course is to provide the student with basic knowledge of major cardiac pathophysiology by covering the following: cardiac diseases due to systemic illness; pericardial disease; systemic and pulmonary hypertension; cardiac tumors and masses; and diseases of the great vessels. The course will include complete 2-D, M-mode, and Doppler assessment of the listed cardiovascular disorder and provide basic knowledge of and the sonographer's role during pericardiocentesis.

ECHO 3301—Clinical Practicum I (3 cr; S-N only, fall, every year)
The intent of this course is to provide the student with an opportunity to perform portions of an echo exam, review position, transducer placement, and terminology in the clinical setting. Two-dimensional (2-D) and Doppler skills learned in Foundations of Echocardiography will be applied in the clinical setting. Clinical Practicum I will provide the student with the opportunity to observe the clinical environment, understand the clinical application of echocardiography, and interact with clinical staff.

ECHO 3302—Clinical Practicum II (7 cr; A-F only, spring, every year)
The intent of this course is to continue to provide the student with the necessary skills and knowledge to integrate academic and clinical learning. Course content will include review of how to perform a routine two-dimensional, Color Flow, and Doppler echocardiography examination and the development of skills necessary to do a complete hemodynamic and Doppler assessment. Course will use hands-on experience to help develop the skills required to do a hemodynamic assessment.

ECHO 3403—Echocardiographic Application (3 cr; A-F only, summer, every year)
The intent of this course is to integrate knowledge from previous courses. This course will focus on case reviews and the integration of all 2-D and Doppler data. Students will be able to demonstrate application of echocardiographic data and recognize discrepancies in data, ability to identify key findings, ability to create a preliminary report, and effectively communicate the echo findings to the reviewer. **Effective:** Summer 2012

ECHO 3503—Stress Echocardiography (2 cr; A-F only, summer, every year)
This course will provide the student with the necessary knowledge regarding common lab values, ECG, and basis cardiac pharmacology along with a thorough understanding of the different types of stress tests performed in an echocardiographic laboratory and the technical aspects of the digitizing equipment. The role of the sonographer for each procedure will be identified. Students will develop an in-depth understanding of exercise echocardiography and the use of Dobutamine and contrast during a stress echo. The lab sessions for stress echocardiography will allow students the opportunity to demonstrate the required skills. **Effective:** Summer 2012

ECHO 4111—Ultrasound Physics I (2 cr; A-F only, summer, every year)
This course is designed to introduce the student to basic physics principles and instrumentation used in diagnostic ultrasound. The course will describe basis ultrasound physics principles, formulae and calculations as well as describe ultrasound itself. Key areas to be covered include: the properties of sound waves, principles of reflection, transmission, scattering and refraction; principles of attenuation and components of sound energy loss; transducer construction and function; sound beam "anatomy"; spatial resolution; transducer array technology; sound beam steering, and focusing. The course goal is to help the student understand the process by which an image is created, and ultimately identify ways to produce an optimal echo image. **Effective:** Summer 2012

ECHO 4112—Ultrasound Physics II (2 cr; A-F only, fall, every year)
The course is designed to expand the information learned in Ultrasound Physics I and provide new information regarding theory and operation of diagnostic ultrasound equipment. The course will describe 2-dimensional imaging principles and instrumentation, image storage and display, the Doppler effect, pulsed and continuous wave Doppler generation, spectral analysis and display, color flow imaging, image features and artifacts, quality assurance, bioeffects and safety, and will introduce students to newer technologies including contrast and tissue harmonics, Doppler tissue imaging, and power Doppler. The course goal is to help the student understand the process by which an image is created, Doppler information is generated and displayed, and identify ways to produce high quality, diagnostic echocardiographic information. **Effective:** Fall 2012

ECHO 4201—Vascular Imaging (1 cr; A-F only, fall, every year)
This course will provide the student with the necessary knowledge regarding an understanding of vascular anatomy, pathophysiology, treatment/interventions and normal and abnormal sonographic appearance of the abdominal aorta, lower extremity vasculature and carotid arteries. The lab sessions for vascular will allow students the opportunity to demonstrate the required skills for performing a carotid intima media thickness exam. **Effective:** Fall 2012

ECHO 4211—Congenital Heart Disease (2 cr; A-F only, fall, every year)
The intent of this course is to provide the student with advanced knowledge of anatomy of congenital cardiac abnormalities, adult congenital heart disease (CHD), and follow-up of these patients. Surgical repair and interventional catheterization or methods will be discussed as well as postoperative complications. The student will also be provided necessary information on performing a systematic 2-D, spectral, and Color Flow Doppler examination on a patient with CHD. **Effective:** Fall 2012

ECHO 4303—Clinical Practicum III (7 cr; A-F only, summer, every year)
Clinical Practicum III will primarily focus on development of students clinical skills for 2-Dimensional and Doppler echocardiography. Clinical Practicum III is devoted to clinical training, allowing students an opportunity to apply didactic classroom instruction and develop their clinical skills. Students will begin to integrate the clinical and echo findings and identify final impressions related to the echo exam. Observational rotations will include intraoperative TEE, Outreach echocardiography, Stress Echocardiography, TEE and contrast echocardiography. 3D and strain rate echocardiography and the role of the sonographer for each procedure will also be included in this course. Lab sessions will allow students the opportunity to demonstrate the required skills for 3D and strain rate imaging. **Effective:** Summer 2012

ECHO 4401—Clinical Practicum IV (8 cr; A-F only, fall, every year)
Clinical Practicum IV will continue to develop the student's clinical skills to complete an optimal echocardiographic hemodynamic assessment. The focus of the term will be the ability to integrate 2-D and echo data in an accurate patient report. Clinical Practicum IV will introduce students to congenital echocardiography, to the field of stress echocardiography, and to echocardiographic research. **Effective:** Fall 2012

ECHO 4402—Clinical Practicum V (12 cr; A-F only, spring, every year)
During Clinical Practicum V, the students will apply previous didactic and clinical training to complete a quality echocardiographic examination. Students will be responsible for integrating echo data, preparing preliminary echo findings and delivering the report. **Effective:** Spring 2013

ECHO 4501—Research Project and Publication I (1 cr; A-F only, spring, every year)
Students will be responsible for devising, developing and undertaking a research project which would be suitable for submission either to a scientific meeting or for publication. This will include developing a research question, devising and submitting a research protocol, reviewing related literature, and reporting the findings in abstract, paper, and/or a short oral presentation. Research mentors will be assigned to allow guided independent study. **Effective:** Spring 2013

Health Informatics (HINF)

HINF 3173—Introduction to Health Informatics. (3 cr; Prereq-PUBH 2561; A-F or Aud, spring, every year)
Historical development of U.S. health system. Development of health systems. Future directions of health care. Concepts/practices of health informatics. Decision support methods/technologies. Information storage and communications. Analysis, design, usability, implementation, and evaluation of health care information systems. **Effective:** Spring 2012

Health Professions (HP)

HP 4802—Health Care Delivery Systems and Finance (3 cr [max 6 cr]; A-F only, spring, every year)
Students explore health care delivery systems including a review of health economics, third party and public reimbursement, and contemporary trends in health care organization, management and administration. Regulations, standards, quality assurance, accreditation and ethical issues are considered in the context of contemporary medical practice. Future implications for health care providers and professionals, patients and families, communities, and international health are included. This course will also provide an understanding of finance in the health care industry through a discussion of how the health care industry's financial information is interpreted and used. The course aims to make the language of health care finance understandable and relevant for students in health care professions. **Effective:** Spring 2013

HP 4902—Leadership and Management in Health Professions (2 cr [max 4 cr]; A-F only, spring, every year)
Students acquire background and skills in the business and administrative aspects of health care. Applications of business theory are applied to medical settings including organization models, reimbursement methodologies, information systems, staff scheduling, employee evaluation, accreditation agencies, productivity management, budget planning and group leadership. **Effective:** Spring 2013

Humanities (HUM)

HUM 1431—Introduction to Philosophy (AH) (3 cr [max 6 cr]; A-F or Aud, fall, spring, every year)
Introduction to methods of philosophical analysis. Examines a range of problems relevant to the sciences and to diverse global, cultural, scientific and religious traditions in historical and cultural contexts. Emphasis on critical thinking, communication and relevance to health sciences.

HUM 1433—Introduction to Literature (LITR) (3 cr [max 6 cr]; A-F or Aud, fall, spring, every year)
Introduces literary genre and critical thinking. Focuses on the relationship between language and meaning in social and historical contexts. Emphasizes integration with sciences and relationship to health sciences.

HUM 1435—Introduction to History (HIS, GP) (3 cr; A-F or Aud, fall, spring, every year)
How historical knowledge is produced from artifacts (primary sources). Value/limitations of such sources. Approaches to the past. Thinking critically about assumptions/assertions.

HUM 1441—Introduction to Ethics (CIV) (3 cr; Prereq-1431 or #; A-F or Aud, spring, every year)
Introduction to the philosophical analysis of ethical problems. Introduces ethical cases and explores methods of analysis and application of these methods to issues affecting people in everyday life. Ethical problems may be drawn from biomedicine, environment, globalization, business and sport. Emphasis on critical thinking and relevance to health sciences.

HUM 3437—History and Philosophy of Science (HIS, TS) (3 cr; Prereq-1431 or 1433 or 1435 or 1441 or #; A-F or Aud, spring, every year)
History and Philosophy of Science

HUM 3441—Ethics of Medicine and Sciences (CIV) (3 cr; Prereq-1441 or SOC 1641 or #; A-F or Aud, fall, every year)
Analysis of ethical problems, focusing on historical cases and contemporary issues. Includes sustained critical exploration of a range of problems that may be drawn from law, medicine, health care, emerging technologies and the sciences. Emphasis on critical thinking and relevance to health sciences.

HUM 3471—Literatures of Diversity (DSJ) (3 cr; Prereq-[1431 or 1433 or 1435] or #; A-F only, spring, every year)
Historical/contemporary analysis of the development of selfhood and identity in and across literatures of diverse populations and cultures. The course could address concerns that may include, but are not limited to race, gender, sexuality, ethnicity, religion, and issues of power/privilege.

HUM 3481—Technology and Society (TS) (3 cr; Prereq-[1431 or 1433 or 1435] or #; A-F only, fall, every year)
Historical/contemporary analysis of technology. The course explores ways in which technology influences, and is influenced by, cultures and their values and how technology figures in modes of truth production. The course could explore perspectives that may include, but are not limited to, the cultural, the philosophical, the historical and the literary. Effective: Fall 2012

HUM 4721—Special Topics in Humanities (1–4 cr [max 8 cr]; Prereq-#; repeated enrollment allowed only if topics are different; A-F or Aud, fall, spring, offered periodically)
In-depth study of special topics in the humanities.

Mathematics (MATH)

MATH 1090—College Algebra Short Course (1 cr; A-F or Aud, fall, every year)
Review of fundamental concepts of algebra; set notations; introduction to function notation and graphs.

MATH 1111—College Algebra, Trigonometry, and Precalculus (MATH) (3 cr; Prereq-Three yrs high school math or placement exam; A-F or Aud, fall, spring, every year)
Algebra, polynomial/rational functions, exponential/logarithmic functions, trigonometric functions, complex numbers. Composition of functions. Inverse functions, graphing. Beyond usual coverage in three-year high school mathematics.

MATH 1161—Statistics and Discrete Mathematics (MATH) (3 cr; Prereq-Three yrs high school math or placement exam; A-F or Aud, fall, every year)
Data representation/visualization/exploration. Descriptive statistics, hypothesis testing, regression, predictions, clinical studies, counting, elementary probability theory, distributions, graphs, networks. Emphasizes statistical concepts, analysis of authentic data sets, simulations, and model building.

MATH 1171—Calculus, Modeling, and Data I (MATH) (3 cr; Prereq-Grade of at least C- in 1111 or placement exam or #; A-F or Aud, fall, spring, every year)
Differential/integral calculus of a single variable. Optimization. Differential/difference equations. Related rates. Applications emphasize biology, health sciences, and integration of data and mathematical models.

MATH 2171—Calculus, Modeling, and Data II (MATH) (3 cr; Prereq-Grade of at least C- in 1171 or placement exam; A-F or Aud, spring, every year)
Differential/integral calculus of a single variable. Differential calculus of multiple variables. Systems of differential/difference equations. Matrices. Deterministic/stochastic modeling. Applications emphasize biology, health sciences, and integration of data and mathematical models.

MATH 3171—Bioinformatics and Biostatistics (3 cr; Prereq-Grade of at least C- in [1171, BIOL 2311]; A-F or Aud, fall, every year)
Obtain sequence information from public sources (websites, journal papers, and other media); sequence recognition; sequence alignment; phylogenetic analysis; clinical trial and/or experiment design; Logistic and linear regression on clinical trial data; Survival analysis of clinical trial data.

MATH 4721—Special Topics in the Mathematical Sciences (1.0–4 cr [max 8 cr]; Prereq-#; repeated enrollment allowed only if topics are different; A-F or Aud, fall, spring, offered periodically)
In-depth study of special topics in the mathematical sciences.

Physics (PHYS)

PHYS 1251—Physics I (PHYS, TS) (4 cr; Prereq-Grade of at least C- in [MATH 1171 or equiv] or & MATH 1171; A-F or Aud, fall, every year)
Fundamental principles of physics. Description of motion, forces, conservation, waves. Electricity/magnetism. Thermodynamics/kinetics. Information coding, including sound detection and visual perception. Focuses on biological applications. Lab.

PHYS 2251—Physics II (PHYS) (4 cr; Prereq-Grade of at least C- in [1251 or equiv]; A-F or Aud, spring, every year)
Fundamental principles of physics. Electricity/magnetism. Application of electromagnetic radiation to biological systems, including photosynthesis, phototransduction, and x-ray imaging. Mass and heat transport, including hydrodynamic flow, osmosis, and diffusion. Quantum mechanics, its application to biological systems. Feedback systems. Focuses on biological applications. Lab.

Psychology (PSY)

PSY 1511—Psychology (SOCS) (3 cr; A-F or Aud, fall, spring, every year)
Scientific study of behavior and mental processes. Analysis of historical and contemporary paradigms in psychology, research methods, sequence and processes of human development, and the joint contribution of biological and environmental influences on behavior.

PSY 3511—Human Development across the Lifespan (3 cr; Prereq-PSY 1511; A-F or Aud, fall, every year)
This course will emphasize the diverse cultural, social, socioeconomic, and historical contexts of human development throughout the lifespan and explore how these contexts directly influence biosocial, cognitive and psychosocial aspects human development. The course will cover the basic principles of human development including: major paradigms, research methods, the sequences and processes of development, and the joint contributions of biological and environmental influences.

PSY 3512—Principles of Abnormal Psychology (3 cr; Prereq-(PSY 1511 or equiv) or #; A-F or Aud, spring, every year)
Abnormal psychology is the study of the classification, explanation and treatment of abnormal phenomena and mental disorder. In this course we will focus on the major concepts and controversies in the field. We will consider how abnormality is defined and classified, and how the biological, psychological, and sociocultural paradigms contribute to understanding and treating individuals with mental disorder. The multicausality of mental disorder will be understood using a diathesis-stress model. Common types of mental disorders will be covered with an emphasis on the phenomenology of the disorder (i.e., what it is like to have the disorder), the biopsychosocial causes of the disorder, and the major treatment approaches. Attention will be given to appreciating the impact of abnormal mental phenomena on the sufferer and their loved ones, and examining the values and ethics that apply to working with people with mental disorder.

Public Health (PUBH)

PUBH 2561—Public Health: A Global Perspective (GP) (3 cr; Prereq-MATH 1161; A-F or Aud, fall, spring, every year)
Introductory overview of public health; history and contemporary principles, core disciplines, systems, problems/challenges, applications, career opportunities, etc. Discussion of the complementary roles of public health and healthcare systems in developed and developing countries. Application of public health principles to case studies from around the globe.

PUBH 3361—Epidemiology and Public Health (3 cr; Prereq-2561, BIOL 2311; A-F or Aud, fall, every year)
History of epidemiology. Public health surveillance. Measures of risk. Disease outbreaks. Prevention/treatment in resource-limited countries and marginalized populations. Government policies. Case studies.

PUBH 3561—Environmental Health and Environmental Justice (ENV, SOCS) (3 cr; Prereq-(2561 and BIOL 2311) or #; A-F or Aud, spring, every year)
This course explores how environments—both natural and built—can negatively impact human health outcomes. We will examine major environmental health issues; exposures/causes as well as possible approaches or interventions for reducing associated disease burdens in developing and developed countries. The course also provides an introduction to the concept of environmental justice or notion that all communities, regardless of socioeconomic status, should bear an equal burden of environmental hazards.

Radiography (RADI)

RADI 3011—Foundations of Radiography (2 cr; A-F only, fall, every year)
This course introduces students to the profession and provides a foundation for understanding the radiographer's role in a radiology department. The radiographer's ethical responsibility to their profession, institution and the diverse patient population is clarified through the introduction of the Radiographer's Code of Ethics and the Patient's Bill of Rights. The course will introduce radiographic positioning terminology as it relates to patient anatomy, exposure factors and corresponding technique chart use, interaction with patients, and methods to ensure radiation protection for patients and healthcare workers. **Effective:** Fall 2012

RADI 3021—Patient Care Techniques (2 cr; A-F only, fall, every year)
This course will provide instruction required for students to become competent in performing the six patient care activities required of radiographers; CPR, patient vital signs (blood pressure, pulse, and respirations), sterile and aseptic techniques, venipuncture, patient transfers, and proper use and care of patient medical equipment. In addition the course will focus on patient and staff safety concerns in the following areas: infection control including utilizing universal precautions, identifying and responding to medical emergencies, reporting safety "events," environmental safety precautions, immobilization techniques, proper use of radiographic contrast material and pharmacological agents and utilizing mobile equipment outside the radiology department. **Effective:** Fall 2012

RADI 3101—Radiographic Procedures I (3 cr; A-F only, fall, every year)
This course provides a review of the anatomy of the skeletal systems of the upper and lower limbs, the respiratory system and abdomen. Routine radiographic anatomy as well as pathology and traumatic changes demonstrated on radiographic images will be included. Methods to modify standard positioning for trauma, pathology and pediatric patients are presented. Positioning considerations and evaluating radiographs will be emphasized. **Effective:** Fall 2012

RADI 3102—Radiographic Procedures II (7 cr; A-F only, spring, every year)
This course provides a review of the anatomy of the axial skeletal system and skull, the gastrointestinal system and the urinary system. Radiographic positioning instruction utilized to demonstrate the anatomy of the systems listed above is proved in this course. Routine radiographic anatomy as well as pathology and traumatic changes demonstrated on radiographic images will be included. Methods to modify standard positioning for trauma, pathology and pediatric patients are presented. Positioning considerations and evaluating radiographs will be emphasized. **Effective:** Spring 2013

RADI 3111—Radiation Physics (2 cr; A-F only, fall, every year)
This course provides the student with an analysis of physics concepts in velocity, acceleration, force, weight, momentum, work, power, heat, magnetism, energy and anatomic structure, and their application for problem solving as they relate to x-ray production. The course provides an explanation of the function that electricity, magnification, transformers, and rectification play as components of x-ray circuitry. The components of the x-ray tube, their function, relations to one another and contribution to the production of x-rays are discussed and explained. **Effective:** Fall 2012

RADI 3202—Principles of Radiographic Exposure (2 cr; A-F only, spring, every year)
This course begins with x ray production. The emission spectrum from tungsten and molybdenum targets is described. Interactions of radiation with matter, dose and the radiologic image are presented. The effect of scattered and secondary radiation on image quality and methods of control are included. Image receptors (film/screen) are discussed in terms of structure, function, types, and uses. The role of the primary variables (kVp, time mA, and SIRD) in radiography is presented. Their effects on density, contrast, and visibility of detail are defined. Methods of exposure calculation for changes in the primary variables are reviewed. Systems for building workable technique charts are presented. **Effective:** Spring 2013

RADI 3301—Clinical Practicum I (5 cr; A-F only, fall, every year)
The course consists of two components; a lab practicum and a 16-week clinical rotation in the following clinical areas on the Mayo Clinic campus: Gonda 14 Orthopedics , Gonda 15 Cast room/hand clinic, Mayo Chests, Mayo EXU, Mayo GI, Mayo Pediatrics, SMH General, SMH Surgery, RMH General, RMH Surgery, Baldwin General,. Lab practicum encompasses the nursing skills covered in the Patient Care course as well as anatomy, positioning and film critique of the projections covered in the Radioiographic Procedures I course. **Effective:** Fall 2012

RADI 3302—Clinical Practicum II (5 cr; A-F only, spring, every year)
The course consists of two components; a lab practicum and an 16-week clinical rotation in the following clinical areas on the Mayo Clinic campus: Gonda 14 Orthopedics, Gonda 15 Cast room/hand clinic, Mayo EXU, Mayo GI, Mayo GI Nursing, Mayo Pediatrics, Computerized Tomography, Magnetic Resonance Imaging, Neuro-cardiovascular Imaging, SMH General, SMH Surgery, SMH Non-regular hours, SMH GI, RMH General, RMH Surgery, and Baldwin General. Lab practicum focuses on routine positioning and techniques of the spine and skull. **Effective:** Spring 2013

RADI 3503—Radiographic Factor Analysis (1 cr; A-F only, summer, every year)
Theoretical concepts and mathematical formulas needed to adjust exposure techniques in radiography practice will be presented in this course. Students will solve algebraic equations to determine how to make adjustments to exposure factors when changes to mA, time, kVp, screens, grids or distance are necessary. The concepts discussed are used by practicing radiographers every day in order to determine and adjust technical factors while producing images. **Effective:** Summer 2013

RADI 3603—Applied Radiography Topics (1 cr; A-F only, summer, every year)
The Applied Radiography Course requires the student to perform a literature review of a radiologic topic of their choice and write a paper exploring the topic. The topic of the paper must directly pertain to the imaging field. The paper will include the purpose, method and scope of the literature search. The student will draw on the information and opinions of others who have written on the topic and offer their own significant opinions on the issues discussed. The paper requirements dictate that it must include 4-6 pages of text in the body of the paper and be written according to the American Psychological Association, 6th Edition (APA) writing style. A minimum of 5 references, 2 of which must be peer-reviewed journal articles, are required. **Effective:** Summer 2013

RADI 4101—Radiographic Procedures III (3 cr; A-F only, fall, every year)
This course provides an introduction to MRI, CT, Mammography and Neuro-cardiovascular imaging. The history, theory and required equipment for the imaging modality is presented, along with an discussion on of exams performed in each area. Emphasis is placed on anatomy visualized by each modality. **Effective:** Fall 2013

RADI 4241—Radiation Protection Advanced Imaging (3 cr; A-F only, fall, every year)
This course reviews the types and sources of radiation and their interactions with matter. Effects of high doses on biologic systems are described, and effects of low doses on populations are presented. Elements of radiation protection are included. Quality management concepts, measurements, interpretation, and correcting actions, and governmental regulations insuring compliance are presented. The theoretical concepts and practical application of fluoroscopy, tomography, automatic exposure control, and duplication of radiographs are discussed. **Effective:** Fall 2013

RADI 4303—Clinical Practicum III (6 cr; A-F only, summer, every year)
The course consists of two components; a lab practicum and a 16-week clinical rotation in the following clinical areas on the Mayo Clinic campus: Gonda 14 Orthopedics, Gonda 15 Cast room/hand clinic, Mayo EXU, Mayo GI, Mayo Pediatrics, SMH General, SMH Surgery, SMH trauma/portables, SMH Non-regular hours, SMH GI, RMH General, RMH Surgery, and Baldwin General. Lab practicum focuses on the anatomy, positioning and film critique of the projections covered in the Radiographic Procedures I and II courses and exposure factors learned in the Principles of Radiographic Exposure course. **Effective:** Summer 2013

RADI 4401—Clinical Practicum IV (7 cr; A-F only, fall, every year)
The course consists of two components; a lab practicum and a 16-week clinical rotation in the following clinical areas on the Mayo Clinic campus: Gonda 14 Orthopedics, Gonda 15 Cast room/hand clinic, Mayo EXU, Mayo GI, Mayo Pediatrics, SMH General, SMH Surgery, SMH trauma/portables, SMH Non-regular hours, SMH GI, RMH General, RMH Surgery, and Baldwin General. Lab practicum focuses on the anatomy, positioning and film critique of the projections covered in the Radiographic Procedures I and II courses and exposure factors learned in the Principles of Radiographic Exposure course. **Effective:** Fall 2013

RADI 4402—Clinical Practicum V (8 cr; A-F only, spring, every year)
The course consists of two components; a lab practicum and a 16-week clinical rotation in the following clinical areas on the Mayo Clinic campus: Gonda 14 Orthopedics, Gonda 15 Cast room/hand clinic, Mayo Pediatrics, Computerized Tomography, Magnetic Resonance Imaging, Neuro-cardiovascular Imaging, SMH General, SMH Surgery, SMH Non-regular hours, SMH GI/QA, RMH General, RMH Surgery, Baldwin General and optional rotations to Mammography and Lake City Medical Center. **Effective:** Spring 2014

Respiratory Care (RESP)

RESP 3011—Foundations of Respiratory Care (2 cr; A-F only, fall, every year)
This course reviews the clinical roles/responsibilities and career options within the fields of respiratory care. In addition, this course provides students with a solid foundation in professional attributes, cardiopulmonary science, chemical and physics relationships, and mathematical skills to promote success as they begin the clinical-based curriculum. Students explore respiratory care subspecialties and role differences in various clinical settings. Class includes laboratory sessions, discussion, simulation and role-playing.

RESP 3021—Patient Care Techniques (2 cr; A-F only, fall, every year)
This course introduces students to the fundamental practice, attitudes and competencies needed by all health care providers including respiratory care practitioners. Communication skills, infection control, vital signs and patient assessment are reviewed. General care techniques performed by both respiratory and nursing personnel are mastered, including moving transfer of patients. Specific care for special problems is reviewed, including immobilized patients such as those receiving mechanical ventilation.

RESP 3101—Respiratory Care Modalities and Equipment I (4 cr; A-F only, fall, every year)
Students will become proficient in performing non-invasive monitoring and therapeutic procedures, including medical gas therapy, humidity and aerosol therapy, bronchial drainage and volume expansion therapy. Commonly prescribed aerosol medications will also be reviewed. Learners will practice skills using simulation-based education and in a laboratory setting. Procedures will be discussed in the context of national practice guidelines as to the scientific rationale, limitations, hazards and complications, issues of asepsis and modification to adapt to patient needs.

RESP 3102—Respiratory Care Modalities and Equipment II (4 cr; A-F only, spring, every year)
Students will become competent in the implementation and operation of a range of invasive monitoring devices and life support technology used in care of the critically ill patient. Learners will practice skills using simulation-based medical education and in a laboratory setting. This will include airway management, electrocardiogram hemodynamic and respiratory monitoring, and mechanical ventilation for perinatal, pediatric and adult patients.

RESP 3201—Cardiopulmonary Patient Assessment (4 cr; A-F only, fall, every year)
Patient assessment skills are developed to allow students to both gather and interpret a wide range of patient data. This would include the medical record, patient interview, physical examination, medical laboratory tests, pulmonary function reports (including blood gas analysis), hemodynamic record and radiographic imaging. Cardiopulmonary diseases are introduced with emphasis on pathophysiological manifestations that can be assessed. The laboratory provides a setting for role playing, mock exams and practice of assessment skills. A weekly bedside teaching case review is designed to integrate coursework, examination skills as well as the human aspect of patient care. The Mayo Multidisciplinary Simulation Center allows practice and debriefing of assessment skills in a safe environment.

RESP 3202—Advanced Cardiopulmonary Physiology and Pathophysiology (3 cr; A-F only, spring, every year)
The first half of the course will provide students with a detailed review of the physiology of cardiovascular and pulmonary systems. The second section involves a review of adult, pediatric and perinatal cardiopulmonary disorders. Emphasis will be placed on integrating assessment, laboratory evaluation, major pathology, pathophysiologic manifestations and treatment options with focus on respiratory care. A bi-weekly bedside patient case review allows interaction with patients and application of coursework on cardiopulmonary disorders. The Mayo Multidisciplinary Simulation Center allows. Students to apply skills, knowledge and develop as reflective practitioners using simulated patients in a safe environment.

RESP 3301—Clinical Practicum I (4 cr; S-N only, fall, every year)
Students begin a series of rotations including 18 different clinical areas at the Mayo Medical Center. Each rotation requires completion of specific competencies. Those areas include 9 intensive care units, the operating room, emergency room, general floor care areas, pulmonary function labs, sleep disorders center, smoking cessation clinic, pulmonary rehabilitation program, home care and outpatient clinic. Learners will practice and master skills using simulation-based medical education. Students will perform respiratory care procedures and diagnostic testing with the supervision of a clinical instructor.

RESP 3302—Clinical Practicum II (4 cr; S-N only, spring, every year)
Students continue a series of rotations including 18 different clinical areas at the Mayo Medical Center. Those areas include 9 intensive care units, the operating room, emergency room, general floor care areas, pulmonary function labs, sleep disorders center, smoking cessation clinic, pulmonary rehabilitation program, home care and an outpatient clinic. Learners will practice and master skills using simulation-based medical education. Students will expand their competencies in adult as well as perinatal & pediatric critical respiratory care.

RESP 3401—Seminar in Respiratory Care I (1 cr; A-F only, fall, every year)
Students will attend weekly conferences and seminars in which issues and cases of clinical importance in respiratory care will be discussed. Students will, with faculty guidance, prepare a presentation on a topic and lead class discussion on the topic presented. The emphasis will be on a critical review of the medical literature. Effective presentation skills will be covered. (1 hour-either Pulmonary & Critical Care Medicine Case Conference or Combined Critical Care Conference) and 1 hour seminar weekly).

RESP 3402—Seminar in Respiratory Care II (1 cr; A-F only, spring, every year)
Students will attend weekly conferences and seminars in which cases and issues of clinical importance in respiratory care will be discussed. Students will prepare and present a case presentation and lead discussion on the case and issues raised by the case. The relevant medical literature will be critically reviewed. In the second part of the course students will gain familiarity with the common forms of medical literature and be introduced to the critical appraisal of published articles in a seminar format.

RESP 3502—Clinical Research: Literature, Methodology, and Application (3 cr; A-F only, spring, every year)
Students will become readers and writers of research literature, especially that literature which pertains to health care. Students will learn the methodologies of scientific investigation. Students will learn to become constructive critics of scientific investigation. The course provides study content in scientific writing, statistics, research study design including problem statement development and protocol development, research questions or hypothesis development, feasibility analysis, sampling methods and instruments, data management, data analysis and interpretation, and dissemination of research.

RESP 4311—Advanced Perinatal and Pediatric Respiratory Care (2 cr; A-F only, fall, every year)
The didactic course combined with its clinical counterpart will allow students to assume the role of the perinatal/pediatrics specialist as defined by the National Board for Respiratory Care (NBRC). A thorough review of the literature on mechanical ventilation, monitoring applied with emphasis on an evidence-based care, will be provided. Current strategies for extended mechanical ventilation or other forms of long-term support will be reviewed using case study examples. **Effective:** Fall 2012

RESP 4321—Advanced Cardiopulmonary Diagnostics (2 cr; A-F only, fall, every year)
Students will review the rationale and methods used in cardiopulmonary diagnostics. This course along with its clinical counterpart will allow students to assume the role of the advanced pulmonary function technologist and complete the NBRC's CPFT specialty board exams. Procedures in which participants would become competent include inert gas and body plethysmographic measurement of lung capacity, diffusion studies, bronchial provocation, and heart & lung function during maximal exercise. Interpretation of results and quality control in the laboratory will be facilitated by case reviews and laboratory experiences. **Effective:** Fall 2012

RESP 4331—Cardiopulmonary Rehabilitation, Disease Prevention and Case Management (1 cr; A-F only, fall, every year)
Students will review the delivery of care to chronically ill patients with lung and heart disorders with emphasis on respiratory care. The rehabilitation process will be applied to hospital-based program, extended care facilities and in the home. Topics include clinical testing, exercise prescriptions, and practice guidelines for management. Patient care reviews as part of the laboratory will underscore the multidisciplinary approach to case management and responsibilities unique to the respiratory therapist. This course along with its clinical counterpart will allow students to perform the responsibilities attributed to this subspecialty in respiratory care. Students will become certified asthma educators.

RESP 4341—Clinical Practicum III: Advanced Respiratory Care (3 cr; S-N only, fall, every year)
Students will complete competencies focused in the areas of advanced-level respiratory care including clinical subspecialties and related areas important to the respiratory care practitioner desiring greater scope of practice. Learners will practice and master skills using simulation-based medical education. Advanced Perinatal and Pediatric Respiratory Care: Clinical experiences in high-risk delivery, perinatal & pediatric intensive, inter-hospital transport and chronic care. Advanced Cardiopulmonary Diagnostics: Clinical experiences in pulmonary function testing including lung volume measurement, diffusion studies, exercise testing, sleep diagnostics, ventilation control, indirect calorimetry, provocation testing, oxygen titration and laboratory quality control. Cardiopulmonary Rehabilitation, disease prevention and case management: Clinical experiences in cardiopulmonary rehabilitation including cardiopulmonary disease assessment, disease prevention, patient family education, evaluation of impairment/disability, exercise training and social and psychological considerations. **Effective:** Fall 2012

RESP 4342—Clinical Practicum V: Advanced Respiratory Care (3 cr; S-N only, spring, every year)
Students will complete competencies focused in the areas of advanced-level respiratory care including clinical subspecialties and related areas important to the respiratory care practitioner desiring greater scope of practice. Learners will practice and master skills using simulation-based medical education. Advanced Perinatal and Pediatric Respiratory Care: Clinical experiences in high-risk delivery, perinatal & pediatric intensive, inter-hospital transport and chronic care. Advanced Cardiopulmonary Diagnostics: Clinical experiences in pulmonary function testing including lung volume measurement, diffusion studies, exercise testing, sleep diagnostics, ventilation control, indirect calorimetry, provocation testing, oxygen titration and laboratory quality control. Cardiopulmonary Rehabilitation, disease prevention and case management: Clinical experiences in cardiopulmonary rehabilitation including cardiopulmonary disease assessment, disease prevention, patient family education, evaluation of impairment/disability, exercise training and social and psychological considerations. **Effective:** Spring 2013

RESP 4400—Advanced Adult Respiratory Critical Care Techniques (3 cr; A-F only, fall, every year)
Students will focus on topics relevant to providing respiratory care to critically ill adults. There will be an emphasis on reviewing case examples of cardiopulmonary problems and therapeutic procedures. However, a multi-organ system-wide patient approach will be maintained. Advanced competencies in ventilator management and critical care monitoring procedures including hemodynamic monitoring will be assured by laboratory experiences. **Effective:** Fall 2012

RESP 4401—Clinical Practicum IV: Advanced Adult Respiratory Critical Care (1 cr; A-F only, fall, every year)
Clinical experiences in intensive care of patients including post-operative general-surgical, neurology/neurologic surgery ICU, trauma care, medical ICU, thoracic surgical ICU, inter-hospital transport and hemodynamic monitoring. **Effective:** Fall 2012

RESP 4402—Clinical Practicum VI: Advanced Adult Respiratory Critical Care (1 cr; A-F only, spring, every year)
Clinical experiences in intensive care of patients including post-operative general-surgical, neurology/neurologic surgery ICU, trauma care, medical ICU, thoracic surgical ICU, inter-hospital transport and hemodynamic monitoring. **Effective:** Spring 2013

RESP 4501—Research Project and Publication (1 cr; A-F only, fall, every year)
Students in small groups will be responsible for devising, developing and undertaking a research project which would be suitable for submission either to a scientific meeting or for publication. This will include developing a research question, devising and submitting a research protocol, carrying out the research and reporting the findings in abstract and a short oral presentation. Research mentors will be assigned to allow guided independent study. **Effective:** Fall 2012

RESP 4502—Research Project and Publication II (1 cr; A-F only, spring, every year)
Students in small groups will continue work on their chosen research project from RESP 4501. This project will be suitable for submission to either a scientific meeting or for publication. This will include developing a research question, devising and submitting a research protocol, carrying out the research and reporting the findings in abstract and a short oral presentation. Research mentors will be assigned to allow guided independent study. **Effective:** Spring 2013

RESP 4602—Grand Rounds (2 cr; A-F only, spring, every year)
This capstone course reviews allied health clinical and professional issues over a broad spectrum and also allows reflection on caregiver roles. Presentations cover a wide range of topics that impact allied health practitioners and include global views of national health policy, economics, multiculturalism/diversity, ethical and legal problems, and challenging clinical cases. Group discussion sessions provide a forum for multidisciplinary review of cases in order to bring larger issues down to individual patient and family experiences. A key element of the course will be the opportunity to both experience and apply course topics through service learning activities. **Effective:** Spring 2013

RESP 4802—Health Care Delivery Systems and Finance (3 cr; A-F only, spring, every year)
Students explore health care delivery systems including a review of health economics, third party and public reimbursement, and contemporary trends in health care organization, management and administration. Regulations, standards, quality assurance, accreditation and ethical issues are considered in the context of contemporary medical practice. Future implications for health care providers and professionals, patients and families, communities, and international health are included. This course will also provide an understanding of finance in the health care industry through a discussion of how the health care industry□s financial information is interpreted and used. The course aims to make the language of health care finance understandable and relevant for students in health care professions. **Effective:** Spring 2013

RESP 4902—Leadership and Management in Health Professions (2 cr; A-F only, spring, every year)
Students acquire background and skills in the business and administrative aspects of health care. Applications of business theory are applied to medical settings including organization models, reimbursement methodologies, information systems, staff scheduling, employee evaluation, accreditation agencies, productivity management, budget planning and group leadership. **Effective:** Spring 2013

Sociology (SOC)

SOC 1571—Sociology (SOCS, DSJ) (3 cr; Prereq-&MATH 1161; A-F or Aud, fall, spring, every year)
Introduction to foundational ideas and research techniques in sociology. Includes a critical engagement with core concepts, including the sociological imagination, socialization, culture, the interplay between individuals and institutions, and social stratification.

SOC 1641—Social Justice and Ethical Decision Making (CIV) (3 cr; A-F or Aud, spring, every year)
Utilizes foundational sociological concepts to systematically explore the role of policies, regulations, values, norms, and social structures in reinforcing or undermining inequality. Students will exercise decision-making in the context of ethical dilemmas regarding inequality, stratification, research ethics, and biomedical ethics.

SOC 3531—Global Perspectives (GP, SOCS) (3 cr; Prereq-PUBH 2561 or #; A-F or Aud, fall, every year)
Global issues to two or more parts of the world are studied by comparative method. Focuses on health sciences. **Effective:** Fall 2012

SOC 3571—Drugs and Society (DSJ, SOCS) (3 cr; Prereq-[1571 or 1641] or #; A-F or Aud, spring, every year)
This course will investigate a variety of causal factors for drug use, including environmental and biological, and situate these within their social, historical, and cultural contexts. Topics include drug use across cultures; social responses to drug use; drug use and race/class conflict; drug policy, legislation, and enforcement; drug treatment; mass media images of drug use and related activities.

SOC 3581—Technology and Society (SOCS, TS) (3 cr; Prereq-[1571, MATH 1161] or #; A-F or Aud, fall, every year)
Impact of technology on society. How society has shaped, used, and responded to new technology. Focuses on health sciences related issues, such as stem cell research or genetic engineering. **Effective:** Fall 2012

SOC 4721—Special Topics in Sociology (1–4 cr [max 8 cr]; Prereq-#; repeated enrollment allowed only if topics are different; A-F or Aud, fall, spring, offered periodically)
In-depth study of special topics in sociology

Sonography (SONO)

SONO 3011—Foundations of Sonography (3 cr; A-F only, fall, every year)
This introductory course will provide the skills and knowledge necessary to begin a clinical rotation in an ultrasound department. Students will receive lectures and participate in lab exercises to help them understand basic anatomy, physics, instrumentation, ultrasound terminology, scanning techniques, image orientation, film labeling, and scanner controls. **Effective:** Fall 2012

SONO 3111—Abdomen I Sonography (2 cr; A-F only, fall, every year)
This course will present the anatomy, physiology, laboratory values, pathology, and sonographic appearances of the prevertebral vessels, kidneys, and spleen. There will be a review of scanning protocols and scanning practice in a controlled environment which will integrate course material with clinical applications. **Effective:** Fall 2012

SONO 3112—Abdomen II Sonography (3 cr; A-F only, spring, every year)
This course will use lectures and scanning labs to help students learn the anatomy, physiology, laboratory values, pathology, and sonographic appearances and scanning techniques for the liver, biliary tree and pancreas. **Effective:** Spring 2013

SONO 3113—Abdomen III Sonography (2 cr; A-F only, summer, every year)
This predominantly Blackboard course will present the anatomy, pathophysiology, laboratory values, and sonographic appearances of the GI tract, retroperitoneum, peritoneum, chest cavity, abdominal wall, as well as emergency sonography, transplant sonography and interventional applications. Emphasis and practical application will be placed on topics most commonly encountered in a typical sonography department such as appendix, FAST Scan, hypertrophic pyloric stenosis, renal-pancreas, and liver transplant and ultrasound guided sterile procedures. **Effective:** Summer 2013

SONO 3121—Cross-Sectional Abdominal Anatomy (1 cr; A-F only, fall, every year)
This predominantly online course will assist students in identifying abdominal and pelvic anatomical structures in cross-sectional imaging studies. After reviewing anatomical structures using standard anatomy illustrations, the corresponding Ultrasound, CT and MRI planar images will be demonstrated with a focus on location and spatial relationships to each other. **Effective:** Fall 2012

SONO 3201—Gynecologic Sonography (2 cr; A-F only, fall, every year)
GYN Sonography is the first course of the obstetrics and gynecology (OB/GYN) curriculum. This course covers gynecologic anatomy, pathophysiology, and GYN ultrasound information. The curriculum includes the following topics: female pelvic anatomy and physiology, uterine, ovarian, and tubal pathology, infertility, and pelvic sonographic scanning techniques. **Effective:** Fall 2012

SONO 3301—Clinical Practicum I (3 cr; A-F only, fall, every year)
This course is a 13-week clinical rotation in the following ultrasound areas: General, Vascular, and Obstetrics. Students will learn through observation, scanning, and application of knowledge obtained during didactic coursework and scanning labs. Students will be directly supervised. **Effective:** Fall 2012

SONO 3302—Clinical Practicum II (5 cr; A-F only, spring, every year)
This course is a 16-week clinical rotation in the following ultrasound areas: General, Vascular, and Obstetrics. Students will learn through observation, scanning, and application of knowledge obtained during didactic coursework and scanning labs. Students will be directly supervised. **Effective:** Spring 2013

SONO 3311—Vascular Technology (2 cr; A-F only, fall, every year)
Vascular I is the first course of the Vascular curriculum. This course provides the student with basic knowledge of the physics of duplex ultrasound imaging. Doppler concepts and machine instrumentation to prepare the student to perform carotid duplex exams and transcranial Doppler exams and identify normal and abnormal anatomy and physiology of the carotid system. **Effective:** Fall 2012

SONO 3312—Vascular Technology II (3 cr; A-F only, spring, every year)
This course provides the student with the basic knowledge and skills necessary to perform duplex imaging of the abdominal arteries, lower extremity arteries and veins, and nonimaging testing of the peripheral vessels. Lectures and scanning labs include anatomy, pathophysiology, treatment, and testing techniques (including nonimaging vascular testing) for upper and lower extremity veins and arteries. **Effective:** Spring 2013

SONO 3313—Vascular Technology III (1 cr; A-F only, summer, every year)
This course covers anatomy, pathology, treatment, indications, and scanning techniques necessary to perform duplex imaging exams of upper extremity arteries and veins, dialysis grafts and mapping, lower extremity venous insufficiency and perforator veins, and upper and lower extremity venous mapping. Test validation and QA statistics will also be explored. **Effective:** Summer 2013

SONO 3401—OB Sonography (2 cr; A-F only, spring, every year)
This course provides the student with the necessary information to perform and aid in interpreting normal and abnormal obstetrical sonograms. The following topics will be presented: embryology, first trimester sonography, normal fetal anatomy, amniotic fluid, invasive procedures, assessment of fetal age and growth restriction, placenta, cord, membranes, high-risk pregnancy, indications and safety. **Effective:** Spring 2013

SONO 3403—Concepts Review and Case Studies (2 cr; S-N only, summer, every year)
This course provides the student opportunities to review concepts taught throughout the curriculum by completing computerized review exams and case studies. **Effective:** Summer 2013

SONO 3503—Superficial Sonography (2 cr; A-F only, summer, every year)
This course will present anatomy, physiology, laboratory values, pathology and sonographic appearance of the breast, neck, prostate and scrotum. Musculoskeletal ultrasound will also be introduced. Review of scanning protocols and scanning practice will be conducted in scanning labs. **Effective:** Summer 2013

SONO 4111—Ultrasound Physics I (2 cr; A-F only, fall, every year)
This course provides the student with a general overview of diagnostic pulse-echo ultrasound imaging devices, basic mathematical concepts, and knowledge of the basic physics of ultrasound and its interaction with tissue. **Effective:** Fall 2013

SONO 4112—Ultrasound Physics II (2 cr; A-F only, spring, every year)
This course provides the student with a detailed description of the physics and technology of diagnostic pulse-echo B-mode ultrasound imaging devices. **Effective:** Spring 2014

SONO 4201—Pediatric Sonography (1 cr; A-F only, fall, every year)
This course provides the student with necessary information about the anatomy of the neonatal brain and pathologies of intracranial hemorrhage. Other pediatric pathophysiologies are also presented including: pediatric renal/urinary tract disease, pediatric abdominal masses and neonatal hips and spines. **Effective:** Fall 2013

SONO 4301—Fetal Anomalies (2 cr; A-F only, fall, every year)
The Fetal Anomalies course prepares students to define fetal pathologies and identify classic sonographic findings associated with cranial, thoracic, neck, GI, GU, skeletal, cardiac, and chromosomal fetal anomalies. **Effective:** Fall 2013

SONO 4303—Clinical Practicum III (6 cr; A-F only, summer, every year)
This course is a 14-week clinical rotation in the following ultrasound areas: General, Vascular, Obstetrics, Vascular Testing Lab, and affiliate rotations. Students will learn through observation, scanning, and application of knowledge obtained during didactic coursework and scanning labs. Students will be indirectly supervised at the discretion of the Clinical Instructor. **Effective:** Summer 2013

SONO 4401—Clinical Practicum IV (7 cr; A-F only, fall, every year)
This course is a 16-week clinical rotation in the following clinical areas: General, Vascular, Obstetrics, Vascular Testing Lab, Neurovascular Lab, and Breast Imaging. Students will learn through observation, scanning, and application of knowledge obtained during didactic coursework and scanning labs. Students will be indirectly supervised at the discretion of the Clinical Instructor. **Effective:** Fall 2013

SONO 4402—Clinical Practicum V (8 cr; A-F only, spring, every year)
This course is a 17-week clinical rotation in the following clinical sites: General, Vascular, Obstetrics, Vascular Testing Lab, and selected specialty areas. Students will learn through observation scanning, and application of knowledge obtained during didactic coursework and scanning labs. Students will be indirectly supervised at the discretion of the Clinical Instructor. **Effective:** Spring 2014

SONO 4501—Research Project & Publication (1 cr; A-F only, fall, every year)
This course provides the student with the opportunity to explore emerging technologies and advanced concepts in sonography through the completion of a research paper. **Effective:** Fall 2013

SONO 4502—Research Project and Publication II (1 cr; A-F only, spring, every year)
This course provides the student with the opportunity to explore emerging technologies and advanced concepts in sonography through the completion of a poster to be submitted for competition at the Minnesota Society of Diagnostic Ultrasound (MSDU) Annual Spring Seminar, or the national SDMS meeting. **Effective:** Spring 2014

SONO 4602—Professional Growth and Development (1 cr; A-F only, spring, every year)
This course provides the student with the opportunity to explore the many aspects of professionalism including: professional interactions, professional responsibilities, sonographer scope of practice, clinical practice standards, ARDMS credentialing requirements, legal issues, sonography lab expenses, interviewing and resume skills, and current sonographer issues. **Effective:** Spring 2014

SONO 4802—Mock Exams (1 cr; S-N only, spring, every year)
Through a series of course reviews, mock registry examinations and information sessions, students are able to prepare for ARDMS examinations. Information on credentialing examinations, effective test-taking strategies, and ARDMS examination content are also provided. Students will be required to apply for and take the ARDMS Physics and Instrumentation board examination during the last part of Semester 5. **Effective:** Spring 2014

Spanish (SPAN)

SPAN 1521—Spanish I (3 cr; A-F or Aud, fall, every year)
A communicative approach to grammar and vocabulary within the context of the health sciences. Development of listening, speaking, reading and writing skills.

SPAN 1522—Spanish II (3 cr; Prereq-1521 or equiv or placement exam; A-F or Aud, spring, every year)
A communicative approach to grammar and vocabulary within the context of the health sciences. Development of listening, speaking, reading and writing skills.

SPAN 2521—Spanish III (3 cr; Prereq-1522 or equiv or placement exam; A-F or Aud, fall, every year)
Intensive review of grammar and vocabulary within the context of the health sciences. Practice in oral and written communication.

SPAN 2522—Spanish IV (3 cr; Prereq-2521 or equiv or placement exam; A-F or Aud, spring, every year)
Extensive practice of written and oral communication in a community-based service-learning project. Students work closely with the instructor in the development and implementation of a project in a Spanish speaking community for 28 hours (approx. 2 hours per week).

SPAN 4721—Special Topics in Spanish (1–4 cr [max 8 cr]; Prereq-#; repeated enrollment allowed only if topics are different; A-F or Aud, fall, spring, offered periodically)
In-depth study of special topics in Spanish.

Writing Studies (WRIT)

WRIT 1511—Writing Studio I
(1 cr; Prereq-Only Rochester-admitted students will be able to enroll in this course.; A-F or Aud, fall, every year)
Introduction to and practice of writing. Integrated into freshman academic coursework. Formal/informal writing assignments. Critical reading skills. Principles of audience, purpose, and argumentative strategies.

WRIT 1512—Writing Studio II
(1 cr; Prereq-Writ 1511 or #; A-F or Aud, spring, every year)
Drafting, revising, editing. Integrated into freshman academic coursework. Formal/informal writing assignments. Critical reading skills. Principles of audience, purpose, and argumentative strategies. Library. Annotated bibliography.

WRIT 3511—Communication Methods (3 cr; Prereq-Writ 1512 or #; A-F only, fall, spring, every year)
Theories/practices of interpersonal, small group, organizational, scientific, and technical communication. Theory and analysis of public presentation of information. Oral presentation skills. Visual communication. Small group work.

Academic Regulations

Grading Policy

The complete University of Minnesota Grading Policy can be found online in the UWide Policy Library at www.policy.umn.edu. More information about transcripts can be found online at http://r.umn.edu/onestop.

- This policy has been in effect since April 2009 for the Rochester, Morris, and Twin Cities campuses, replacing all previous grading policies. It may not be applied retroactively to any grades or symbols awarded before that time.
- The University has two grading systems, A-B-C-D-F (with pluses and minuses) and S-N. Students may receive grades only for the grading system under which they have registered for a course. For undergraduate students on the Rochester campus, an S grade is equivalent to a C- or higher.

  Each campus, college, and department determines to what extent and under what conditions each grading systems is used, may specify what courses or proportion of courses must be on one system or the other, and may limit a course to either system.
- When both grading systems are available, students must choose one when registering for a course.
- Instructors must clearly define for a class, at one of its earliest meetings, the performance necessary to earn each grade or symbol.
- No student may receive a bachelor's degree unless at least 75 percent of the degree-qualifying residence credits carry grades of A, B, C, or D (with or without pluses or minuses). Each campus, college, and department may choose not to accept academic work receiving a D (with or without a plus or minus).
- The University's official transcript, the chronological record of the student's enrollment and academic performance, is released by the University only at the student's request or in accord with state or federal statutes; mailed copies have the University's official seal printed on them.
- The University calculates a grade point average (GPA) for each student, both at the end of each grading period and cumulatively. GPA is calculated as the ratio of grade points earned divided by the number of credits earned with grades of A-F (including pluses and minuses). Transcripts report the periodic and cumulative GPA for each term.
- Grades for original and repeated courses appear on the transcript; however, the course credits may not be counted more than once toward degree and program requirements. Only the last enrollment for a course counts in the student's grade point average.
- Students may petition the Center for Learning Innovation concerning grading policy up to one calendar year after the grade was assigned.

Transcript Grades and Symbols

The following grades (with grade points as indicated) and symbols are used on transcripts.

A **4.000...** Represents achievement that is outstanding relative to the level necessary to meet course requirements.

A- **3.667**

B+ **3.333**

B **3.000...** Represents achievement that is significantly above the level necessary to meet course requirements.

B- **2.667**

C+ **2.333**

C **2.000...** Represents achievement that meets the course requirements in every respect.

C- **1.667**

D+ **1.333**

D **1.000....** Represents achievement that is worthy of credit even though it fails fully to meet the course requirements.

S Represents achievement that is satisfactory (equivalent to a C- or higher for undergraduate students on the Twin Cities campus. The S does not carry grade points and is not included in GPA calculations, but the credits count toward the student's degree program if allowed by the department.

F or N.....Failure or no credit. Indicates that coursework was completed but at an achievement level unworthy of credit, or was not completed and there was no agreement between the instructor and student that the student would be awarded an I. Academic dishonesty is grounds for an F or N for the course. The F carries 0.00 grade points and is included in GPA calculations; the N does not carry grade points and is not included in GPA calculations.

I **Incomplete.** A temporary grade that indicates coursework has not been completed. The instructor assigns an I when, due to extraordinary circumstances, a student is prevented from completing coursework on time. An I requires a written agreement between the instructor and student specifying the time and manner in which the student will complete the course requirements during the student's next term of enrollment. For undergraduates and non-degree seeking students, work to make up an I must be submitted within one year of the final examination; if not submitted by that time, the I will automatically change to an F (if A-F registration) or N (if S-N registration).

The instructor is expected to turn in the new grade within four weeks of the date work is submitted. When an I is changed to another symbol, the I is removed from the record. Once an I has become an F or N, it may be converted to any other grade by petition of the instructor (or department if the instructor is unavailable).

K Indicates the course is still in progress and a grade cannot be assigned at the present time.

NG **No grade required.**

T **Transfer credit or test credit.**

V **Visitor...** Indicates registration as an auditor or visitor; does not carry credit or grade points.

W **Withdrawal....**Indicates a student has officially withdrawn from a course. If a student withdraws from a course during the first two weeks of classes, that course registration is not recorded on the student's transcript. The W is recorded if the student withdraws from the course during the third through sixth week of class (second or third weeks of summer terms). Withdrawal in the seventh or later week of classes

(fourth or later in summer terms) requires college approval. Each student may, once during his or her under-graduate enrollment, withdraw from a course without college approval, and receive a W, at any time up to and including the last day of class for that course.

X Indicates a student may continue in a sequence course in which a grade cannot be determined until the full sequence of courses is completed. The instructor submits a grade for each X when the student completes the sequence.

Appeals

Students may initiate an appeal of the grade earned in a course up to one calendar year after the grade was assigned. Changing a grade to a W (withdrawal) is subject to the one year limitation on appeal.

Academic Dishonesty

Academic dishonesty in any portion of the academic work for a course shall be grounds for awarding a grade of F or N for the entire course.

Academic Transcripts

The transcript is the chronological record of the student's enrollment and academic performance. The University of Minnesota campuses share a student records computing system, which includes course information from all of the University of Minnesota campuses the student has attended during her or his undergraduate program.

Coursework is displayed in a manner consistent with the all-University transcript and grading policies as well as with the unique policies of the college of registration. Transfer work is noted with the name of colleges or universities attended and the total number of credits accepted in transfer by the Rochester campus.

Unofficial transcripts are available at no cost to currently registered students. Official transcripts are issued to current students and alumni for all off-campus use. "Official transcripts" are those issued to any second party. A second party is anyone other than the student (or alumnus) requesting the transcript. In compliance with the federal Family Educational Rights and Privacy Act, transcript requests must contain the student's signature. Transcripts will not be issued without the student's signed authorization. Grades cannot be given to the student by telephone.

Transcript requests can be submitted in person; by mail to 111 South Broadway, Rochester, MN 55904, or by fax to the Student Resource Center at 507-258-8021. Current prices are available by calling the Student Resource Center at 507-258-8457.

Regular service transcripts are the most economical, but students should allow time for processing. Rush service is available for urgent requests. For express delivery, students must provide a prepaid and completely addressed express mailer. Fax service is available if students provide a credit card number and expiration date. Requests by mail should include payment, the student's full name, UMR ID number, dates of enrollment, the complete address to which the transcript should be sent, and the student's signature.

Students must have met all financial obligations to the University before official transcripts can be released for any purpose.

Classes, Schedules, and Final Examinations

Mandatory Attendance at First Class Session

Students must attend the first class meeting of every course in which they are registered, unless they obtain approval from the instructor for an intended absence before the first class meeting. Without such prior approval, a student may lose his or her place in the class to another student.

If a student wishes to remain in a course from which he or she has been absent the first day without prior approval, the student should contact the instructor as soon as possible. In this circumstance, instructors have the right to deny access to the class if other students have been enrolled and the course is full. Instructors are encouraged, however, to take into account extenuating circumstances (e.g., weather) which may have prevented a student from attending the first class.

When the first scheduled class meeting of a course falls on a recognized religious holiday (e.g., Rosh Hashanah), students who observe that holiday should notify the instructor of their intended absence in advance. In instances of religious observances, the student's place will be retained.

Students must officially cancel any course for which they have enrolled and subsequently been denied admission.

Class Attendance

In addition to officially sanctioned excuses, an instructor may excuse a student for any reason the instructor deems acceptable. Instructors have the responsibility of informing their students of class attendance policies. Students should not be penalized for absences due to unavoidable or legitimate circumstances. Such circumstances include, but are not limited to, verified illness; participation in group activities sponsored by the University, including athletic events; serious family emergencies; subpoenas; jury duty; military service; and religious observances. It is the responsibility of the student to notify faculty of such circumstances as far in advance as possible and to obtain an official excuse. Official excuses, which faculty members are obligated to honor, are available from either the Health Service, in the case of verifiable illness, or from the Office of Student Affairs, in the case of a personal or family emergency or when the student is performing a function in the interest of the University. In these cases students remain responsible for making up any work missed and faculty are responsible for making a reasonable effort to assist students in completing work covered during excused absences.

Final Examination Policy

Examination week is part of the regular school year and must be taken into account by students in planning for any other activities or work outside of school hours. Final examinations for summer session are scheduled during the last regular meeting time of the course. Students can find the final examination schedule on the website at http://onestop.umn.edu/calendars/final_exams, and are expected to learn the times for their final examinations and to attend those examinations as scheduled.

Students who have final examinations scheduled at conflicting times or who have three (or more) examinations in one calendar day should contact the Office of the Vice Chancellor for Academic Affairs. *Students are expected to make the appropriate rescheduling arrangements with their instructors by the end of the second week of the term so that conflicts are eliminated well in advance of the final examination period.* In such cases, instructors must agree to give the final examination to the student at an alternate time.

Instructors are not permitted to hold final examinations ahead of the regularly scheduled time during examination week except under unusual circumstances; in such cases, the instructor must have the approval of the vice chancellor of academic affairs. Regulations that require faculty to abide by the final examination schedule are not intended to prohibit faculty from accommodating the special needs of students by offering examinations at other times; if an instructor offers the final at another time to accommodate a special need, that instructor should also offer the final at the regularly scheduled time.

According to the Senate Committee on Educational Policy, the final exam is the last exam of the term, whether or not the exam is cumulative. Faculty may not schedule an exam during the last week of class in lieu of an exam during finals week. The intent of the policy is to avoid having significant exams during the last week of class when students' out-of-class work would also normally be due. While it would be acceptable for an instructor to give a unit exam during the last week of class in addition to a cumulative final exam during finals week, such a schedule is discouraged. Additionally, the policy discourages take-home final exams that are handed out and due during the last week of classes, which would be, in effect, the same as having a final exam the during the last week of classes.

Conversely, lab practicums may be given during the last week of classes, and instructors may designate the last regular class day as the due date for term papers, take-home tests, and other out-of-class work that is assigned *prior to* the last week of class. Ideally, faculty should accept out-of-class work on the scheduled day of the final exam if no final exam is scheduled.

University Senate Policy prohibits classes, University-sponsored trips, and extracurricular events on study day and during the final examination period. Under certain rare circumstances, exceptions to the prohibition on trips or events are possible from the chancellor. To obtain approval, a faculty member must provide written documentation showing the number of participants involved and the educational benefit to them, and demonstrating that the trip or event cannot be scheduled at another time. An exemption granted pursuant to this policy shall be honored and students who are unable to complete course requirements during the final examination period as a result of the exemption shall be provided an alternative and timely means to do so.

Repeating a Course

Credit will not be awarded twice for the same or essentially equivalent course. However, students who receive a grade of S, C, or higher may repeat a course if space permits. When a student repeats a course, 1) both grades for the course shall appear on the official transcript, 2) the course credits may not be counted more than once toward degree and program requirements, and 3) only the last enrollment for the course shall count in the student's GPA. Transfer courses from other University of Minnesota campuses that are the same or essentially equivalent may be considered repeat courses for purposes of grade replacements. Introductory courses from within the University system will be reviewed by the registrar with faculty consultation. Advanced courses must be approved by the faculty in the discipline of the course.

Standard Class Schedule and Class Period

A standard class schedule at the University of Minnesota Rochester consists of 50- and 75-minute classes with an appropriate change period between classes. Classes of lengths other than 50 or 75 minutes are permitted, subject to University Senate policies governing the relationship between contact hours, credits, and student workload. Examinations during the term (e.g., mid-terms) may be given only during regular class sessions; they may not be held at times other than the regularly scheduled class period, subject to the following conditions:

- Exceptions can be made by instructors only for the purpose of giving make-up examinations.
- Any examinations outside of regular class time during the term must be approved by the vice chancellor for academic affairs.
- Accommodation must be provided to any student who encounters an academic conflict, such as an examination scheduled outside of regular class time that conflicts with the regular class period of another course, or two exams that are scheduled to be held simultaneously outside of regular class time.
- Take-home examinations, by their very nature, are specifically exempted from this policy.

Overlapping Classes

Students are not permitted to register for classes that overlap. Overlapping classes are those that have any common meeting time, or any back-to-back classes that have start and end times less than 10 minutes apart. UMR permits petitions overriding such conflicts only under extenuating circumstances; when permitted, the petitions require the signatures of all faculty members involved. The decision to approve or disapprove such an override petition is entirely at the discretion of each faculty member involved. Approved "time conflict" petitions must be submitted in person to the Registrar's Office.

Additional Ways to Earn Credit or Demonstrate Proficiency

Examination for Credit

Students may obtain credit for acquired knowledge that is comparable to the content of specific University courses by special examination. Special examinations for credit may provide official University recognition for a variety of previous educational activity (classes at unaccredited, international, private proprietary, vocational/technical, or armed services schools; certificate learning; foreign study or travel; noncredit-based transfer work; training programs; job experience; independent preparation). The examination administered may be any other combination of work that satisfies the examiners that the student has adequately achieved the values of the course. Special examinations do not allow credit for high school-level courses or for reading, writing, or speaking a native language at the introductory or intermediate level. Minimum standards for awarding credits by examination are determined by the registrar. UMR is not required to give examinations for credit.

Student success coaches provide assistance with determining student eligibility and completing the *Request for Special Examination* form. The registrar will be contacted to give the examination in consultation with the faculty. Students have the right to review course syllabi or course texts prior to taking the examination. When a student's request is approved, the student pays a special fee, whether or not the she or he passes the exam. Credits earned by examination do not count as resident credit. The instructor reports the exam results to the Registrar's Office on the *Request for Special Examination* form. The standard for earning credit is determined prior to the student paying the fee or taking the exam. If that standard is met, the registrar places a notation on the student's transcript showing the course and credits earned. The grade will appear on the transcript as T, designating "test credit"; it will not count in the student's GPA. If the student fails to meet the standard on the examination, no notation is made on the transcript.

Students should check with the registrar before registering for any exam to ensure a successful examination will count toward graduation. A student must complete the exam prior to the first day of classes during the semester they plan to take the course.

Placement Examinations

Placement examinations are administered by CLI, require no fee, and yield no credit or grade. These exams may be taken by appointment. Proficiency examinations in other languages are arranged through the Office of the Vice Chancellor for Academic Affairs.

Nationally Administered Examination for Credit

CLI recognizes and awards credits based on nationally administered examinations that are taken as part of the Advanced Placement (AP) Program, the College Level Examination Program (CLEP), and the International Baccalaureate (IB) Program. Qualifying scores are established by the faculty based on all-University policy.

Advanced Placement (AP) Exam

Nonresident credit is awarded when the college processes an official report from the AP Program that indicates a score worthy of credit. Students who have taken AP examinations should submit an official transcript of their scores to the Registrar's Office. Entering freshmen who seek credit or advanced placement through evidence other than the AP scores should contact the Office of the Vice Chancellor of Academic Affairs.

College Level Examination Program (CLEP)

CLEP General Examinations—Registered students are awarded credit for obtaining satisfactory scores on the nationally standardized CLEP general examinations. CLEP credits do not satisfy the residency requirement. To earn credit, a student must attain national qualifying scores. Students may also earn credit by successfully passing the CLEP subject examinations, which measure achievement in specific college courses.

CLEP Subject Examinations—There are more than 30 CLEP subject examinations covering the content of a variety of courses ranging from Spanish to psychology. A special fee is charged for these exams. To earn credit a student must attain the national qualifying score, based on a norm group of college students who have already passed the course for which the examination is intended. If a student has earned or is registered for college credits in the subject area before taking the exam, he or she receives only the difference between these credits and the maximum credit permitted. If a student has previously earned and/or is registered for more credits than the subject area of the exam awards, no credit is given for successful completion of the test. However, a student is permitted to receive credit for courses taken *after* successful completion of a CLEP examination in a particular subject area. Students who have taken CLEP examinations elsewhere should submit an official transcript of their scores to the Registrar's Office to be processed for appropriate credit allocation. Students are notified of scores received and credit granted.

International Baccalaureate

Students who complete an international baccalaureate (IB) diploma may receive credit. Use of IB credits in the major is determined through discussions between students and faculty. To receive credit, students who have completed IB examinations should provide an official record of their scores to the Registrar's Office and supporting documentation from faculty and their student success coach.

Military Service School Experience

UMR does not grant college credit for military service. UMR does, however, grant credit for military service school experience when formal training courses have substantial content and have counterparts in the normal liberal arts curriculum. To obtain credit, a student must verify the service school attendance as well as successful completion of the work for which credit is requested. For more information, contact the Student Resource Center.

Organizational Sponsored Instruction

UMR may grant credit for formal educational programs and courses sponsored by non-collegiate organizations if they have substantial content and have counterparts in the normal liberal arts curriculum. To obtain credit, a student must verify successful completion of the work for which credit is requested. For more information, contact the Student Resource Center.

Portfolio Evaluation

This method of evaluation involves faculty review of a portfolio in which the student translates prior learning experiences into educational outcomes, and documents those experiences for academic credit. Students must pay a special fee for portfolio evaluation. For more information, contact the Student Resource Center.

Academic Progress Requirements

Minimum academic progress requirements are based on two measures: the cumulative GPA, which measures performance over time; and the term GPA, which measures performance within the term. The Registrar's Office monitors student progress and takes necessary action according to federal guidelines. The Financial Aid Office monitors separate Satisfactory Academic Progress (SAP) requirements for financial aid eligibility.

Probation and Suspension

Students are placed on academic probation if either the term GPA or the cumulative GPA falls below 2.00. Students on probation remain eligible for financial aid. Students whose term GPA is less than 2.00 for two consecutive terms *and* whose cumulative GPA falls below 2.00 are suspended. Suspended students are not eligible to receive financial aid.

Probation

Students are placed on academic probation if either the term GPA or the cumulative GPA falls below 2.00 and a hold is placed on the student's record preventing registration. Students must meet with their student success coach in order to discuss resources for improvement, create a contract outlining additional requirements, and discuss appropriate courses and course load for the following term. The student's assigned student success coach will receive a copy of probation letters. Students on probation will be allowed to register for a maximum of 14 credits unless their student success coach waives the limit. Following the meeting the student success coach will contact the registrar to release the probation hold. Students on probation return to good standing once they have earned a term GPA and cumulative GPA of 2.00.

Suspension

Students whose term GPA is less than 2.00 for their last two consecutive semesters *and* whose cumulative GPA falls below 2.00 will be suspended. Suspended students are not eligible for financial aid.

1. Students who do not meet academic progress requirements may be suspended following either fall or spring semester. The suspension is then in effect for one full academic year (two regular semesters). May session and summer session are excluded from determining academic progress.
2. Students may appeal to return after an absence of only one regular academic semester.
3. Suspended students who do not appeal or whose appeals are denied may apply for readmission one full academic year (two regular semesters) after suspension. They must present an academic plan for improvement; evidence of successful completion of evening, summer, or transfer courses; and/or evidence that personal difficulties are being addressed.

Appeal of Suspension

Suspended students may appeal to the Student Resource Center. Procedures for appealing and for completing the required online appeal form are included in the student's suspension notification letter. If the student's appeal is approved, the Registrar, in consultation with student success coaches and faculty, determines the conditions that must be met by the student during the semester he or she returns. If those conditions are not met, the original suspension is reinstated at the end of the term.

Probation Following Approved Appeal

Students with an approved appeal of suspension remain on probation. Conditions outlined in the "Probation" section continue to apply.

Exemption From Regulations

Students having difficulty meeting academic regulations should contact the Student Resource Center, which will provide additional resources and paperwork necessary to request exemption.

Grievance Procedures

Students with complaints about an instructor or criticisms about course content, procedures, or grading should, in almost all instances, bring the matter directly to the instructor. Where this is clearly inappropriate or when such action does not bring about a mutually satisfactory solution, the student should take the problem to the director of the Center for Learning Innovation. The director will attempt to resolve the matter informally. Grievances involving an instructor's judgment in assigning a grade based on academic performance may be resolved only through this informal resolution procedure. Decisions of the director can be appealed to the vice chancellor for academic affairs.

Academic Integrity and Student Disciplinary Action Procedures

The Board of Regents has adopted a University-wide Student Conduct Code that specifically prohibits scholastic dishonesty; disruptive classroom conduct; falsification; refusal to identify and comply; attempts to injure or defraud; threatening, harassing, or assaultive conduct; disorderly conduct; illegal or unauthorized possession or use of weapons; illegal or unauthorized possession or use of drugs or alcohol; unauthorized use of University facilities and services; theft, property damage, and vandalism; unauthorized access; disruptive behavior; hazing; rioting; violation of University rules; and violation of federal or state law. The Student Conduct Code is available through the UWide Policy Library at www.policy.umn.edu.

The major objective of the disciplinary system is to maintain standards of conduct and order commensurate with the educational goals of the institution. These procedures help students understand and accept the consequences of their behavior in relation to themselves and others. The procedures are designed to guarantee the rights of the accused and to protect the welfare of all members of the University community.

To provide a system of student discipline capable of operating fairly and expeditiously under a variety of circumstances, a number of functional agents and agencies are authorized.

Formal Disciplinary Action

On the Rochester campus, the assistant vice chancellor of student affairs is responsible for formal disciplinary action—including development of policy consistent with the Board of Regents rulings—concerning student conduct on the Rochester campus, of those enrolled in UMR courses, and involving UMR students off campus.

Administrative Disciplinary Action

It is desirable that some instances of student misconduct be settled directly through administrative means. The assistant vice chancellor of student affairs or his designate investigates allegations of misconduct and works with the concerned parties to reach an administrative resolution of the dispute whenever possible. If at any time the accused party wishes to institute a formal hearing process, the assistant vice chancellor of student affairs or their designate assists with the implementation of that process. Students have the right to appeal decisions through the formal hearing process.

Academic Integrity

UMR prefers that questions of academic dishonesty be settled directly by the instructor and student(s) involved. Procedures specify that if the standards of academic integrity have been violated, the instructor should meet with the student(s) involved and, after informing the student(s) of the allegation and supporting evidence, attempt to reach an agreement regarding the veracity of the charges and whether a penalty will be levied. If a decision is reached, the instructor prepares and submits a written report to the assistant vice chancellor of student affairs, presenting the details of the incident, evidence, and penalties imposed. A copy of the report is provided to the student(s) in question, and students have the right to file a report stating their own versions of the incident with the assistant vice chancellor for student affairs, should they desire to do so. These reports are maintained in a confidential University file. If an agreement between the student(s) and the instructor cannot be reached, the matter may be referred by either of the parties to the formal hearing process.

Advice or consultation regarding any matter of academic integrity or student conduct may be obtained from the assistant vice chancellor of student affairs. Detailed statements of policies and procedures regarding academic integrity and student disciplinary action are available at www.r.umn.edu/student-life/student-conduct.

Academic Information

UMR is committed to providing as many learning opportunities as possible for its students. Faculty are dedicated to teaching, research, writing, creative work, and involvement in regional, state, national, and international professional organizations.

Majors Offered

Health Sciences, B.S.

Health Professions, B.S.

Bachelor of Science in Health Sciences (B.S.H.S.)

The bachelor of science in health sciences (B.S.H.S.) degree at UMR opens the door to a career in a health profession, professional school or graduate education, and many other opportunities. Unique features of the program include an integrated curriculum that focuses on health science, flexibility to explore different career options, and a personalized capstone experience to deepen and enhance health sciences interests. Helping students make the most of their education is UMR's primary goal. The B.S.H.S. program challenges students to think critically, make decisions wisely, develop their creativity, and increase their awareness of the world around them.

Bachelor of Science in Health Professions (B.S.H.P.)

The Bachelor of Science in Health Professions (B.S.H.P.) is an educational collaboration between the University of Minnesota Rochester and Mayo School of Health Sciences. The curriculum has a broad focus and includes rigorous science foundations, liberal education, and prerequisite courses selected to meet the need for deeper academic preparation in health professions. Students majoring in the health professions are admitted into one of four tracks: echocardiography, radiography, respiratory care, or sonography. Academic coursework is coordinated with clinical rotations at Mayo Clinic to optimize the learning experience. The B.S.H.P. program prepares students to become certified health professionals in select allied health fields where increased technical complexity and strong cognitive abilities are needed due to specialization and new technologies in health care.

Program Planning

Students are responsible for planning a degree program that will satisfy their own educational and professional goals. Student success coaches, faculty, and other staff are available to assist with program planning, and students should seek this assistance to facilitate well-organized and balanced programs of study and capstone experiences. In preparing their programs, students should use the catalog in conjunction with information provided by student success coaches and other advising materials.

Academic Progress Audit System (APAS)

APAS, the Academic Progress Audit System, is a computerized report that provides helpful information about degree and course requirements. It helps determine how each student's courses satisfy those requirements, shows their progress toward completion of the program requirements, and serves as a graduation check. Useful to both students and advisers, the report indicates how each student's coursework applies to general education and degree requirements for a specific major. Students can also view how their courses may be used in other majors by using the "what if" option. Students may view or print their APAS reports online at any time at http://r.umn.edu/onestop. Advisers may obtain APAS reports for their advisees using the "My Active Advisees" report at UM Reports.

Advising and Academic Support

Academic advising by student success coaches is considered an integral part of UMR's central mission. Connections between students and faculty outside the classroom contribute to a successful educational experience.

Student Success Coaches

Student Affairs is responsible for coordinating the advising program. Advisers at UMR are called student success coaches and are assigned based on each student's particular needs and academic interests. Student success coaches help with academic planning and encourage students to pursue their interests within the health sciences. Coaches can help students enhance their college experience by eliciting academic goals, talking through ways to meet requirements, and considering the effects of their choices on preparing for a career or graduate school. Students also work with these advisers to plan academic enhancement opportunities such as study abroad, internships, and research projects.

Changing Student Success Coaches

Student success coaches have expertise in the general education program as well as in the discipline of the student's major and can provide important information about career preparation or further study. Students are encouraged to change coaches as their interests change. Contact the Student Resource Center any time to arrange to have a different student success coach assigned.

Career Planning

Student success coaches and other career professionals help students consider their options for how to use their undergraduate degree to achieve their career goals through workshops, individual counseling, the use of interest and vocational inventories, and career exploration opportunities in the curriculum.

Writing Center

Individual writing support is provided by qualified writing instructors at the Just Ask Center in the third floor lounge of University Square throughout the semester as needed.

Academic Enrichment

UMR believes in providing a variety of opportunities for students to participate in academic endeavors. There are many ways to become involved in nontraditional learning experiences and to use the professional tools of their field. Students may have a chance to collaborate with faculty members, and they may publish scholarly work with the faculty.

Undergraduate Research Opportunities Program (UROP)

The Undergraduate Research Opportunities Program is a competitive, merit-based program throughout the University of Minnesota. It offers financial awards to undergraduates for research, scholarly, or creative projects undertaken in partnership with a faculty member. UROP awards include stipends (up to $1,000) and expense allowances (up to $300). All full-time undergraduates at UMR are eligible to apply. All UMR faculty may serve as UROP sponsors.

Service Learning

Service learning supplements the classroom experience by using community service, community-based research, and other civic engagement activities to meet course goals and community needs. The service learning program seeks to develop the following skills for students: the ability to connect course material to real world needs; leadership and communication skills; awareness of diversity; improved critical thinking skills; and civic engagement and commitment to social change. Opportunities for service learning and civic engagement are built into the curriculum.

National Scholarships

UMR encourages eligible students to apply for prestigious national scholarships, including the Rhodes, Fulbright, Truman, Marshall, Mellon, National Security Educational Program (NSEP), Gates-Cambridge, Jack Kent Cook, Udall, and others. These academic scholarships, covering a wide range of fields, bestow considerable national prestige and are helpful in the pursuit of graduate and/or professional study as well as career development. They also typically carry a generous stipend or scholarship.

A team of faculty and staff advisers mentor students in the complex and highly competitive application process.

Capstone Experiences

Capstone experiences are a critical component of the B.S.H.S. curriculum. Capstones may include up to 30 upper division academic credits and are completed after a student reaches junior status (has earned at least 60 credits toward the B.S.H.S. degree, unless an exception is granted). The capstone for each student must be approved by a UMR faculty committee, and will be overseen by a UMR faculty sponsor.

B.S.H.S. students will customize their capstones based on their career and professional goals. Admission to clinical certificate and graduate programs are competitive and not guaranteed. Students must also enroll in a professional development seminar course while completing their capstone experiences. Components of the capstone may include, but are not limited to:

- Upper division coursework in relevant disciplines
- Upper division coursework or other appropriate experiences during study abroad or national student exchange experiences
- Internship experiences working in a health sciences industry environment, such as nonprofit, regulatory affairs, medical information technology, public health, informatics, medical device, or the pharmaceutical industry
- Research experiences that demonstrate interest in and commitment to health sciences professions or serve as preparation for graduate school or professional school
- Allied health certificate completion (in collaboration with the Mayo School of Health Sciences)
- Community-based research, service, or work experience that is approved for academic credit by a faculty advisor

Credits

Each credit represents an average of three hours per week of a student's time and effort, with one hour in class, two hours of preparation, or three hours of laboratory work, for example.

A student with fewer than 30 completed credits is classified as a freshman; 30 to 59 completed credits, a sophomore; 60 to 89 completed credits, a junior; 90 completed credits or more, a senior. At least 120 credits are required for graduation. Programs must include specified general education requirements and a major or area of concentration (see the following section).

The academic year is divided into two semesters of approximately 15 weeks each. Except in special cases, full-time students carry 13 to 16 credits each semester; an average course load is 15 credits, usually four or five courses, per semester.

Honors and awards recognize exceptional scholarship and related achievements within the student body. Such scholarship can be demonstrated in a variety of ways; general academic excellence, as traditionally measured by the GPA, is one way.

Graduation with Distinction

Students graduating "with high distinction" have an overall GPA of 3.900 or higher; those graduating "with distinction" have a GPA from 3.750 to 3.890.

Dean's List

Each semester, all colleges and programs publish a dean's list, which includes students who achieve a 3.666 GPA or higher and who complete at least 12 credits on the A-F grading system. This achievement is noted on students' transcripts.

Library and Technology Resources

Information Commons

The University of Minnesota Rochester Library and Information Commons provides access to a wide array of electronic and printed materials. Students have access to the University of Minnesota Libraries' online resources for their academic programs, including the catalog, periodical indexes, and full text articles. Books and other printed materials may be obtained from the University of Minnesota Libraries through document delivery or interlibrary loan. Students should contact the Information Commons staff at www.r.umn.edu/academics/library/about/index.htm for assistance with their requests.

The Library and Information Commons' mission is to provide comprehensive resources and services in support of the research, teaching, and learning needs of the University community.

Students have access to networked computers in the Library and Information Commons, and there is wireless capability throughout the building. Extensive online resources are provided via the library's website. This site serves as the gateway to the University of Minnesota's systemwide library's licensed databases and online journals, and provides links to other scholarly resources. More than 19,000 licensed electronic journals and 190,000 licensed electronic books are available to researchers through UMR.

For students, faculty, and staff who wish to do research with a physical item not available at UMR, access to the collections of the University of Minnesota Libraries coordinate campuses is available via a daily delivery system. This allows for quick delivery from the collection of the 15th largest research library in North America—almost 7 million volumes are held by the Twin Cities libraries. Requesting a book from a Twin Cities campus library is a one-stop process for UMR faculty, staff, and students. Book delivery services are as simple as clicking "Get It" online.

Reference assistance and instruction are offered by the university librarian. The librarian works full time in the UMR Library and Information Commons and is available in person, via Instant Message (IM), email at sanco001@umn.edu, or by calling 507-258-8035. Bibliographic instruction sessions are offered monthly, and individual sessions are offered as requested. The UMR Library and Information Commons is open 73 hours a week.

Information Technology and Interactive TV Services and Support

UMR Information Technology and Interactive TV (UMR IT/ITV) supports all UMR instructional, research, and administrative programs. UMR IT/ITV, in coordination with the University of Minnesota's Office of Information Technology (UMOIT) supports the UMR campus network, including wireless access points; central internet, web, and email services; a computing help desk; and the Mac and Windows computers available in the Library and Information Commons computing lab. Students pay a campus fee, which provides access to computing facilities. Software available on the Library and Information Commons computers includes internet utilities for email, web browsing, and web page creation; word processing, spreadsheet, and related office productivity programs; and software tools specific to academic disciplines, such as statistical packages, graphic and video editors, databases, geographic information systems, and computer language programming environments. All students have email and web server accounts, as well as access to the wireless network, file storage, and printing. The University's student services and the Library's extensive online resources are accessible to students remotely from any location with internet access. Additional information is available online at www.r.umn.edu/campus-resources/it.

Laptop Program

A critical component of incorporating UMR's learner-centered, technology-based curriculum into the framework of the undergraduate experience is the Student Laptop Program. This program, required by UMR, provides each student with a fully configured laptop that includes software designated to support courses and their experience as a UMR student. In addition to the latest software needed for courses, each laptop is supported by UMR's on-site technical support staff. The cost of the laptop, software, support, and training are included as part of the student's durable goods fee.

Configurations change in light of technology improvements and market availability; however, each laptop includes:

- Fast processors
- Latest video card
- Optical drive
- 2+ GB of RAM
- 100+ GB hard drive
- Built-in wireless connectivity
- Approved compatibility with UMR campus network

Program Benefits

- Laptop arrives fully configured and tested by technology staff
- Hardware specifically chosen to support the curriculum
- Installed software (e.g., operating system, Microsoft Office Suite, course specific software, anti-virus software)
- Network access
- Three-year standard and three-year accidental damage warranties
- Laptop upgrade every two years
- Option to keep laptop upon graduation (additional fee may be assessed)
- On-campus help desk and hardware and software warranty standard and accidental warranty support, including:
  - Technical support and training
  - Problem diagnosis and repair
  - Availability of loaner laptops during repair
  - Data back-up during repair
  - Virus protection and repair
  - Reconfiguration as necessary

Administration, Staff, and Faculty

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Clyde E. Allen Jr., Congressional District 7

Richard B. Beeson, Congressional District 4

Laura Brod, At Large

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David McMillan, Congressional District 8

Maureen Ramirez, At Large

Patricia S. Simmons, Congressional District 1

Steve Sviggum, Congressional District 2

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Kathryn F. Brown, Vice President for Human Resources

Aaron Friedman, Vice President for Health Sciences and Dean of the Medical School

R. Timothy Mulcahy, Vice President for Research

Kathleen O'Brien, Vice President for University Services

Richard Pfutzenreuter, Vice President and Chief Financial Officer

R. Scott Studham, Vice President and Chief Information Officer

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