

PRE-PROFESSIONAL PROGRAMS

3-2 Engineering: Major in Mathematics

MR. TERENCE J. MULLEN, ADVISOR

A student who completes the requirements for the 3-2 Engineering Major in Mathematics earns two degrees:

1. A Bachelor of Arts degree with a major in mathematics from Carroll College, and
2. A Bachelor of Science degree with a major in a selected field of engineering (e.g., mechanical engineering) from one of the following affiliated engineering schools:
 - Columbia University, New York, NY
 - The University of Notre Dame, South Bend, IN
 - The University of Southern California, Los Angeles, CA
 - The University of Minnesota, Minneapolis, MN
 - Gonzaga University, Spokane, WA
 - Montana Tech of the University of Montana, Butte, MT
 - Montana State University, Bozeman, MT

Engineering fields, which 3-2 students may select, include the following:

Aerospace Engineering
Engineering Mechanics
Chemical Engineering
Engineering Science
Civil Engineering
Geological Engineering
Computer Engineering
Geophysical Engineering
Electrical Engineering
Industrial Engineering
Environmental Engineering
Material Science Engineering
Mechanical Engineering
Metallurgical Engineering
Applied Biology
Mineral or Mining Engineering
Applied Chemistry
Nuclear Science and Engineering
Applied Geophysics
Operations Research
Biological Engineering
Petroleum Engineering

The purposes of the 3-2 program are to provide the student with a traditional engineering education augmented with a strong liberal arts background and to provide a broader and deeper exposure to mathematics and its applications than would ordinarily be possible in a four year engineering program.

Under the 3-2 program, a student attends Carroll College for three years and

then selects and transfers to one of seven affiliated engineering schools for two years of study. Upon successful completion of the five-year program, the student receives a Bachelor of Arts degree with a major in mathematics from Carroll College and a Bachelor of Science degree with a selected engineering major from the engineering school.

Carroll College continually reviews its curriculum with the seven affiliated schools to ensure that 3-2 students can complete any of the engineering majors in the five-year program.

A program to prepare students for graduate studies in engineering is also offered via the mathematics major with a cognate concentration in engineering.

A student in the 3-2 engineering program will be accepted at any one of the seven engineering schools on the written recommendation of the engineering program faculty. Before a student will be considered for a recommendation, at least a 2.60 cumulative grade average and a 2.60 average in the "Major Program Requirements" and in the "Other Program Requirements" must be achieved by the end of the fifth semester at Carroll College.

See 3-2 Engineering: Major in mathematics under the Department of Mathematics Engineering and Computer Science.

Pre-Medical and Pre-Dental Programs

DR. SAM ALVEY, ADVISOR

Admission to medical or dental school requires completion of courses in biology, chemistry, physics, mathematic, and English. While most premedical students graduate from Carroll College with a degree in biology, the choice of a major field of study is left open to the student. The following are recommended minimum requirements:

BI 171-172	Biological Principles I & II
BI 221	Cell Biology
BI 300	Genetics
CH 101-102	General Chemistry
CH 301-302	Organic Chemistry
CH 353	Biochemistry
PHYS 201-202	Physics I & II
MA 121-122	Differential and Integral Calculus
MA 207	Elementary Statistics

In almost all cases, students enter medical or dental school after completing a four-year undergraduate program. Occasionally, highly qualified students enter after three years. A student who enters medical or dental school after three years of undergraduate study may receive the Bachelor of Arts degree with a major in biology from Carroll College under the following conditions.

1. Successful completion of the first 3 years of course work in the major program.
2. Fulfillment of all Carroll College Core Curriculum requirements.
3. Successful completion of the first 2 years of professional school; and
4. Application for degree and receipt by the Registrar's Office of an official transcript from the professional school.

Pre-Law Program

MR. DENNIS WIEDMANN, ADVISOR

Accredited law schools require the bachelor's degree for admission, yet rarely do they specify a particular major field of study. Law schools are particularly interested in applicants who have had broad exposure to the humanities and social sciences and have proven ability for cogent written and oral expression. Degrees in English, history, political science, philosophy, sociology, mathematics, accounting, economics, business, and other areas are suitable for the pre-law student. Students interested in law school are urged to become familiar with the requirements of the specific schools to which

they plan to apply. Carroll College has a pre-law speaker series and a legal internship program in the Department of Political Science, both of which enable the student to become well-acquainted with the legal profession. The Department of Political Science offers a one-credit pass/fail course, PO 201, designed to expose potential law students to various aspects of the profession.

Also available to students considering legal careers is the Carroll College Pre-Law Handbook, a short guide to prepare for the study of law and law school admissions processes.

Pre-Optometry Program

JENNIFER GEIGER, ADVISOR

Admission requirements for doctor of optometry programs vary from program to program and students should check individual web sites for specific information. General requirements include calculus, statistics, organic chemistry, anatomy, physiology, microbiology and psychology. Carroll students often major in either biology or chemistry since many of the course requirements coincide with these majors. However a science degree is not required.

Pre-Pharmacy Program

DR. KYLE STRODE, ADVISOR

Pharmacy programs usually consist of a pre-pharmacy program followed by four years of pharmacy school. Beginning in 2001, all pharmacy schools in the U. S. began granting only pharmacy doctoral degrees. A typical pre-pharmacy student at Carroll would take the courses listed below to meet the pharmacy prerequisites for the University of Montana, with which we maintain a close relationship. It is possible to finish these pharmacy prerequisites in two years (but see the note in italics below). In addition, Carroll students, regardless of their original state of origin, are considered "in-state" applicants at the University of Montana and pay the corresponding in-state tuition. All eight students Carroll students who applied to the UM Pharmacy program in 2006 were accepted.

Pharmacy schools vary in their prerequisite requirements. Some pharmacy schools might require additional coursework prior to admission (examples listed below), which make it necessary to do three or four years of pre-pharmacy coursework. *Most of the pharmacy schools in the Northwest U.S. (including the University of Montana) reported that the majority of their students admitted in 2006 had completed three years of coursework or received a bachelor's degree. Successful applicant profiles at most of the institutions are available on their web sites.*

Recommended minimum requirements:

LAS 101	Alpha Seminar
BI 171-172	Biological Principles I and II
BI 221	Cell Biology
CH 101-102	General Chemistry I and II
CH 301-302	Organic Chemistry I and II
MA 121	Calculus I
MA 207	Elementary Statistics
ENWR 102	College Composition
COMM 101	Basic Communication
PSY 105	General Psychology
or SOC 101	General Sociology
ECON 201	Microeconomics
PHYS 201	Physics I

Some programs may require the following additional courses:

BI 201-202	Human Anatomy and Physiology
BI 214	Microbiology
CH 353	Biochemistry

Pre-Physical Therapy Program

DR. JACQUELINE BREHE, ADVISOR

Although students interested in physical therapy may select any major, the following are the most frequently chosen: Psychology, Sociology, Health and Physical Education, and Biology. *Students who choose to major in Biology may need to spend extra time in college to complete all major requirements and all physical therapy requirements as well.*

Strong academic performance is considered paramount; the degree emphasis is secondary. Although many schools list an overall minimum GPA of 3.0 for admission, to be competitive a GPA of at least 3.5 is needed. The prerequisite GPA is usually higher.

Applicants to schools of physical therapy must demonstrate an understanding of the profession they wish to enter. Programs typically require a minimum of 80-100 hours of full or part time experience (volunteer or salaried) under the supervision of a certified physical therapist. Usually two or more settings are stipulated with acute care often being recommended as one of the settings.

Schools of physical therapy vary somewhat in their admission requirements. Therefore, it is highly recommended that students contact the particular physical therapy schools to which they wish to apply to gain a thorough understanding of the prerequisites so that their academic programs at Carroll can be planned to accommodate any changes to the recommendations listed below. It is advisable that the selection of physical therapy schools to which the students intend to apply be done early in the students' academic careers so there is time to make accommodations.

Carroll College recommends the following courses for those preparing to enter a physical therapy program. These represent minimum requirements for most schools (*Additional courses may be necessary depending on the school of physical therapy selected by the student. For example, the University of Montana requires Human Anatomy and Physiology, a course in microbiology, an additional advanced biology course and an exercise physiology course, but does not require general biology.*)

Biology (3 courses):

- BI 171 Biological Principles I (some schools require a second general biology course)
- BI 201-202 Human Anatomy and Physiology

Chemistry (2 courses):

- CH 101-102 General Chemistry

Physics (2 courses):

- PHYS 201-202 Physics I and II
- or PHYS 205-206 Engineering Physics I and II

Math (2 courses):

- MA 117 Difference Equations and Linear Algebra
- or MA 121 Differential Calculus
- MA 207 Statistics

Psychology (2 courses):

- PSY 105 General Psychology
- PSY 203 Developmental Psychology
- or PSY 306 Abnormal Psychology

Other Requirements: Computer literacy is assumed. Students may be asked to provide documentation of their proficiency. Certification in Advanced First Aid and CPR is required by most schools. Communication and English composition prerequisites are included in Carroll Core requirements. A small number of schools allow courses in Comparative Anatomy and Vertebrate Physiology to substitute for Human Anatomy and Physiology.
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Pre-Physician's Assistant Program

DR. JACQUELINE BREHE, ADVISOR

There is a great diversity in the requirements for admission to Physician Assistant programs and the student is advised to check individual web-sites for specific information. Generally, 1000-2000 hours of direct patient care is required as is human anatomy and physiology, microbiology and chemistry. A science major is not required.

Pre-Veterinary Program

DR. JENNIFER GEIGER, ADVISOR

Students interested in veterinary medicine should take a core of science courses that are required for admission. Each professional school will have its own set of pre-admission courses but a general course of study would include:

2 semesters	Intro Biology
1 semester	Biochemistry
2 semesters	Gen Chemistry
1 semester	Genetics
2 semesters	Org Chemistry
1 semester	Physics
1 semester	Statistics

English composition, communications and other courses outside of the sciences.

Additional Biology courses may be required or recommend.

Students should check individual websites for specific information on admission requirements.

Most Carroll students major in either biology or chemistry since the course requirements coincide with these majors. However a science degree is not required. In fact the applicant can be accepted before completion of an undergraduate degree, but students are advised to pursue a specific major.

SPECIAL PROGRAMS

Cooperative Education And Internship Programs

Recognizing that learning can take place outside the classroom, Carroll College allows its students to participate in a work program that relates to their area of studies. This employment must relate directly to classroom work in order to qualify for cooperative education/internship. Close cooperation between Carroll and the participating companies insures a work experience that contributes significantly to the student's overall growth and professional development.

Juniors and seniors in any major area may participate in either program with the approval of the department chairperson, academic advisor, cooperative education program director, and the Vice President for Academic Affairs. Students receive monetary compensation and credit for cooperative education and credit only for internships. A student may earn a maximum of 6 semester hours in the cooperative education program. Enrollment in the course must be during the same semester in which the actual work experience takes place. Interested students should contact the Director of the Internship Program at the Career Center.

General Studies

General studies students (students with undeclared majors) typically pursue CORE course requirements for their freshmen and sophomore years while exploring a range of possible liberal arts and science major degree

programs for the Bachelor of Arts degree. Students should consult with their academic advisor for more information about pursuing general studies in their first years of college.

Honors Scholars Program Philosophy

Interdisciplinary studies, assisted by a careful and thorough study of philosophy and theology, enable students to acquire an organic vision of reality, and to develop a continuing desire for intellectual progress.

Ex corde ecclesiae, Pope John Paul II

The Carroll College Honors Scholars Program is designed for those students who excel in academic scholarship, personal character, and social commitment. Enhancing these three qualities is the educational goal that Carroll College celebrates in its Mission Statement.

Carroll College prides itself on its academic reputation. Yet, as important as academic studies are, Carroll understands that an institution of higher learning must also be concerned with the development of a student's personal character and sense of social responsibility. These concerns drive Carroll's Honors Scholars Program.

The Honors Scholars program is dedicated to the education and scholarship of Carroll's academically focused students and to projecting this image of excellence of the Carroll community. It is a program that belongs to the entire Carroll community: students, staff, and faculty.

Moreover, the program offers arts and letters beyond the classroom setting. A wide variety of cultural programs, projects, and activities are scheduled, including a speaker series, discussions, educational trips, dinners at faculty homes, and attendance at performing arts events followed by special sessions with performers and artists. Honors Scholars also develop their sense of social responsibility through volunteering for community service projects.

Mission

The Honors Scholars Program affirms three basic components - academic scholarship, cultural learning, and service learning. Indeed, such integration is critical for the living quest: moving from the realm of information into the world of knowledge. These components are held in the heart of the overall mission of Carroll College. No simple formula can accomplish this mission. Indeed, success depends upon the heart of a student's favorite professor, and the religiosity of spirit found at Carroll College.

Goals

1. Scholars will participate in a unique sequence of five seminar courses as part of the student's Carroll College Core Curriculum;
2. Scholars will share the excitement of cultural events and meetings with visiting artists, scholars, and performers, developing an appreciation of program camaraderie;
3. Scholars will participate in service learning projects individually and in groups;
4. Scholars will develop these projects within their majors with HSP influence;
5. Scholars will interact directly with professors and other Honors Scholars beyond the classroom, developing a vivid sense of Carroll's identity;
6. Scholars will take part in an advanced academic program mentored by a committee of professors devoted to developing the best education in America.
7. Scholars will earn recognition as an Honors Scholar at Carroll academic awards presentations, at graduate proceedings, on transcripts and diploma;

Members of the four-year Honors Scholars Program at Carroll College are selected in their freshman year from all academic majors. Admission to the program is competitive with no more than sixteen students accepted into each class. Honors Scholars participate in classroom seminars, attend a variety of cultural events, and pursue community service projects of their own conception.

Beginning in the spring term of their freshman year, students participate in a sequence of five interdisciplinary seminars listed as 'HNR' courses on their transcripts. Through open discussion, students explore the pivotal ideas presented in seminal works from the Western intellectual tradition.

During the freshman seminar, participants begin tracing the interrelationships and ramifications of key ideas evolving through the classical Greek and Roman periods. Students develop skills in critical reading, thinking, discourse, and writing while assessing important concepts and values forming the foundation of our cultural heritage. Subsequent seminars proceed chronologically across academic disciplines, including Judeo-Christian and Medieval, Renaissance and Reformation, Restoration and Enlightenment, ending with Romantic and Modern. By breaking through disciplinary boundaries, participants acquire an integrated view of fundamental human concepts and refine skills in critical inquiry that can be applied to the study of any academic field or culture. The Honors Scholars Program upholds rigorous standards in assessing the work of its students.

The HNR seminars substitute for CORE at Carroll College as follows:

HNR 150 - Philosophy	3 credits
HNR 250 - Theology	3 credits
HNR 251 - Literature	3 credits
HNR 350 - Social Science	6 credits
HNR 450 - Philosophy	3 credits

HSP Requirements

1. HNR 150 - Classical Greek and Roman Thought (Classical period 500 BC - 500 AD)
2. HNR 250 - Judeo-Christian and Medieval Thought (Medieval period 500 AD - 1500 AD)
3. HNR 251 - Renaissance Thought (Arts and Science Revolution 1450 AD - 1650 AD)
4. HNR 350 - Restoration and Enlightenment Thought (The Rise of Empiricism 1600 AD - 1820 AD)
5. HNR 450 - Modern Thought (Romanticism to post Modern 1820 AD - Today)
6. HNR 495 - Honor Thesis Writing (spring semester junior year)
7. HNR 499 - Honors Thesis

HSP students must take one additional social science 200-400 level course.

HSP students must take 6 credits of a foreign language. Students with knowledge of a foreign language may demonstrate competency through placement examination. Attainment of fluency through intermediate level is strongly encouraged.

HSP students are encouraged to satisfy the CORE fine arts requirement through a visual arts course

HSP students are encouraged to satisfy the CORE natural science requirement with a four-credit lab science course.

HSP students must take the HI 101/HI 102 - History of Western Civilization series, preferably in their freshman year.

Military Science and Leadership (ROTC) Program

Army Reserve Officer Training Corps (ROTC) offers Carroll College students the opportunity to serve as a Commissioned Officer in the U.S. Army, the Army National Guard, or the U.S. Army Reserve upon graduation from College. ROTC enhances a student's education by providing unique leadership and management training, along with practical leadership experiences beyond the usual classroom academics. Students develop many of the qualities basic to success while earning a college degree in their selected major and an Army officer's commission at the same time. Army ROTC can be completed in two or four years, depending on the student's qualifications, through the Basic Course and the Advanced Course.

Basic Military Science

The Basic Military Science courses, usually taken during the freshman and sophomore years, cover such subjects as management principles, national defense, military history, and leadership development. Any student can enroll in Basic Military Science courses. All necessary textbooks, uniforms, and other material for the basic courses are furnished to students at no cost. Students taking basic courses are under no obligation to the military. After completion of the Basic Course, students who have demonstrated the desire and potential to become Army officers, and who meet the physical, moral, and scholastic standards, are eligible to enroll in the Advanced Military Science courses.

Advanced Military Science

The Advanced Military Science Courses are usually taken during the junior and senior years by qualified students (who have taken prerequisite Basic Courses, or the 5-week Leadership Training Course, or are Prior Service military). Instruction includes organization and management, tactics, military ethics and professionalism, as well as further enhancement in leadership skills. During the summer between the junior and senior year, students attend the ROTC National Advanced Leadership Camp (NALC), a fully paid five-week leadership internship. Each student (cadet) enrolled in the Advanced Course receives a tax-free subsistence allowance of up to \$4,000 per year of attendance.

ROTC Scholarships and Financial Assistance

Four-year and two-year Army ROTC scholarships are offered and awarded on a competitive basis to the most outstanding students who apply. Nursing students can qualify for a variety of scholarships not available to other students. Each student receiving an ROTC scholarship is required to fulfill a military obligation in the Army National Guard, U.S. Army Reserve, or the Active Army, depending on the scholarship type awarded. Each scholarship pays for all college tuition and fees, up to \$300 per semester for textbooks and supplies, and provides a tax-free subsistence allowance of up to \$4,000 per year.

Note: College credit is awarded for Military Science courses, however, only up to 2 credits of MSL 315 will be counted toward the Bachelor of Arts or the Associate of Arts Degree at Carroll College

Study Abroad Programs

Carroll College encourages students to study abroad to enhance their educational experience and to provide an enriching international exchange between individuals, cultures, and ideas from around the world. Carroll believes that students learn about themselves, their host country, and their native land through international experiences.

Students interested in studying during the breaks, a semester or a full year abroad have a wide range of opportunities. Carroll continues to establish new relationships with other colleges and universities around the world.

Carroll's faculty and staff lead credit bearing courses during the fall, winter, spring and summer breaks for students who cannot or do not wish to study abroad for a full year or semester.

Carroll Offers Direct Exchange Programs with the Following Schools:

Kumamoto-Gakuen University, Japan
Cheju National University, Korea

Carroll is pleased to be affiliated with the following study abroad organizations:

The American Institute for Study Abroad (AIFS)
AustraLearn
International Studies Abroad (ISA)
YISA-China

Through these organizations, Carroll students have many choices for spring, summer, fall and full year study abroad.

For more information, please see our web site: <http://www.carroll.edu/academics/international/abroad/index.cc>, visit the Study Abroad Office in St. Charles, Room 14, send an email to sackeret@carroll.edu or call 406-447-4469.