

Preprofessional Studies

Health Professions

Careful planning of the student's academic program is important and students must select Biology 121 and/or Chemistry 111 in their first year.

Consultations with one of the health professions advisors should begin during the first-year orientation. Members of the Health Professions Advisory Committee are listed in the Faculty Committees section of the Register of the College found at the end of this catalog.

For entry into training programs for most medical professions, college grades are very important, as well as first-hand experience with the medical professions, demonstrated ability to work well with other people, and involvement in community service and/or volunteerism.

Chiropractic Medicine

A doctor of chiropractic is a primary health care provider who gives particular attention to the relationship of the structural and neurological aspects of the body. A chiropractor is trained in physical examination, orthopedic and neurological testing, radiographic interpretation, and direct palpitation of joint movement. Although most chiropractic colleges specify two years of preprofessional education as a minimum requirement for admission, the majority of entering students have a bachelor's degree. No specific undergraduate major is required. Most chiropractic colleges require a minimum grade point average, typically around 2.5, with no science course below a "C."

The specific admission requirements for chiropractic colleges differ from one school to another. However, the following guidelines should be kept in mind while planning an undergraduate curriculum: biology, 8-12 credit hours, vertebrate or human anatomy and physiology preferred

or required (Biology 121 and any two of the following: 211, 216, 312, 314); general chemistry, 8 credit hours (Chemistry 112 and 211); organic chemistry, 8 credit hours (Chemistry 111 and 214); physics, 8 credit hours (Physics 151-152); English/communication, 6 credit hours (English 110 and Communication 115); psychology, 4 credit hours (Psychology 110); humanities and social sciences, 15 credit hours (most transferable courses are acceptable; however, courses in public speaking, critical thinking, ethics, writing, and sociology are preferred); and additional electives to total the minimum requirements of the particular school.

Dentistry

Although many dental schools specify three years of preprofessional education as a minimum requirement for admission, most entering students have a bachelor's degree. No specific undergraduate major is required. Most dental schools require a certain level of performance on the Dental Admission Test; students should take this test the spring of their junior year. Dental schools also assess the undergraduate transcript, grade point average, letters of recommendation, and an interview.

The specific admission requirements for dental schools differ from one school to another and it is important that the applicant obtain a catalog from the specific school of dentistry where he or she plans to apply. The following guidelines should be kept in mind while planning an undergraduate curriculum: general chemistry, 8-10 credit hours (Chemistry 112 and 211); organic chemistry, 8-10 credit hours (Chemistry 111 and 214); biology, 8-10 credit hours; physics, 8-10 credit hours (Physics 151-152); mathematics, at least college algebra; English, 6-12 credit hours

(English 110 and an additional course); psychology, 3-6 credit hours (at least Psychology 110); and additional electives to total the minimum requirements of the particular dental school.

Medical Technology and Associated Programs at Rush University

The baccalaureate degree is one prerequisite to taking the registry examination for licensing as a medical technologist. A student's undergraduate major may be in any field, though most students interested in medical technology choose either biology or chemistry. A minimum of 16 credit hours of biology is required, including Biology 121 and a course in microbiology (Biology 314). Students must also take a minimum of 16 credit hours of chemistry, including courses in organic chemistry (Chemistry 111 and 214) and a course in quantitative analysis (Chemistry 211), and one course in mathematical statistics (Mathematics 120). Additional recommended courses in the sciences include physics, genetics, and human anatomy and physiology.

A student may apply to medical technology programs at any institution, but Ripon College has affiliation with St. Agnes Hospital in Fond du Lac, WI, and may enter their program after receiving the A.B. degree from Ripon College. We also have affiliation with Rush University in Chicago, IL. A Ripon College graduate who has achieved a minimum GPA (usually 3.0) and taken the required coursework will be automatically accepted into Master's programs in Rush's College of Health Science. This institution has many programs, but of special interest to Ripon College graduates are programs leading to a Doctor of Audiology or a Master of Clinical Laboratory Sciences (medical technology) or Perfusion Technology, which require a strong science background. Someone who wants to be involved in health care but is not inter-

ested in taking as many science courses might consider getting a Master Degree in Occupational Therapy or Health Care Ethics. These programs are too diverse to describe in detail here; contact Dr. Margaret Stevens in the Biology Department for more specific information.

Medicine, Allopathic and Osteopathic

Medical schools seek candidates with a high level of scholastic achievement and intellectual potential, as well as the motivation and humanistic concern necessary for success as a physician. These qualities are measured by college grades, particularly science grades, letters of recommendation from undergraduate faculty and premedical advisers, Medical College Admission Test (MCAT) scores, interview assessment, an applicant's personal statement and application, and volunteer work and community service. Acceptance into medical school is competitive and the mean grade point average for accepted students is about 3.6. Although most medical schools require a minimum of three years of undergraduate work before admission, the majority of entering medical students have a baccalaureate degree.

Medical schools do not require a specific major; however, most applicants major in biology, chemistry, or such combinations as the chemistry-biology major. Although an understanding of the principles of the sciences basic to medicine is required of entering medical students, breadth of education also is expected. A successful medical student must effectively acquire, synthesize, apply, and communicate information. Thus, studies in the humanities and in the social and behavioral sciences and opportunities for the development of effective writing skills are strongly suggested. Independent study and research also are encouraged.

The specific admission requirements

vary from school to school, and you should plan carefully to ensure your education and work experiences enhance your chances for admission. The following guidelines should be kept in mind when planning an undergraduate curriculum: general biology or zoology (with lab), 4 credit hours (Biology 121); advanced biology or zoology (with lab), 4 credit hours; general chemistry (with lab), 8 credit hours (Chemistry 112 and 211); organic chemistry (with lab), 8 credit hours (Chemistry 111 and 214); physics (with lab), 8 credit hours (Physics 151-152); English, 6 credit hours (English 110 and an additional course); mathematics, at least college algebra for most schools, however, some schools such as the University of Wisconsin at Madison require biochemistry. Others may require calculus; additional electives to total the minimum requirements of the particular medical school; and an internship with a physician. Courses such as human anatomy and physiology, vertebrate structure, genetics, microbiology, cell physiology, and biochemistry also are helpful when preparing for medical school.

Nursing and Ripon College's Affiliation with Rush University

Although a person with an undergraduate nursing degree will have no trouble finding employment, to advance in this field it is usually necessary to obtain a Masters degree. Graduate entry-level nursing programs are available for those students who have earned a baccalaureate degree. Graduate programs in nursing include a master's of science (M.S.), doctor of nursing (N.D.), and doctor of nursing science (D.N.Sc.). For these programs, an applicant must have a minimum grade point average of 3.0. The graduate record exam (GRE) and an interview are required. Prerequisite course work includes human anatomy and physiology (Biology 211 and 312), microbiology (Biology 314),

inorganic chemistry (Chemistry 112), and organic chemistry (Chemistry 111). Coursework in psychology (110, 235, 242, or 243), sociology (110 or 115), English (110 and another English course) and statistics (Mathematics 120 or Psychology 211-212) are recommended.

Ripon College is affiliated with Rush University in Chicago, and Ripon graduates who meet the admission requirements can be automatically accepted into the Generalist Entry Master of Science in Nursing program. Required prerequisite courses, all completed with a grade of C or better, include organic chemistry (Chemistry 111) or biochemistry (Chemistry 422), human anatomy and physiology (Biology 211-312), microbiology (Biology 314), statistics (Math 120 or Psychology 211-212), psychology or sociology (Psychology 110, Sociology 110 or 115), and human growth and development (Psychology 235, 242, or 243). A prerequisite course in normal nutrition is required and may be taken online. A GPA of 3.0 or higher is required, and the GRE exam is waived if the applicant has a Ripon College GPA of 3.25 or greater.

Optometry

The American Optometric Association (AOA) published definition of an optometrist is as follows: "Doctors of Optometry are independent primary health care providers who examine, diagnose, treat and manage diseases and disorders of the visual system, the eye and associated structures, as well as diagnose related systemic conditions." Most students entering optometry school have a bachelor's degree from a four-year college or university. Optometry programs assess undergraduate grade point average, scores on the Optometry Admission Test (OAT), undergraduate degrees, biographical information, knowledge of the profession, letters of reference, and an interview.

The specific admission requirements

for Optometry schools differ markedly from one school to another and it is important that the applicant obtain a catalog from the specific school or college of optometry where he or she plans to apply. The following guidelines should be kept in mind while planning an undergraduate curriculum: biology, including general zoology (Biology 121), microbiology (Biology 314), human anatomy and physiology (Biology 211), cell biology (Biology 327), and genetics (Biology 219); chemistry, including inorganic (Chemistry 112), organic (Chemistry 111), and biochemistry (Chemistry 422); general physics (Physics 151-152); English composition (English 110); psychology (Psychology 110); mathematics, including calculus (Mathematics 201) and statistics (Mathematics 120); and computer science (Computer Science 101). Additional courses may include sociology, public speaking, business, and economics.

Pharmacy

Historically, the functions of a pharmacist centered on the preparation and provision of a drug product to a patient. However, over the past 30 years, pharmacists have begun to complement their practice with a more proactive approach, emphasizing pharmaceutical care. Today pharmacists are responsible for selecting an appropriate dosage and dosage schedule, preparing medication for administration, providing information about medication, and advising and monitoring patients to prevent or detect harmful side effects. Reflective of this change, a majority of the nation's schools and colleges of pharmacy have recently voted to move toward awarding the doctor of pharmacy (Pharm. D.) degree as the only professional degree in pharmacy.

A Pharm. D. degree requires at least two years of preprofessional study followed by at least four years of professional study. Consequently, a number of

students obtain their bachelor's degree before matriculating into a Pharm. D. program. Entry-level Pharm. D. admission is based upon completion of pre-pharmacy courses, quality of academic record, Pharmacy College Admission Test (PCAT) scores, letters of recommendation, resume, and a personal interview. The specific admission requirements for Pharm. D. programs differ markedly from one school to another and are generally more extensive and detailed than those of medical schools. It is important that the applicant obtain a catalog from the specific school of pharmacy where he or she plans to apply.

The following guidelines should be kept in mind while planning an undergraduate curriculum of preprofessional preparation: inorganic chemistry, 8-10 credit hours (Chemistry 112 and 211); organic chemistry, 8-10 credit hours (Chemistry 111 and 214); biology, at least 12 credit hours including general biology (Biology 121), vertebrate structure (Biology 216), and genetics (Biology 219) or botany (Biology 227); general physics, 8-10 credit hours (Physics 151-152); calculus, 4-5 credit hours (Mathematics 201); communication, 3-6 credit hours (English 110 and possibly Communication 115); microeconomics, 3-4 credit hours (Economics 212); social science, 3 credit hours, sociology (Sociology 110) or anthropology (Anthropology 110); behavioral science, 3 credit hours, (Psychology 110); history, 2-3 credit hours; humanities, 6 credit hours; ethnic studies, 3 credit hours; and additional electives to total the minimum requirements of the particular pharmacy school.

Physical Therapy and Corrective Therapy

There are several academic paths to certification as a physical therapist; however, the most common has become a master

of science degree in physical therapy. In this case, the student's undergraduate degree is not in physical therapy and a complete bachelor's degree will be required of all students applying for admission to the physical therapy professional program. Although there is no specific major required for entrance into a physical therapy program, the undergraduate major is often biology, exercise science, or self-designed.

The specific admission requirements vary considerably from school to school and are generally more extensive and detailed than those of medical schools. It is important that the applicant obtain a catalog from the specific school of physical therapy where he or she plans to apply. Many admission requirements include a bachelor's degree from an accredited college or university; GRE; a minimum cumulative grade point average, usually a 3.0; a minimum science grade point average; successful completion of all prerequisite courses no later than the spring semester prior to summer admission; evidence of professional behavior required to participate effectively in a health care environment; and satisfactory completion of volunteer or paid patient care experience in two physical therapy settings under the supervision of a physical therapist, usually at least a minimum of 20 hours in each setting.

The following guidelines should be kept in mind while planning an undergraduate curriculum: biology, including introductory biology (Biology 121), animal biology, with lab (any zoology course); human physiology, with lab (Biology 211 and 312), anatomy, with lab (Biology 211, 216, 312); a year sequence of chemistry, with lab (Chemistry 111 and 112); biochemistry (Chemistry 422); a year sequence of general physics, with lab (Physics 151-152); psychology, including general psychology (Psychology 110) and human development (Psychology 235,

242, or 243); and statistics (Mathematics 120). In addition, the following courses are recommended by many schools and required by others: kinesiology, exercise physiology, neurosciences, physiological psychology, calculus, ethics, medical sociology, cultural diversity, counseling, public speaking, public health, English and technical writing, English composition, computer science, and additional courses in the humanities and social sciences. Internships with physical therapists also are required (Biology 551 or 552). Because most physical therapy programs require hands-on experience, students are encouraged to get involved in the training program. Exercise Science 211 and 412 are recommended to prepare students to participate in more advanced activities of this sort.

A baccalaureate degree with a major in exercise science is a prerequisite for admission to a training program in corrective therapy. Following graduation, the interested student enters a one-year training program at an approved institution where corrective therapy is available. There is a subsequent certification examination. For more information, consult any member of the Health Professions Advisory Committee.

Physician Assistant

Physician assistants are health professionals licensed to practice medicine with physician supervision. Within the physician/PA relationship, physician assistants exercise autonomy in medical decision making and provide a broad range of diagnostic and therapeutic services. For example, PA's are qualified to take medical histories, order laboratory tests, diagnose and treat illnesses, give medical advice, counsel patients, perform physical exams, assist in surgery, and set fractures.

The specific admission requirements for PA programs differ from one school to another and it is important that the ap-

plicant obtain a catalog from the specific PA program where he or she plans to apply. Although no specific major is required, you should plan carefully to ensure that your education and employment experiences enhance your chances for admission. Most PA programs require applicants to have a minimum of two years of college credit and more than half of those who apply already have a college degree. Many programs now are completely at the graduate level, and a baccalaureate degree is required. Further, some health care experience is required prior to admission. Thus, it is a good idea to volunteer in a hospital, and to obtain EMT or CNA certification. Some schools also require the Allied Health Professional Admissions Test (AHPAT).

The following guidelines should be kept in mind while planning an undergraduate curriculum: inorganic chemistry (Chemistry 112), organic chemistry (Chemistry 111), biochemistry (Chemistry 422), general biology (Biology 121), zoology (Biology 215 or 216), microbiology (Biology 314), human anatomy and physiology (Biology 211 and 312), general psychology (Psychology 110), and additional electives to total the minimum requirements of the particular physician assistant program.

Podiatry

Podiatric medicine is a branch of the medical sciences devoted to the study of human movement with the medical care of the foot and ankle as its primary focus. A doctor of podiatric medicine (DPM) specializes in the prevention, diagnosis, and treatment of foot disorders, diseases, and injuries. Although schools of podiatric medicine specify three years of preprofessional education as a minimum requirement for admission, a baccalaureate degree is strongly recommended (over 90% of entering students have a bachelor's degree). No specific under-

graduate major is required. Most colleges of podiatric medicine require a certain level of performance on the Medical College Admission Test (MCAT). Podiatric colleges also assess the undergraduate transcript, grade point average, letters of recommendation (one from the Health Professions Advisory Committee, two from science faculty, and one from a podiatric physician), and an interview.

The minimum semester credit hour requirements for all of the colleges of podiatric medicine include the following: biology, 8 credit hours (Biology 121 and an additional course); chemistry (general/inorganic), 8 credit hours (Chemistry 112 and 211); organic chemistry, 8 credit hours (Chemistry 111 and 214); physics, 8 credit hours (Physics 151-152); English, 6 credit hours (English 110 and an additional course). It is strongly recommended that the college curriculum also include three or more of the following courses: anatomy (Biology 211, 216, or 312), biochemistry (Chemistry 422), genetics (Biology 219), histology (Biology 216), microbiology (Biology 314), and physiology (Biology 211 and/or 312). The latest a student may take the MCAT is in the spring of the year prior to fall admission.

Veterinary Medicine

Schools of veterinary medicine are one of the most selective of professional schools. They assess the undergraduate transcript and grade point average, standardized examination (usually the GRE, but occasionally the MCAT or VCAT, taken in the spring of the junior year), animal contact and work experience with both large and small animals, veterinary medical experience, other preparatory experience, college degree earned, extracurricular activities, letters of recommendation, and a personal interview.

The specific admission requirements

vary considerably from school to school and are generally more extensive and detailed than those of medical schools. It is important that the applicant obtain a catalog from the specific school of veterinary medicine where he or she plans to apply. Although no specific major is required, you should plan carefully to ensure that your education and animal work experiences enhance your chances for admission.

Typical course requirements include: general and qualitative chemistry, 8-10 credit hours (Chemistry 112 and 211); organic chemistry, 8-10 credit hours (Chemistry 111 and 214); biochemistry, 3-4 credit hours (Chemistry 422); general biology or zoology, 5-6 credit hours (Biology 121 and an additional course in animal biology, most likely Biology 216); genetics or animal breeding, 3 credit hours (Biology 219); microbiology, 3-4 credit hours (Biology 314); physiology, 3-4 credit hours (Biology 211-312); general physics, 6-10 credit hours (Physics 151-152); statistics (Mathematics 120); English composition, 3-6 credit hours (English 110); social science or humanities, 6-10 credit hours; and additional electives to total the minimum requirements of the particular veterinary school. In addition, calculus (Mathematics 201) and courses in animal behavior (Psychology 233) and husbandry may be required.

Other Fields of Study

Engineering

A pre-engineering program will prepare students for further education in the field of engineering as they earn a bachelor's degree in a similar field. Students intending to become engineers may follow one of three plans. The first option is to complete a bachelor's degree at Ripon and then do advanced work leading to a

master of science in engineering from a technical school. The second option is to study three years at Ripon and three years at an engineering school; students following this plan receive a bachelor's degree from Ripon and a master's degree from a technical school. The third option is to study three years at Ripon and two years at an engineering school; students following this plan receive bachelor's degrees from both institutions.

Students in these programs need strong aptitudes in mathematics and science. They should also maintain a high scholastic average in courses taken at Ripon. Consult Professor Sarah Desotell for further information regarding this program.

Students interested in combining studies in the biological and physical sciences for graduate studies leading to degrees in bioengineering or medical physics should consult any member of the Health Professions Advisory Committee.

Forestry and Environmental Studies

Students interested in forestry, environmental studies, and resource management may complete their baccalaureate degree and then select a graduate program, usually for two years, leading to a master's degree. A cooperative program between Ripon College and Duke University allows qualified students who have planned their program at Ripon carefully to enter the graduate program at Duke after three years. The student will receive the A.B. degree from Ripon at the successful completion of the first year of graduate study and the master of forestry or master of environmental management degree from Duke at the successful completion of the second year. A major in Environmental Studies would be an appropriate course of study at Ripon College. Consult Professor George Wittler.

Journalism

Interested students should elect a well-rounded group of courses with an emphasis on English, history, economics, and politics and government. When choosing a major, students should anticipate the probable area of journalistic specialization, such as science reporting or performing arts criticism. A self-designed major in journalism is also available. Practical journalistic experience may be obtained by working on the staff of the campus newspaper, radio or RCTV, yearbook, literary magazine, or office of marketing and communications. A semester or summer internship with a newspaper, radio station, or television network is highly recommended.

A student who goes from Ripon into specialized training at a school of journalism may, by previous arrangement, qualify for a degree from Ripon and from the school of journalism provided that the student completes three years at Ripon, the distribution requirements, and a major. Consult Professor Dean Pape, journalism advisor, for any questions related to this program.

Law and Government Service

Careers in law, military service, politics, and public administration do not require a specific major or a specific set of courses. Students wishing to pursue a successful career in any of these fields must develop skills of logical analysis and argumentation and mastery of the English language in writing and speech. Training in economics and in statistics and computer science is highly desirable; insight gained from the study of history, philosophy, and politics is invaluable.

Students contemplating legal, military, or governmental service careers elect courses from economics, English, history, philosophy, and politics and government and usually major in one of these disci-

plines. A minor in Law and Society is also available. For more information consult Professor Lamont Colucci (government), Professor Rebecca Matzke (pre-law), and the career development office.

Library and Information Science

Librarianship offers students an excellent opportunity to use knowledge and skills gained through their liberal arts education. Professional librarians have masters or doctoral degrees in library and information science and come from a variety of undergraduate backgrounds. Librarianship offers specialization in fields such as music, law, the medical sciences and business, to name a few. Students interested in a career in library and information science will benefit from courses in computer science, education (for school librarianship), and history and art history (for archival management). Lane Library's annual Bernice Wells Carlson work study grant offers student assistants the opportunity to shadow librarians in their departments and learn about the various facets of library work. Internships in the College archives are also available. For more information consult the library staff.

Military Leadership

The U.S. Army and Ripon College offer courses leading to a commission in the army, with excellent opportunities for a wide variety of careers in the military service as a commissioned officer. Students may also apply for graduate study and professional study such as law, medicine or dentistry prior to commissioning. Qualified cadets in the military science program may be awarded ROTC scholarships which, in addition to a subsistence allowance, cover the full cost of tuition, books, and fees. Consult the military science department.

Ministry

The best preparation for special study at a divinity school or seminary is a well-balanced liberal arts education, with emphasis on English, philosophy, religion, and social sciences. Public speaking is also important. Consult Professor Brian Smith.

Social Work

A liberal education is excellent preparation for a career in social work because it gives broad exposure to problems which people and societies face and which social workers typically encounter. Students interested in social work may major in anthropology, economics, history, philosophy, politics and government, psychology, sociology, or may plan a self-designed major. Graduate work should be strongly considered. Consult Professor Liddy Hope.

Teaching

Licensure: Under the supervision of Ripon's Educational Studies Department, a student may earn teacher licensure in several subject areas. Ripon believes a good teacher meets the standards of professional preparation in education, possesses competency in the subject matter taught, understands the human needs that motivate individual behavior, and is sensitive to the forces and value systems that influence society. The College further believes that these qualities are best developed at the undergraduate level through a program of liberal and professional education. The professional course work in education that Ripon offers is designed to prepare teachers for initial

licensure. Their on-the-job experience, graduate study, and professional development activities are the ingredients for continued development as good teachers.

Special Education: In cooperation with the University of Wisconsin-Oshkosh, Ripon College offers students opportunities to obtain licensure in special education. Students interested in this option will generally begin taking courses at UW-O during the junior year of study and can expect to complete five years of study to earn both regular and special education licensure.

Specialized Areas of Education: Ripon provides the prerequisite work for graduate study in most specialized areas in the field (e.g., reading, school counseling). Ripon's academic departments offer elective courses which provide background preparation for these specialized roles. Students interested in one of these specialized positions should seek the advice of education professors no later than the sophomore year.

Private Schools: Students with strong academic records, but lacking licensure, can be employed by private schools for elementary and secondary teaching. Courses in education strengthen such a teacher's qualifications.

College and University: A master's degree is the usual minimum for an initial appointment, and a terminal degree (such as the Ph.D.) is often required. A strong departmental major at Ripon qualifies the student for admission to an appropriate graduate school.

Consult with the chair of the Educational Studies Department for more information.