

## Premedical and Health Sciences

### Preprofessional Studies

Clinical Laboratory Science  
and Medical Technology  
Cytotechnology  
Health Information Management  
Hospital and Health Administration  
Nuclear Medicine Technology  
Nursing  
Occupational Therapy

Optometry  
Pharmacy  
Physical Therapy  
Physician Assistant  
Podiatry  
Predentistry  
Premedicine  
Preveterinary Medicine

### Majors and Minors

Biochemistry  
Biology  
Dietetics  
Food Science  
Gerontology

Health and Human Performance  
Family Finance, Housing, and Policy  
Nutritional Science  
Psychology

*If you're interested in a career in medicine, nursing, dentistry, or other health-related fields, consider doing your pre-professional course work at Iowa State University. Read on to discover how Iowa State programs work to help you become your best.*

When you participate in undergraduate student clubs and activities, you'll be exposed to a variety of professional experiences and training opportunities.

You'll hear from medical professionals and students in advanced health care programs.

You'll establish connections with professional athletic trainers, strength coaches, and athletes.

Some student organizations take field trips to hospitals, clinics, laboratories, health care facilities, and restaurants, so you can see exactly what jobs in your field entail.

Your earliest role model was your family physician, who inspired you to serve the public by practicing medicine. You want to help shape decisions about medical care—decisions that impact nursing facilities, schools, hospitals, and your community. Perhaps you see yourself as a pioneer in the medical field, researching new technologies or treatments, or defining legal and ethical issues. Or you're interested in working with athletes in a sports medicine program, with patients one-on-one as you develop treatment plans, or on nutrition programs that enhance our quality of life. Iowa State offers a wide range of preprofessional programs and majors to prepare you for a career in health.

### Sound academic preparation means healthy career options

Iowa State is nationally recognized as an academic center for biological, physical, and food sciences. Because of that reputation, many organizations maintain ongoing partnerships with Iowa State's programs, providing internships, cooperative learning, research, or employment opportunities.

### Preparing for a career in health

Iowa State offers a curriculum that focuses on preprofessional studies and prepares you to pursue advanced education at most professional schools. The specific courses you take in your preprofessional program will depend upon the requirements of the professional schools to which you want to apply.

As part of your program, you will complete the prerequisite

courses and laboratories that are required by professional schools. You will also be able to participate in research laboratory studies with Iowa State scientists, conduct independent study projects, and experience patient care by working with Ames health facilities. Students generally earn a bachelor's degree in the process of completing preprofessional health requirements and then continue their studies by transferring to a professional program.

### Study with faculty who practice what they teach

There are opportunities for undergraduates to work in laboratories with biochemists, geneticists, microbiologists, neuroscientists, dietitians, therapists, athletic trainers, fitness and health specialists, and researchers.

Faculty assume many roles as they work to prepare students for advanced study. Faculty often work with students outside of the classroom, helping to facilitate research partnerships, learning communities, employment, lab assistantships, program contacts, and independent projects.

### Selecting the best academic program

Many of the programs listed in this brochure require similar course work, which means that you can explore and prepare for many career options in the early stages of your studies. Your academic adviser will work with you to design your curriculum and make certain you can take advantage of the opportunities Iowa State offers you.



# Premedical and Health Sciences

## Preparation for medicine and other health programs

Iowa State's emphasis on science and technology has established our reputation for world-class programs and cutting-edge research, laboratories, and technologies that support your studies in science and math.

For more information about these programs, contact Iowa State's premedical and preprofessional health programs coordinator:

102 Catt Hall, Ames, Iowa 50011

Phone: 515 294-4841; E-mail: jowens@iastate.edu

Web: [www.las.iastate.edu/academics/healthprograms.shtml](http://www.las.iastate.edu/academics/healthprograms.shtml)

## The health care track

### College preparation for medical school or professional health studies programs

Medicine, physical therapy, nursing, clinical and medical technology, health services and administration—at Iowa State University you can prepare for advanced study in any health care field.

Health programs are competitive. Though institutions may vary in their requirements for admission, most professional health programs require similar academic, testing, and attendance components:

- **University study**

2–4 years at an accredited college or university of arts and sciences or an institute of technology

- **Core courses and laboratories commonly required**

biology  
biochemistry  
general chemistry  
organic chemistry  
math, physics, and/or statistics  
English  
psychology

- **Other considerations for admission when you apply to medical school or advanced studies in health sciences**

- **Test scores**—you may be required to take an assessment test before you enroll in a professional program or graduate school. Possible tests include the Graduate Record Examination (GRE), Medical College Admissions Test (MCAT), or Dental Admissions Test (DAT)

- **Grade point average**—usually a minimum of 2.5 or higher is required, though competitive programs will weigh your performance against other applicants

- **Other factors**—internships, letters of recommendation, service activities, commitment, and character

## Frequently asked questions about health care studies

*So what major do I choose if I plan to enroll in medical, dental, or other professional health programs? Do I have to choose a major in the sciences?*

You do not have to major in the sciences, even if you are choosing to pursue a career in a health-related field. In fact, you can choose *any* major, as long as you meet the requirements of the preprofessional program you've chosen.

Though the most common majors for premedical students are biological sciences, engineering, and psychology, many students choose majors that build on their own strengths, talents, and interests.

*What is a preprofessional program? Is it a major? Do I get a degree in that program?*

A preprofessional program is not a *major*. Typically, academic institutions do not offer a formal degree in premedicine or any preprofessional program. Rather, universities offer preprofessional programs of study that are geared to support the general admissions requirements for the field you have chosen to pursue. In some cases, students who have completed their preprofessional program at Iowa State can earn a degree from Iowa State at the same time that they complete their professional studies elsewhere.

For health-related fields, your preprofessional program of study will include a background in science and math but will also accommodate a broad variety of courses, some of which may reflect your personal interests and enhance your science background—philosophy, music, art, creative writing, journalism.

*Will Iowa State prepare me for medical school or advanced studies as a health professional?*

Yes. Most professional programs or graduate schools require 2–4 years of course work at an accredited undergraduate college. To prepare for medical school or a health-related professional program, you will work with an adviser to make certain your preprofessional program meets the course requirements for future study. Admission requirements for professional programs vary, so it is always easier to plan if you have a sense of which graduate schools or health programs most interest you.

## Preprofessional studies at Iowa State University

**Clinical Laboratory Science and Medical Technology**  
prepare to perform tests to diagnose illness and blood profiles

**Cytotechnology**  
prepare to perform cell analysis—mounting, staining, and evaluating specimens of human body tissue

**Health Information Management**  
prepare to develop, coordinate, and implement information systems that impact organizations

**Hospital and Health Administration**  
prepare to work in health management, insurance, administration, or government program administration

**Nuclear Medicine Technology**  
prepare to use radioactive chemicals to diagnose and treat disease

**Nursing**  
prepare to care for patients in hospitals, clinics, health centers, schools, or industry

**Occupational Therapy**  
prepare to help patients develop independence and to restore basic functions to those disabled by physical or emotional injury

**Optometry**  
prepare to diagnose, treat, and manage diseases of the visual system and the eye

**Pharmacy**  
prepare to dispense therapeutic drugs, educate various audiences about drugs, and conduct pharmaceutical research

**Physical Therapy**  
prepare to prevent physical disabilities and rehabilitate the disabled

**Physician Assistant**  
prepare to work with doctors to evaluate, examine, and treat patients

**Podiatry**  
prepare to diagnose, prevent, and treat injuries and deformities of the feet

**Pre-dentistry**  
prepare to provide and promote oral health care

**Premedicine**  
prepare to study, diagnose, and treat human illness and injury

**Preveterinary Medicine**  
prepare to study, diagnose, and treat animal illness and injury



## Some majors and minors to consider

If you are interested in a career as a health professional, you may major in any field as long as you meet the science and math requirements necessary for advanced study. Most of our premedical students major

in biology, biochemistry, or psychology. To complement your professional goals, you may consider a nonscience major, or a second major or minor, such as communications or business.

### Biochemistry

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Biochemistry provides the basis for much of modern biotechnology. Biochemists seek to understand life processes in terms of chemical and physical principles. They conduct research in such areas as the structure and function of enzymes, membranes, and hormones; cell metabolism; reproduction; the chemical basis of heredity; muscle contraction; nerve transmission; and

the design and evaluation of drugs for the treatment of disease.

As part of your program of study, you may take a research course designed to give you an opportunity to work with faculty in a research laboratory. Such partnerships may lead to future work, internships, or even publication of the research results.

### Biology

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Iowa State University is a major center for research and education in the biological sciences. Students have the opportunity to learn from some of the nation's leaders in biological research and teaching and to participate in innovative programs.

Offered as a bachelor's degree in both the College of Agriculture and the College of Liberal Arts and Sciences, our high-quality academic program can prepare you for a career in human medicine and other health professions by meeting all necessary prerequisites for admission. You may choose courses from our advanced course list in areas such as physiology, anatomy, immunology, neurobiology, biochemistry, and genetics. Should your plans change, the biology major also offers the flexibility to

change your focus within biology by modifying your advanced course plan.

While studying biology at Iowa State, you can take advantage of our many opportunities designed to enhance your degree plan. You might study abroad, choose to take courses at field stations around North America, participate in North American or international field trips in biology, or explore the frontiers of biology and gain experience by doing research here on campus and through summer programs. Our freshman learning community, BEST, is recognized as one of the most innovative on campus and provides academic, social, and service learning programs designed to ease transition to the university and help students achieve success.

### Health and Human Performance

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When you enroll in health and human performance at Iowa State, you study the biological and behavioral aspects of human movement through disciplines such as biomechanics, exercise physiology, motor behavior and control. There are three sports medicine career tracks to choose from: health/fitness management, athletic training, and exercise science. In health/fitness management, you will prepare for work as an exercise specialist, as a personal trainer, or for work in cardiac rehabilitation. In athletic training, you will specialize in sport injury prevention and rehabilitation. The exercise science option can prepare you with the science background needed for entry into professional schools such as physical therapy,

medical school, or other allied health professions.

You can also study human disease and disease prevention through the community/public health track. Your marketplace might include work with hospitals, government, or private agencies as a program coordinator or educator to assist people with managing their health and lifestyle choices.

In addition to your course work, you will complete a 10- to 16-week field experience in which you get to practice what you've learned in the classroom. Facilities include well-equipped labs in exercise physiology, biomechanics, and motor behavior, as well as a state-of-the-art athletic training facility.

### Dietetics

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[www.fcs.iastate.edu/fshn/](http://www.fcs.iastate.edu/fshn/)

Dietetics is the study of nutrition and food science and its applications to medical dietetics and community nutrition. Graduates work in hospitals, clinics and long-term care facilities, food and pharmaceutical industries, and government nutrition programs. If you want to become a registered dietitian, Iowa State also

offers a dietetic internship, which provides qualified students supervised practice. The internship is approved by the American Dietetic Association (ADA). Those who take the internship will be eligible for the registration examination administered by the ADA.

### Food Science

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Food science concerns everything that happens to food, from the time it leaves the farm until the consumer buys it. Food scientists apply the basic principles of chemistry, biology, and physics in studying the quality, processing, preservation, preparation, and safety of foods, and to develop new food products. When you major in food

science, you will focus on one of the following programs: food science and technology (approved by the Institute of Food Technologists), food science and industry, or consumer food science. You will take courses in food chemistry, food analysis, food processing, food microbiology, and food product development.

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State Library of Iowa  
Miller Building  
Des Moines, Iowa

## Gerontology

Department of Human Development  
and Family Studies  
2352 Palmer Building  
Ames, Iowa 50011  
Phone: 515 294-8618  
[www.iastate.edu/~gerontology](http://www.iastate.edu/~gerontology)

If you are interested in aging-related fields or in improving your understanding of aging persons in American society, consider Iowa State's undergraduate minor in gerontology.

When you minor in gerontology, you engage in interdisciplinary study that covers a wide range of training, research, and experience. Core courses cover aging and

the family, the economics of aging, life-course sociology, environments for the aged, and the aged in society.

As a graduate with a minor in gerontology, you might pursue a career in community-based agencies such as senior centers, nutrition sites, and adult day-care programs. Some undergraduates minor in gerontology as they prepare for advanced study in medicine or community health.

## Nutritional Science

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Nutritional science looks at the connection between diet and health. Nutritionists study the effects of various nutrients in the cause, treatment, and prevention of many diseases, as well as the maintenance of normal health, growth, and development. This specifically

developed program also prepares you for professional programs such as medical, dental, or veterinary schools, or graduate studies in nutrition. Most of our graduates obtain advanced degrees and work in pharmaceutical companies, universities, hospitals, clinics, or the federal government.

## Psychology

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All psychologists have one thing in common—an interest in behavior. They work to understand how people and other organisms develop, learn, think, feel, act, and relate to each other. As a psychology major, you have the opportunity to apply your skills in analyzing behavior and its causes in supervised settings in the community or in research laboratories. Iowa State students with undergraduate degrees in psychology have obtained positions such as paraprofessionals in hospitals and clinics; counselors in federal, state, and local health agen-

cies; ministers; correctional, recreation, or rehabilitation counselors; training and development personnel; writers; and researchers. A bachelor of science in psychology is good preparation for medical school, especially if you wish to specialize in psychiatry. If you want to become a professional psychologist, licensed to provide psychotherapy, or intend to seek an academic position in research (e.g., professor, research scientist), you should plan to pursue a doctoral degree in psychology.

## Preparing to study at Iowa State University

The best preparation continues to be a strong college preparatory program of study, which includes courses in English, mathematics, laboratory sciences, social studies, and foreign languages. If you intend to transfer credits from another institution, you may contact our Office of Admissions for assistance in selecting the best courses for your program of study.

## Questions about admission

In addition to writing us at the address below, we encourage you to visit our Web site, which features a course catalog and campus information.

**Iowa State University**  
**Office of Admissions**  
**100 Alumni Hall**  
**Ames, Iowa 50011-2011**  
**Phone: 515 294-5836**  
**Toll Free: 800 262-3810**  
**E-mail: [admissions@iastate.edu](mailto:admissions@iastate.edu)**  
**Web: [www.iastate.edu](http://www.iastate.edu)**

*Material in this brochure was accurate at the time of printing. For the most up-to-date information, visit our Web site at [www.iastate.edu](http://www.iastate.edu).*

*Iowa State University does not discriminate on the basis of race, color, age, religion, national origin, sexual orientation, sex, marital status, disability, or status as a U.S. Vietnam Era Veteran. Any persons having inquiries concerning this may contact the Director of Equal Opportunity and Diversity, 515 294-7612.*

**IOWA STATE UNIVERSITY**  
**Helping you become your best.**