IOWA STATE UNIVERSITY

Biotechnology

Agricultural Business
Agricultural Engineering
Agricultural Studies
Agriculture and Life Sciences Education
Agronomy
Animal Ecology
Animal Science
Biochemistry
Bioinformatics and Computational Biology
Biological Systems Engineering
Biology
Biophysics
Chemical Engineering
Chemistry
Civil Engineering
Computer Engineering
Computer Science
Construction Engineering
Economics
Electrical Engineering
Food Science
Forestry
Genetics
Horticulture
Kinesiology and Health
Mathematics
Microbiology
Nutritional Science
Philosophy
Physics
Political Science
Religious Studies
Statistics

Iowa State University has more than 100 majors that provide virtually unlimited academic opportunities. In this brochure you'll find information about your specific area of interest and a family of related majors that you may want to explore during your adventure here at Iowa State. Please use the contact information listed inside and let us help you discover your passions, unlock your potential, and **enjoy the adventure.**

Preparing for a biotechnology career

An Iowa State undergraduate degree with a biotechnology emphasis is a solid foundation on which to build a career. If you decide to enter the workplace after earning your Iowa State degree, you'll find that an emphasis in biotechnology attracts employers in industry, government, and public health. You might be part of a team researching and developing new and beneficial industrial products. You may help find a cure for a devastating disease. You could work to modify the genetic code of plants or animals to improve crop varieties and livestock breeds. You might work in a forensics laboratory to help solve crimes. Or you might provide the scientific or ethical expertise that government agencies and legislative bodies need to help them guide the direction of biotechnology research.

Selecting the academic department for you

When you choose to prepare for a biotechnology-related career at Iowa State, you have many options. Iowa State University does not have a major called biotechnology because many different kinds of careers involve biotechnology. Instead, you will select a major within an academic department, and then structure your degree program to emphasize biotechnology. Your major is the specialized area in which you will apply your biotechnology training.

Working with the best faculty

More than 300 faculty members at Iowa State University are involved in some aspect of biotechnology teaching and research. Their academic homes are in the colleges of Agriculture and Life Sciences, Engineering, Human Sciences, Liberal Arts and Sciences, or Veterinary Medicine.

In the classroom, Iowa State's biotechnology faculty provide quality teaching supported by the latest in instructional technology. You will learn from internationally recognized experts who are skilled in helping students like you achieve their academic goals. Many academic departments sponsor student clubs where you can enjoy academic, career, and social opportunities with other students and faculty who share your interests.

In the laboratory, you can obtain practical, hands-on experience to build your scientific expertise, increase your value to prospective employers, and help finance your education. Many biotechnology faculty welcome undergraduate students as members of their interdisciplinary research teams. Paid positions are available year-round.

Working in the best facilities

Iowa State's 235 general classrooms and 500 teaching laboratories are among the best in the world. The university's information technology services have permanently equipped more than 130 general classrooms to display output from computers, videos, laser discs, and document cameras, as well as traditional media. Computer labs and wireless networking are available to students throughout the campus. A distributed computing environment will provide you with electronic mail and other Internet services.

In addition to hands-on experience in well-equipped teaching laboratories, you can learn how to operate state-of-the-art scientific instruments in more than a dozen instrumentation facilities. You'll access the latest equipment available for research in cells, proteins, nucleic acids, fermentation, microscopy, image analysis, nuclear magnetic resonance, animal gene transfer, and plant transformation. Many of the instrumentation facilities that support biotechnology research offer free instruction to students.

Making your career choice

Iowa State University departments and programs that have undergraduate majors relating to biotechnology are listed below. For more information, please contact the department or program, or phone the Iowa State Office of Admissions at 800 262-3810.

Agricultural Business

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Iowa State offers one of the best agricultural business programs in the nation. The agricultural business major emphasizes courses in business and economics, with an agricultural focus. When you major in agricultural business you may select an area of emphasis such as agribusiness management, agricultural credit, commodity marketing, farm management, international agriculture, or agricultural sales.

Future agricultural business graduates are needed to meet the growing demand for commodity merchandisers, agricultural loan officers, agribusiness managers, farm managers, agricultural salespeople, food and livestock brokers, appraisers, market analysts, cooperative extension agents, food inspectors, and quality control specialists.

Agricultural Engineering

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As an agricultural engineering student you will learn how to design systems that directly impact peoples' lives. You will explore the biological, physical, and engineering sciences and apply your knowledge to solving problems using agricultural and biological engineering design methods.

You may specialize in either power and machinery engineering, animal production systems engineering, or land and water resources engineering.

If you choose the power and machinery option, you will study functional analysis and design of agricultural field machinery, agricultural tractor power, instrumentation, agri-industrial application of electric power and electronics, and fluid power engineering.

The animal production systems engineering option allows you to focus on all aspects of animal production including structural design and analysis, environmental control options for housed animals, and air quality issues associated with animal production.

In the land and water resources engineering option, you will study the design and evaluation of soil and water conservation systems, GIS and natural resource management, and principles of environmental engineering.

Agricultural Studies

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The agricultural studies major is designed especially for those who are interested in production agriculture and the businesses and agencies that serve the food and agriculture industry.

The program in agricultural studies is designed for flexibility, allowing you to develop a broad-based education in agricultural sciences and agri-business. Your coursework includes studies in agronomy, animal science, agricultural economics, agricultural technology, leadership, and agricultural communications. Our goal is to provide you with a working knowledge of the industry by combining classroom experience with practical work experience and leadership training.

This program prepares you to be competitive in the job market, especially in the fields of agricultural production, farming, management, and sales/service, as well as entrepreneurship.

Agriculture and Life Sciences Education

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The agriculture and life sciences education major combines agriculture, and life sciences with social sciences and communications. Some students choose the teacher certification option while others choose the communications option. These options encourage you to focus on developing your people skills in combination with your agricultural expertise.

Small class size encourages you to closely interact with faculty and peers as you develop agricultural business proposals, participate in group projects, conduct FFA activities, and review and critique student work using a variety of communication technologies.

With a degree in agricultural education you will have skills needed to work in public service or industry settings as an agricultural sciences teacher, a communications specialist, an education specialist, or a product or service representative.

Agronomy

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Agronomy is the science of plants and soils for agriculture and the center of new frontiers in biotechnology, sustainable agriculture, and biorenewable fuels.

As an agronomy major you will learn about the role and diversity of plants, soils, and climates of the world. In addition to understanding ethical, cultural, and environmental issues that impact agriculture and natural resources, you will also solve problems, gain hands-on experience, and research current agricultural issues. Graduates have the theoretical and practical knowledge needed for efficient and sustainable production of food, feed, fuel, and fiber.

With a degree in agronomy from Iowa State you will be prepared for a variety of careers such as agricultural climatologist, crop consultant, seed production manager, soil and water conservationist, crop protection specialist, and field representative.

Animal Ecology

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Iowa State is the only university in the country that offers an undergraduate major in animal ecology. Your coursework will emphasize ecological principles and processes and their applications to natural resource management.

You will focus on one of four areas: wildlife biology, fisheries and aquatic sciences, interpretation of natural resources, or pre-veterinary and wildlife care.

A degree in animal ecology will prepare you for a variety of career paths with natural resource and environmental protection and animal care agencies, organizations, and businesses.

Animal Science

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As an animal science major you will focus on understanding the life cycle of companion and production animals through study of the fundamentals of behavior, growth and development, lactation, genetics and breeding, nutrition, and reproduction.

Your coursework will also integrate enterprise management and marketing aspects of the animal industry. In addition to animal management, career options include agribusiness, biotechnology, meat science, pet food and feed industry, marketing, or research.

Many students complete their pre-veterinary medicine requirements in the animal science curriculum. Graduate study programs in animal science include M.S. or Ph.D. study in breeding and genetics, behavior, nutrition, physiology, meat science, and muscle biology.

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.

Individual members of the department form a highly interconnected and overlapping network and conduct research in areas such as the structure and function of enzymes, membranes, and hormones; cell metabolism; cell biology; structural biology and dynamics; signal transduction; reproduction; the chemical basis of heredity; nerve transmission; and the design and evaluation of drugs for the treatment of disease.

The program of study emphasizes modern concepts and research methodologies and is designed to offer various opportunities to work with faculty in an active biomedical or plant science research laboratory, providing excellent training for future development in a wide variety of scientifically-based careers in universities, veterinary and medical schools, government laboratories, or the biotechnology sector.

Bioinformatics & Computational Biology

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As a bioinformatics and computational biology major you will explore the interfaces of biological, informational, and computational sciences.

Your coursework will focus on topics such as gene identification, expression, and evolution; RNA, protein, and genome structure; and molecular and cellular systems and networks.

A degree in bioinformatics and computational biology will prepare you for continued education or a broad range of research possibilities.

Biological Systems Engineering

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As a biological systems engineering (BSE) student you will learn to integrate life sciences with engineering to solve problems related to, or using, biological systems. These biological systems may include microbes, plants, animals, humans, and/or ecosystems. You will also learn about fundamental principles of engineering and life-science.

You will use your understanding of engineering to analyze organisms or ecosystems, and your knowledge of biological systems to inspire and inform their designs. The BSE degree program is student-focused and derives strength from the broad, hands-on training provided to students in the program. You will learn to use engineering methods to address societal needs related to biorenewables production and processing, water quality, environmental impacts of the bioeconomy, food processing, and biosensors. In so doing you will be prepared for professional practice and post-graduate educational opportunities.

Four distinct options are available: biorenewable resources engineering, bioenvironmental engineering, food engineering, and pre-professions/pre-graduate. You will experience all the subjects in a hands-on teaming environment using modern engineering tools and equipment. Many opportunities also exist for studying and working abroad in countries such as Brazil, Germany, Poland, Taiwan, China, and Uganda.

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.

You may develop your program of study to target your goals by choosing from a wide variety of advanced courses in areas such as animal biology, plant biology, ecology, evolution, biodiversity, genetics, development and cell biology. You will also have the opportunity to study abroad, take courses at field stations around North America, and participate in North American or international field trips in biology. In addition, you may explore the frontiers of biology by doing research on campus or through summer field courses at Iowa Lakeside Laboratory or one of our affiliated institutes including the Organization for Tropical Studies or the Gulf Coast Research Laboratory.

Iowa State's high-quality academic program will prepare you for further studies in graduate school in a diverse range of biological fields or to continue on to professional training in environmental biology, human medicine, veterinary medicine, dentistry, optometry, physical therapy, chiropractic or pharmacy.

Biophysics

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The field of biophysics is part of a major scientific revolution that is occurring in the biological sciences—for the first time, scientists can study life forms at the molecular level, which means that we can explore and discover how and why organisms function as they do.

As a biophysics major you will focus on structural biology, engaging in a detailed study of atomic components of biological molecules. You will work in the laboratory using computational and physical methods to gain atomic information, which will help you better understand how organisms work and how to develop better plants, bacteria, and other organisms. Many Iowa State students take advantage of faculty/student research opportunities, sometimes co-authoring papers and publishing the results of their studies.

Your education will prepare you for graduate study in the field of science, or professional programs in dentistry, veterinary medicine, or human medicine.

Chemical Engineering

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As a chemical engineering major you will use science, mathematics, experience, creativity, and ingenuity to deal with chemical and physical changes of matter and the conversion of energy to make products in the process industry.

The department provides a broad range of chemical engineering courses, as well as the opportunity to work with engineers at the Ames Laboratory of the U.S. Department of Energy, which conducts physical and chemical science research related to energy technologies.

Your coursework will prepare you for employment in areas including product development, food, pharmaceuticals, petrochemical, computer, electronic, automobile, market research, economic feasibility studies, chemical process and design, supervision and operation, chemical plant construction, and pollution control and energy conservation.

Chemistry

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When you study chemistry you have the opportunity to study scientific processes and reactions that define every aspect of daily life. As a chemistry major you will learn how to design, implement, record, and analyze the results of a chemical experiment.

Your coursework will focus on the environmental and ethical dimensions of problems and issues that face professionals. You will use modern instruments and classical techniques to identify and solve chemical problems as you explore new areas of research.

Students also have the opportunity to join both the Chemistry Learning Community and the Society for Chemistry Undergraduate Majors, as a way to network with other chemistry majors.

A degree in chemistry from Iowa State will prepare you to continue in graduate school or professional studies, or qualify you for a career as an environmental chemist, pharmaceutical chemist, forensic scientist, science writer, technical salesperson, product development chemist, or researcher.

Civil Engineering

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Civil engineers monitor public safety, health, and productivity; they plan, design, and supervise construction, operation, and maintenance of public and private facilities. Iowa State's civil engineering program is one of the 10 largest in the United States in number of graduates, and features distinguished faculty with awards in teaching, advising, research, and publishing. The capstone design courses are conducted in an office environment, and laboratory classes provide hands-on applications in groups of three to five students.

Your coursework will introduce you to the various areas of civil engineering, such as structural, environmental, geotechnical, materials, transportation, and surveying.

As a civil engineer you will investigate complex engineering situations, preparing you for many career paths including transportation engineer; highway designer and planner; city, county, or sanitary engineer; Army Corps engineer; construction supervisor; soil engineer; surveyor; or forest engineer.

Computer Engineering

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Computer engineering deals with all aspects of computer systems, including design, construction, operation, and testing. Your coursework will fascinate, inspire, and prepare you for learning in a variety of professional capacities.

Your learning options include computer architecture, in which you will learn about the components in a system and their properties, such as speed and reliability; networking and security, which entails how to transfer information efficiently and securely by learning how to model, design, and analyze systems; software engineering studies, which includes designing new software or improving its scope and capabilities; and VLSI (very large-scale integrated) circuits, in which you will develop circuits that include high-speed or low-power parts.

Iowa State's computer engineering program offers unique educational support, including labs for hands-on learning, collaborative problem-solving in the Active Learning Complex, learning communities, an optional internship program, professional engineering societies, and honor programs.

As a computer engineering graduate you will be prepared for a career in various industries ranging from health care, renewable energy, and retail, to security, gaming and telecommunications.

Computer Science

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As a student in computer science you will have opportunities to pursue one of the brightest futures possible. The computer science major offers students with a good background in math and science the opportunity to study a broad range of computing areas including programming, databases, networking, operating systems, software development, programming languages, algorithms, data mining, robotics, artificial intelligence, machine learning, and computing theory. Many research opportunities for undergraduates are available in the department.

Current starting salaries for graduates with a 4-year degree in computer science average $65K/year. Iowa State graduates in computer science have 99% job placement before graduation, and jobs are available in nearly every industry. Students typically participate in paid summer internships at companies that also hire our graduates for full-time jobs.

Construction Engineering

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As a construction engineering student you will learn to identify the best methods and techniques of construction to determine construction costs and schedules, propose the best construction sequence, and supervise construction projects.

Your coursework will include studies in engineering, math, business, law, and economics. In addition you will choose a specialization from among the following: heavy/highway, building, mechanical, and electrical construction. Iowa State's close ties to the construction industry allow students to engage in closely simulated experiences in designing construction processes, bidding projects, and planning and scheduling. Construction engineering at Iowa State is by far the largest one of sixteen fully accredited engineering degree-granting programs.

With a construction engineering degree from Iowa State, you will be able to choose from a variety of career paths, such as building skyscrapers, medical facilities, industrial projects, housing, transportation systems, sports facilities and educational facilities—places where people live, work, learn and play.

Economics

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Economics is a social science that studies how people and businesses make decisions, how those decisions are coordinated in the market, and how government policy can influence market outcomes with respect to the efficiency of resource utilization and the welfare of society.

A major in economics will equip you with the analytical skills to understand and contribute to policy debates on topics such as unemployment and wages, government revenues and expenditures, income inequality and poverty, pollution, natural resource management, economic growth, and many other crucial issues that fill the news media. Beyond their understanding of the way the economy works, economics majors are prized in the job market for their quantitative skills, their precision and clarity of thought and expression, and their careful and disciplined use of data in seeking answers to questions.

A bachelor's degree in economics provides employment opportunities in business and government. Some economics majors go on to seek Masters or doctoral degrees in economics, while others pursue graduate study in business or law.

Electrical Engineering

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Electrical engineers work with anything related to electronics and electrical devices. Faculty members at Iowa State University are researching thin film semiconductor devices, large-scale energy distribution, solar energy conversion, antennas, wireless networks, and many other devices and systems that we use in daily life.

As a student at Iowa State, you are encouraged to learn about several of these areas. You might take classes in communications, in which you will learn to transmit data safely and securely; in controls, in which you will study how to develop systems for robotics or avionics; in electromagnetics, fields, and antennas to learn about microwave and radio waves and their applications; in power systems, so high-quality power can be distributed in a robust and secure environment; in microelectronics and photonics, to study the speed, materials, and properties of microelectronic devices; or in VLSI (very large-scale integrated) circuits, so you can design integrated circuits for things such as high-speed communications.

The electrical engineering program offers labs for hands-on learning, collaborative problem solving in the Active Learning Complex, learning communities, an optional internship program, professional engineering societies, and honor programs to further ensure student success.

Food Science

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www.hs.iastate.edu/academics/majors-list

Food science includes everything that happens to food, from the time it leaves the farm to the time the consumer purchases it.

As a food science major you will learn about the application of the basic principles of biology, chemistry, and physics in studying the quality, processing, preservation, preparation, safety, and development of foods.

You will focus on one of the following Institute of Food Technologists approved programs: Food Science and Technology or Food Science and Industry.

A degree in food science will prepare you for a wide variety of career areas such as product development, food quality & safety, food sales and technical services, and production and management.

Forestry

Sue Blodgett
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As a forestry major you will acquire an understanding of the forest ecosystem; your coursework will include plant identification, resource evaluation, forest economics, natural resource management, and sustainable forest systems.

Forestry includes exposure to a variety of systems including public and private lands, urban systems, biodiversity and sustainability, and agroforestry. Faculty work closely with students; experiences include field trips, hands-on labs, and optional research experience, which allows you to work directly with faculty.

As part of your curriculum you participate in a 16-day, off-campus camp experience held at one of several locations across the country. This experience introduces you to practical techniques and exposes you to new landscapes and cultural circumstances.

Genetics

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As a genetics major you will explore the characteristics of living organisms to determine how they are passed from generation to generation. Understanding heredity is fundamental to all the biological sciences, particularly animal science as it relates to production and the study of disease.

The department offers a broad range of courses in every aspect of genetics, from molecular genetics of microorganisms to population genetics. You may also consider minoring in genetics to complement a major in another field of science, mathematics, or computer science.

A degree in genetics will prepare you for a career in research and development, teaching, biotechnology, health, and graduate or professional study in science, medicine, or veterinary medicine.

Horticulture

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Iowa State's horticulture program focuses on enhancing the quality of the environment and fostering stability, vitality, and growth of horticulture to promote economic and rural development.

As a horticulture major you will learn about plant growth and development, the culture and management of crops, and the ethical and environmental issues facing professionals.

You will choose a specialization in environmental horticulture, greenhouse management, fruit and vegetable production and management, nursery crop production and management, turfgrass management, horticultural science, horticulture communications and public education, public garden management and administration, or planting design and installation.

Kinesiology and Health

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When you enroll in kinesiology and health at Iowa State you will study the physiological and behavioral aspects of physical activity and human movement through disciplines such as biomechanics, exercise physiology, motor control, and exercise psychology.

There are four areas of specialization to choose from: community and public health, exercise science, physical education teacher education (K–12), and pre-health professions. You can also pick up an endorsement to teach health or coach interscholastic athletics. Your education will include exposure to well-equipped human movement labs as well as world-class faculty and staff assisting you with your academic preparation.

These programs prepare you to work as a community health specialist or wellness coach, exercise leader or personal trainer, or a physical education teacher and coach. The pre-health professions specialization will prepare you for entry into graduate school or professional schools such as physical therapy, medical school, or other health care professions.

In addition to your coursework, you will have the opportunity to complete a semester-long field experience within health or fitness facilities, student teach at the elementary and secondary level, gain real-world experience through practicums and volunteer activities, and maybe even study abroad.

Mathematics

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As a mathematics major you may be studying cryptography and coding theory, cellular automata for modeling in the life sciences, graphs and networks with applications to computing, or the mathematics of finance.

Mathematics majors normally spend the first two years obtaining a grounding in calculus and differential equations. At the junior and senior levels the department offers more than 25 undergraduate courses, including an introduction to combinatorics, abstract algebra, partial differential equations, complex variables, and mathematics of fractals. In addition there are other courses at the graduate level which are open to qualified undergraduates.

Mathematicians play a major role in biological research, weather prediction, economics, computer security, finance, design of search engines, and much more. There is also projected to be a great demand for secondary teachers of mathematics in the United States over the next decade.

Microbiology

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Microbiology is the study of living organisms and infectious agents. Microbiologists study the interaction of microorganisms with people, investigating how microbes exist and affect the ecosystem and our lives.

As a microbiology major you will study genetics, chemistry, biochemistry, physiology, physics, ecology, and pathology. With a degree in microbiology you may develop vaccines for infectious diseases, test for infections, conduct research to determine how microorganisms cause disease, harness microbes to recycle waste, improve livestock production, or make food taste better and prevent spoilage.

Your degree will prepare you for professional study in human or veterinary medicine or for a career in clinical, food, industrial, or environmental technologies.

Nutritional Science

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When you major in nutritional science you will look at the connection between diet and health; effects of various nutrients in the cause, treatment, and prevention of many diseases; and maintenance of normal health, growth, and development.

As a nutritional science major you will select either the pre-health professional and research option or the nutrition and wellness option. The pre-health professional and research option will provide a strong science and nutrition education, preparing you for graduate school, research, or professional programs such as medical, pharmaceutical, or dental schools.

The nutrition and wellness option will provide education about the role of nutrition and healthy eating for disease prevention and wellness, preparing you for a career in community nutrition, public health, or related programs.

Philosophy

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Recent advances in technology have introduced many benefits, but also many challenges, into our personal and professional lives. Issues of ethics, problem-solving, logic, and decision-making are critical as we consider the future of our world.

As a philosophy major you will study theories of knowledge and truth, explore views of the world and reality, and examine the cultural and social impact of major philosophical traditions, from ancient Greece to Western civilization. You will discuss ethical issues posed by contemporary culture—issues that pertain to family, law, environment, health care, genetic research, agriculture, business, and other areas.

Faculty work one-on-one with a close-knit group of students, which allows for the development of individualized research projects and partnerships.

A degree in philosophy from Iowa State will prepare you for a career in areas such as business, politics, law, education, writing, and religion.

Physics

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Physics provides a foundation for describing and understanding the universe and all the activities that take place within it.

When you major in physics you join other pioneers in the field who are addressing questions such as: What is the big bang theory? What is the relationship between time and space? Can the world we know be altered by our perceptions?, through a process of scientific analysis, mathematical techniques, and modern computational and technological methods.

Your coursework will include studies in fields such as mechanics, electricity and magnetism, thermodynamics, and modern physics. At Iowa State you also have the unique opportunity to major in physics and focus your studies in astronomy or astrophysics.

A degree in physics will prepare you for continued education in graduate school or for diverse areas of employment including engineering, medicine, law, or business administration.

Political Science

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From the most personal exchanges (families, schools, and clubs) to the most public interactions (local, state, national, and international organizations), politics matters.

As a political science major at Iowa State you will explore these political interactions through a flexible academic curriculum. You will be encouraged to undertake in-depth study in a particular area, such as American government, international relations, public law, political theory, or public policy. Many prelaw students choose to major in political science, focusing on courses related to their future study.

To help you develop the skills and connections necessary for success in this field, the department offers internships with the legislative and executive branches of our government, as well as the United Nations, the Central Intelligence Agency, and the Nature Conservancy.

Religious Studies

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In the spirit of personal interest, intellectual curiosity, and academic excellence, you will explore the nature and role of religion in our culture.

As a religious studies major you will learn how to interpret religion in an empathetic and critical context as you explore and contrast religious traditions and systems. Iowa State's program in religious studies examines a variety of religious traditions through coursework in religious studies, philosophy, literature, history, anthropology, sociology, and ethics.

As a graduate in religious studies you will have the necessary skills to pursue a career in fields such as education, ministry, or social services. A background in religious studies also complements graduate work in anthropology, law, history, sociology, theology, and literature.

Statistics

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Statistics is the science of collection, organization, analysis, and interpretation of data. The principles of statistics apply to a wide variety of professional and scientific fields.

There are many opportunities for students to apply methodology learned in statistics courses to biotechnology research. In courses about design of experiments and survey sampling, students learn how to efficiently collect data. Courses in applied probability modeling include applications in bioinformatics and genomics. Courses in time series analysis and spatial data analysis examine patterns in data related to time and space. Students may wish to combine a major in a biotechnology field with a second major, or minor, in statistics.

Biotechnology

Preparing to do your best while you're in high school

To prepare for a career in biotechnology at Iowa State University, you should focus on science, mathematics, and English while you are in high school. Taking three years of one foreign language in high school, earning advanced placement credits, or taking community college classes can give you a head start on your university studies. Entrance requirements are not the same for all academic departments at Iowa State, so contact the department of your choice for specifics. Try to follow these general recommendations for courses you should take in high school:

Sciences

biology, chemistry, physics

Mathematics

algebra, calculus, geometry, trigonometry

Language arts

English grammar and writing courses, foreign language

Getting to know biotechnology at Iowa State

Iowa State University is a public land-grant institution that has earned a world-class reputation for leadership in the life sciences. Biotechnology has added to that reputation.

Since our biotechnology program was established in 1984, Iowa has invested millions of dollars to keep Iowa State among the leaders in biotechnology education, research, and outreach. That investment is paying off in many research firsts and unique programs. If you want to be among the best in 21st century biotechnology, Iowa State is the place to be. You can read about all of the biotechnology opportunities offered by Iowa State University at www.biotech.iastate.edu.

Honors

The Honors Program provides opportunities for high-achieving students to do their best early in their years at Iowa State. An individualized academic program, priority scheduling for courses, smaller class sizes, independent research projects, and a mentoring relationship with renowned faculty members are benefits for students who qualify.

Internships

Internships and other cooperative education experiences are available to students in many academic departments. In addition to giving you a head start in building on-the-job experience for your future career, these paid positions can help you finance your education.

Learning communities

A course-based learning community is a small group of students with similar academic goals who work and learn together in study groups. Students may take their courses together and have a ready-made set of potential friends. Many undergraduate departments at Iowa State offer students the opportunity to be part of a learning community family.

Study abroad

Students who want to study life sciences in the international arena can choose their special spot in the world.

Earn academic credits while you study in Mexico, the Philippines, China, the Ukraine, Australia, Spain, France, Greece, or many other countries. You'll find many exciting options for both the academic semesters and the summer.

Student organizations

Iowa State has a wide variety of clubs and special interest groups for students. The following activities may be of interest to students in the life sciences:

- Agronomy Club
- American Institute of Chemical Engineers
- Biochemistry, Biophysics, and Molecular Biology Club
- Biological Sciences Club
- Family and Consumer Sciences Education and Studies Club
- Fisheries and Wildlife Biology Club
- Food Science Club
- Forestry Club
- Mathematics Club
- Pre-Medical Club
- Student Chapter of the American Veterinary Medical Association
- Undergraduate Microbiology Club

Honor societies

- Alpha Kappa Delta—Sociology
- Alpha Zeta—Agriculture and Life Sciences
- Beta Beta Beta—Biological Sciences
- Omega Chi Epsilon—Chemical Engineering
- Phi Beta Kappa—Liberal Arts and Sciences
- Phi Upsilon Omicron—Human Sciences
- Pi Mu Epsilon—Mathematics
- Upsilon Pi Epsilon—Computer Science
- Xi Sigma Pi—Forestry

For more information

If you have questions or want more detailed information about Iowa State's biotechnology program, please contact:

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Office of Biotechnology
1210 Molecular Biology Building
Ames, Iowa 50011-3260
Phone: 515 294-9818
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www.biotech.iastate.edu

Iowa State University
Office of Admissions
100 Enrollment Services Center
Ames, Iowa 50011-2011
Phone: 515 294-5836
Toll Free: 800 262-3810
Email: admissions@iastate.edu
Web: www.admissions.iastate.edu

Questions about admission

In addition to writing us at the address at left, we encourage you to visit our website, which features a course catalog, online application, and campus information.

Also, you can follow us on:

Preparing to do your best while in school

The best preparation continues to be a strong college preparatory program of study, which includes courses in English, mathematics, laboratory science, 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.

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