

THE FIELD

Animal science students study the welfare, breeding, development, nutrition, physiology, pathology, management, behavior, and production of domestic and laboratory animals. In addition to providing opportunities to develop skills in animal management and in clinical and laboratory procedures, the program promotes scientific awareness and critical and ethical thinking as well as verbal and written communication. These skills are acquired through laboratory and lecture courses, discovery-based research tutorials with faculty conducting nationally and internationally recognized research, internships in livestock studies programs, and participation in programs at the department's Hadley and Deerfield farm complexes. Extensive facilities provide opportunities for students to work directly with beef and dairy cattle, goats, sheep, poultry, and horses, as well as laboratory animals.

There is no minor available in animal science.

THE MAJOR

This major provides a sound background in the basic sciences to prepare students for a broad range of jobs in agriculture and related biomedical fields. Students declare the animal management concentration, or the animal biotechnology and research concentration, or the equine science concentration when they attend the New Students Orientation.

ANIMAL MANAGEMENT CONCENTRATION

This well-structured and strong curriculum prepares students for careers ranging from both small-scale and large-scale farming of domestic animals to non-domesticated animal management (wildlife, zoo, exotics) to teaching agriculture. Students gain management skills by working with a number of animal species, including Belted Galloway cattle, Boer goats, Dorset sheep, poultry, and horses at our associated farms and dairy cows through a partnership with a local dairy farm. The department emphasizes animal ethics of food animal production as well as the impact of farming techniques on the environment.

ANIMAL BIOTECHNOLOGY AND RESEARCH CONCENTRATION

This concentration prepares students interested in pursuing laboratory or research careers in the fields of veterinary and human health or biotechnology. The curriculum emphasizes research, animal management, and welfare, as well as laboratory courses in biotechnology, immunology, and microbiology. Students have opportunities to work in the laboratories of nationally and internationally recognized scientists studying immunology, reproduction and development, genetics, oncology, and toxicology.

All animal science majors complete basic science core courses including math, biology, chemistry, biochemistry, microbiology, and statistics, as well as animal science courses including anatomy and physiology, welfare, genetics, nutrition, diseases, and reproduction. Students work closely with their academic advisor to develop curricula that meet their career objectives.

EQUINE SCIENCE CONCENTRATION

This concentration prepares students for careers in equine-related industries. Students learn the scientific concepts and practical application of the management, nutrition, veterinary care, breeding, and handling of horses through comprehensive coursework and technical training at the UMass Hadley Farm Equine Center.

Students work alongside equine health and reproductive specialists to learn herd and health management and the breeding industry, including stallion collection, artificial insemination, pregnancy, and foaling. Students also have the opportunity to gain hands-on stable management experience and clinical experience working with our certified faculty in the new Equine Rehabilitation program.

Students interested in admission to the pre-veterinary science major must complete the following predictor courses, most of which are already core requirements, and maintain a grade of B- or better: ANIMLSCI 103, 285, and 220; BIOLOGY 151, 152, and 153; CHEM 111 and 112; CHEM 261; and MATH 127. The major also includes additional laboratory courses in biochemistry, microbiology, and physics, as well as animal science courses including anatomy and physiology, welfare, genetics, nutrition, diseases, and reproduction. Students also select elective courses to enhance specific areas of interest in consultation with their academic advisor and the pre-veterinary advisors.

RESEARCH TUTORIAL, INDEPENDENT STUDY, AND INTERNSHIP/PRACTICUM COURSES

The Department of Veterinary and Animal Sciences encourages students to pursue work outside the conventional lecture or class-associated lab environment and to undertake research projects under the direction of a UMass faculty member or as outside internship experiences. Classes are taken pass/fail or for a letter grade, and range from significant discovery-based research projects ('91C/M courses), independent literature or data review and analysis ('96 courses), or to an internship/practicum experience ('98 courses). NOTE: No more than 18 credits of '98 courses can be applied to the 120 credits required for graduation, and no more than 15 credits of '98 courses can be applied to the 45-credit residence requirement.

HONORS

The department offers a strong honors program in conjunction with Commonwealth Honors College. Honors colloquia have been appended to several courses offered by the department and graduate courses at the 600 level or above and are open to undergraduates as honors courses. Contact the honors coordinator, Kimberly Tremblay, PhD, (kdtrembl@vasci.umass.edu, 413-545-5560) for more information.

STUDY ABROAD

Majors are encouraged to study abroad if it supports their academic and career goals. Students should contact the International Programs Office (413-545-2710, umass.edu/ipo) and work closely with their academic advisor to choose the appropriate courses in preparation.

CAREER OPPORTUNITIES

The animal science major prepares students to enter the biomedical and biotechnology industries as laboratory or animal care technicians. Others become involved with the management of farms, kennels or stables, technical sales and service, care of zoo animals, and vocational education.

THE COLLEGE OF NATURAL SCIENCES

The College of Natural Sciences unites the life, environmental, computational, and physical sciences on campus. Students take advantage of a range of inquiry-based classroom and laboratory experiences, hands-on undergraduate research opportunities, multidisciplinary and cross-departmental education and research initiatives, and a variety of science student organizations. In addition, they are encouraged to develop strong written and oral communication skills as well as leadership and problem-solving abilities.

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