

ANIMAL SCIENCES

Program Information

The Department of Animal Sciences offers the degrees of Master of Science (thesis and non-thesis) and Doctor of Philosophy in Animal Sciences with emphasis in beef or dairy cattle, swine, or equine. Minimum requirements for these degrees are given in the Graduate Degrees (<http://gradcatalog.ufl.edu/graduate/degrees/>) section of this catalog.

The following specializations are available:

- Breeding, genetics and genomics
- Behavior
- Management
- Immunology
- Nutrition (nutritional physiology, nutrient metabolism, and feedstuff utilization)
- Physiology (environmental, lactational, muscle and reproductive)
- Molecular biology (embryology, endocrinology, and genetics)
- Meat science (meat processing, meat quality, muscle biology, and food safety)

A student may work on a problem covering more than one area of study. Animal resources (beef cattle, dairy cattle, horses, swine, sheep, and laboratory animals) are available for use in various research programs. Nutrition, physiology, immunology and meats laboratories are available for detailed chemical and carcass quality evaluations, and excellent computer facilities are available. Special arrangements may be made to conduct research at the various branch agricultural experiment stations throughout Florida.

Departmental and program prerequisites for admission to graduate study include a sound science background, with basic courses in microbiology, biology, mathematics, and chemistry. All courses in the animal sciences program area are acceptable for graduate credit as part of the candidate's major.

The Graduate School restricts graduate students from pursuing minors in academic units that contribute major credit toward their degree program. Therefore, graduate students majoring in Animal Sciences cannot pursue a minor in Food and Resource Economics, Food Science and Human Nutrition, Medicine-Biochemistry, and Veterinary Medical Sciences. In addition, undergraduate credits at the 3000–4000 level in the major of any of these listed academic units are not eligible to count toward degree requirements.

Combined programs: Qualified students are encouraged to apply to the combined degree program. Acceptance into the program will allow both a bachelor's degree and master's degree with a savings of 1 semester.

Degrees Offered

Degrees Offered with a Major in Animal Sciences

- Doctor of Philosophy
 - without a concentration
 - concentration in Animal Molecular and Cellular Biology
- Master of Science
 - without a concentration

Requirements for these degrees are given in the Graduate Degrees (<http://gradcatalog.ufl.edu/graduate/degrees/>) section of this catalog.

Courses

Animal Sciences Departmental Courses

Code	Title	Credits
ANS 5446	Animal Nutrition	3
ANS 5935	Reproductive Biology Seminar and Research Studies	1
ANS 6040	Concepts in Applied Ethology	3
ANS 6288	Experimental Techniques and Analytical Procedures in Meat Research	3
ANS 6312C	Applied Ruminant Reproductive Management	4
ANS 6313	Current Concepts in Reproductive Biology	2
ANS 6379L	Techniques Genetics	2
ANS 6387	Genetic Analysis of Complex Traits in Livestock	3
ANS 6447	Ruminant Nutrition	4
ANS 6449	Vitamins	3
ANS 6452	Principles of Forage Quality Evaluation	3
ANS 6458	Advanced Methods in Nutrition Technology	3
ANS 6636	Meat Technology	3
ANS 6637	Quantitative Microbial Risk Assessment of Pathogens in Food Systems	3
ANS 6702	Physiology of the Mammary Gland and Lactation	2
ANS 6704	Mammalian Endocrinology	2
ANS 6705	Muscle Physiology	1
ANS 6707	Growth Physiology in Farm Animals	1
ANS 6711	Current Topics in Equine Nutrition and Exercise Physiology	2
ANS 6714	Current Topics in Microbial Physiology in Animals	1
ANS 6715	Gastrointestinal and Feed Microbiology	3
ANS 6716	Physiology in Farm Animals	1
ANS 6718	Nutritional Physiology of Domestic Animals	2
ANS 6723	Mineral Nutrition and Metabolism	3
ANS 6750	Reproductive Physiology in Farm Animals	1
ANS 6751	Physiology of Reproduction	3
ANS 6767	Advanced Endocrinology	3
ANS 6775	Essentials of Livestock Immunology	1
ANS 6905	Problems in Animal Science	1-4
ANS 6910	Supervised Research	1-5
ANS 6932	Special Topics in Animal Science	1-3
ANS 6933	Graduate Seminar in Animal Science	1
ANS 6936	Graduate Seminar in Animal Molecular and Cell Biology	1-2
ANS 6939	Animal Molecular and Cellular Biology Journal Colloquy	1
ANS 6940	Supervised Teaching	1-5
ANS 6942	Supervised Extension in the Animal Sciences	1-3
ANS 6971	Research for Master's Thesis	1-15
ANS 7979	Advanced Research	1-12
ANS 7980	Research for Doctoral Dissertation	1-15
PCB 6816	Thermal Physiology	1

Additional Courses for Major Credit in Animal Sciences

Code	Title	Credits
AEB 5326	Agribusiness Financial Management	3
AEB 6385	Management Strategies for Agribusiness Firms	3
AEB 7182	Agricultural Risk Analysis and Decision Making	3
FOS 5205	Current Issues in Food Safety and Sanitation	3
FOS 5225C	Principles in Food Microbiology	4
FOS 5437C	Food Product Development	3
FOS 5732	Current Issues in Food Regulations	3
FOS 5126C	Psychophysical Aspects of Foods	3
FOS 6226C	Advanced Food Microbiology	4
FOS 6315C	Advanced Food Chemistry	4
FOS 6317C	Flavor Chemistry and Technology	3
FOS 6355C	Instrumental Analysis and Separations	5
FOS 6428C	Advanced Food Processing	4
FOS 6455C	Industrial Food Fermentations	3
HUN 5447	Nutrition and Immunity	3
HUN 6245	Advanced Human Nutrition	3
HUN 6301	Nutritional Aspects of Lipid Metabolism	3
HUN 6305	Nutritional Aspects of Carbohydrates	3
HUN 6321	Proteins and Amino Acids in Nutrition	4
VME 5244	Physiology: Organ Systems	4

College of Agricultural and Life Sciences Courses

Code	Title	Credits
ALS 5156	Agricultural Ecology Principles and Applications	3
ALS 5905	Individual Study	1-4
ALS 5932	Special Topics	1-4
ALS 6046	Grant Writing	2
ALS 6166	Exotic Species and Biosecurity Issues	3
ALS 6921	Colloquium on Plant Pests of Regulatory Significance	1
ALS 6925	Integrated Plant Medicine	4
ALS 6931	Plant Medicine Program Seminar	1
ALS 6935	Topics in Biological Invasions	3
ALS 6942	Principles of Plant Pest Risk Assessment and Management	3
ALS 6943	Internship in Plant Pest Risk Assessment and Management	1-10
ANS 6936	Graduate Seminar in Animal Molecular and Cell Biology	1-2
BCH 5045	Graduate Survey of Biochemistry	4
STA 6093	Introduction to Applied Statistics for Agricultural and Life Sciences	3
STA 6329	Matrix Algebra and Statistical Computing	3

Student Learning Outcomes

Animal Sciences (PHD)

SLO 1 Principles of Animal Sciences
Identify, interpret, and discuss the principles of the animal sciences with a deeper mastery of a chosen specialization.

SLO 2 Employ Scientific Methods

Employ scientific methods to critically appraise and devise solutions to problems in the animal sciences

SLO 3 Solve Problems and Generate New Information
Propose and deploy scientific methods to solve problems and generate new information.

SLO 4 Prepare Grants for Funding
Prepare grants for extramural funding during their PhD program.

SLO 5 Professional Behavior
Display ethical conduct and interact with others with honesty, cultural sensitivity, and respect.

SLO 6 Effective Communication
Communicate effectively in professional situations.

Animal sciences (MS)

SLO 1 Principles of Animal Sciences
Identify, interpret, and discuss the principles of the animal sciences with a deeper mastery of a chosen specialization.

SLO 2 Apply Scientific Methods
Apply scientific methods to problems in the animal sciences and develop new solutions to such problems.

SLO 3 Problem Solving Skills
Propose and deploy scientific methods to solve problems and generate new information.

SLO 4 Professional Behavior
Display ethical conduct and interact with others with honesty, cultural sensitivity, and respect.

SLO 5 Communicate Effectively
Communicate effectively in professional situations.