

# ANIMAL SCIENCE

<b>Graduate Program Head</b>	Adele M. Turzillo
<b>Program Code</b>	ANSC
<b>Campus(es)</b>	University Park (Ph.D., M.S., M.P.S.)
<b>Degrees Conferred</b>	Doctor of Philosophy (Ph.D.) Master of Science (M.S.) Master of Professional Studies (M.P.S.)
<b>The Graduate Faculty</b>	View ( <a href="https://secure.gradsch.psu.edu/gpms/?searchType=fac&amp;prog=ANSC">https://secure.gradsch.psu.edu/gpms/?searchType=fac&amp;prog=ANSC</a> )

Animal Science may be defined as the study and integration of all disciplines that relate to the function and care of animals for the benefit of society by providing companionship, food, fiber, performance, and research. Graduate students may specialize in animal management, breeding, genetics and genomics, growth and developmental biology, meat science, nutrition, reproductive biology, and animal health. The department maintains numerous facilities for research involving both small and large animals. Laboratories are equipped with the latest instrumentation. Herds of dairy and beef cattle, sheep, swine, white tail deer, horses, as well as flocks of poultry, including chickens, turkeys, and quail, are maintained for instruction and research.

## Admission Requirements

Applicants apply for admission to the program via the Graduate School application for admission (<https://gradschool.psu.edu/graduate-admissions/how-to-apply/>). Requirements listed here are in addition to Graduate Council policies listed under GCAC-300 Admissions Policies (<https://gradschool.psu.edu/graduate-education-policies/>).

Prerequisite to graduate work is the completion of an undergraduate major in animal science, dairy science, poultry science, or a related biological science.

Although not required, applicants are strongly encouraged to take the Graduate Record Examinations (GRE). Students with a 3.00 junior/senior grade-point average (on a 4.00 scale) and with appropriate course backgrounds will be considered for admission on a competitive basis.

Exceptions to admission requirements may be made for students with special backgrounds, abilities, and interests.

## Degree Requirements

### Master of Professional Studies (M.P.S.)

Requirements listed here are in addition to Graduate Council policies listed under GCAC-700 Professional Degree Policies (<https://gradschool.psu.edu/graduate-education-policies/>).

A minimum of 30 credits at the 400 or 500 level is required, with a minimum of 18 credits at the 500 level, and at least 6 credits in formal (i.e., non-core) courses in animal agriculture/biological science area at the 500 level. In addition, the following Program core courses (credits) are required:

Code	Title	Credits
<b>Required Courses</b>		
ANSC 500	Foundation Readings in Animal Science	1
ANSC 502	Scientific Scholarship (Ethics Offering)	2

ANSC 590	Colloquium	2
ANSC 602	Supervised Experience in College Teaching	1
<b>Culminating Experience</b>		
ANSC 596	Individual Studies (Scholarly Paper)	3

A maximum of 10 credits may be earned in special problem-type courses, which may include up to 3 credits in ANSC 596 for the scholarly paper. The culminating experience for the degree is a scholarly paper completed while the student is enrolled in ANSC 596.

### Master of Science (M.S.)

Requirements listed here are in addition to Graduate Council policies listed under GCAC-600 Research Degree Policies. (<https://gradschool.psu.edu/graduate-education-policies/>)

The academic M.S. program requires a thesis and is designed for those primarily interested in education and research. A minimum of 30 credits at the 400, 500, or 600 level is required, with a minimum of 18 credits at the 500 or 600 level, and at least 12 credits in formal (i.e., non-core) courses in animal agriculture/biological science area with at least 6 of the 12 credits at the 500 level. Students are required to write a thesis, and at least 6 credits in thesis research (ANSC 600 or ANSC 610) must be taken in conjunction with completing the thesis. In addition, the following Program core courses (credits) are required:

Code	Title	Credits
<b>Required Courses</b>		
ANSC 500	Foundation Readings in Animal Science	1
ANSC 502	Scientific Scholarship (Ethics Offering)	2
ANSC 590	Colloquium	2
ANSC 602	Supervised Experience in College Teaching	1
<b>Culminating Experience</b>		
ANSC 600	Thesis Research	6
or ANSC 610	Thesis Research Off Campus	

The thesis must be accepted by the advisers and/or committee members, the head of the graduate program, and the Graduate School, and the student must pass a thesis defense.

### Doctor of Philosophy (Ph.D.)

Requirements listed here are in addition to Graduate Council policies listed under GCAC-600 Research Degree Policies. (<https://gradschool.psu.edu/graduate-education-policies/>)

The academic Ph.D. program requires a dissertation and is designed for those primarily interested in education and research. Official entrance into the Ph.D. program occurs upon successful completion of the qualifying examination. Ph.D. degree requirements include successful completion of the following: approved graduate course work, English Competence requirements, a comprehensive examination, and a final oral examination (the dissertation defense). To earn the Ph.D. degree, doctoral candidates must write a dissertation that is accepted by the Ph.D. committee, the head of the graduate program, and the Graduate School. In addition, the following Program core courses (credits) are required:

Code	Title	Credits
<b>Required Courses</b>		
ANSC 500	Foundation Readings in Animal Science	2

ANSC 502	Scientific Scholarship (both the Ethics offering and the Grantsmanship offering)	4
ANSC 590	Colloquium <sup>1</sup>	3
ANSC 602	Supervised Experience in College Teaching	1

<sup>1</sup> Students who completed 2 credits of ANSC 590 as part of an M.S. degree program in Animal Science must take 1 additional credit of ANSC 590 during their Ph.D. program. For students entering the Ph.D. program with an M.S. degree from another institution, one credit of ANSC 590 will be waived; therefore, they will be required to complete 2 credits of ANSC 590 during their Ph.D. program.

## Minor

A graduate minor is available in any approved graduate major or dual-title program. The default requirements for a graduate minor are stated in Graduate Council policies listed under GCAC-600 Research Degree Policies (<https://gradschool.psu.edu/graduate-education-policies/>) and GCAC-700 Professional Degree Policies (<https://gradschool.psu.edu/graduate-education-policies/>), depending on the type of degree the student is pursuing:

- GCAC-611 Minor - Research Doctorate (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-611-minor-research-doctorate/>)
- GCAC-641 Minor - Research Master's (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-600/gcac-641-minor-research-masters/>)
- GCAC-709 Minor - Professional Doctorate (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-700/gcac-709-professional-doctoral-minor/>)
- GCAC-741 Minor - Professional Master's (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-700/gcac-741-masters-minor-professional/>)

## Student Aid

Graduate assistantships available to students in this program and other forms of student aid are described in the Tuition & Funding (<https://gradschool.psu.edu/graduate-funding/>) section of The Graduate School's website. Students on graduate assistantships must adhere to the course load limits (<https://gradschool.psu.edu/graduate-education-policies/gsad/gsad-900/gsad-901-graduate-assistants/>) set by The Graduate School.

## Courses

Graduate courses carry numbers from 500 to 699 and 800 to 899. Advanced undergraduate courses numbered between 400 and 499 may be used to meet some graduate degree requirements when taken by graduate students. Courses below the 400 level may not. A graduate student may register for or audit these courses in order to make up deficiencies or to fill in gaps in previous education but not to meet requirements for an advanced degree.

Animal Science (ANSC) Course List (<https://bulletins.psu.edu/university-course-descriptions/graduate/ansc/>)

## Learning outcomes Master of Science (M.S.)

1. KNOW. Students will demonstrate appropriate breadth and depth of disciplinary knowledge (e.g., nutrition, physiology, statistics, etc.), a command of the current literature relating to their thesis project, and a thorough understanding of the problems that their research addresses.
2. APPLY/CREATE. Students will apply current knowledge in their field to design animal studies and/or perform laboratory methods or other techniques to address their research problems, while generating and testing new ideas or hypotheses that provide solutions to those problems.
3. COMMUNICATE. Students will effectively communicate their research findings, both in writing, via abstracts and manuscripts, and orally, via seminars and oral or poster presentations, to peers, advisors/mentors, and other scholars and/or stakeholders in their specialty field or beyond their discipline.
4. THINK. Students will be able to conceptualize and critically evaluate the work of others in their field.
5. PROFESSIONAL PRACTICE. Students will be able to identify ethical issues in research, will become familiar with University policies involving the use of animals and human subjects in research, will act ethically and exhibit collegiality with other professionals within or outside of their field, and will engage in service to the profession and to society.

## Doctor of Philosophy (Ph.D.)

1. KNOW. Students will demonstrate appropriate breadth and depth of disciplinary knowledge (e.g., nutrition, physiology, statistics, etc.), a command of the current literature relating to their thesis project, and a thorough understanding of the problems that their research addresses.
2. APPLY/CREATE. Students will apply current knowledge in their field to design animal studies and/or perform laboratory methods or other techniques to address their research problems, while generating and testing new ideas or hypotheses that provide solutions to those problems.
3. COMMUNICATE. Students will effectively communicate their research findings, both in writing, via abstracts and manuscripts, and orally, via seminars and oral or poster presentations, to peers, advisors/mentors, and other scholars and/or stakeholders in their specialty field or beyond their discipline.
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## Contact

<b>Campus</b>	University Park
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<b>Program Website</b>	View ( <a href="http://animalscience.psu.edu/graduateprograms/">http:// animalscience.psu.edu/ graduateprograms/</a> )