Graduates from the Bioinformatics program will be able to integrate basic and applied concepts in the three areas and applied them to biotechnology and medical research.

Admission
Candidates for admission to the M.S. and Ph.D. programs must have a bachelor’s degree from an accredited institution equivalent to those from the University of Illinois at Urbana-Champaign. A grade point average of 3.0 or higher (A = 4.0) for the last two years of undergraduate work and for any graduate study is required for admission. Students must take the Graduate Record Examination (GRE) and are recommended to take the advanced test in biology. English proficiency requirements for admission follow Graduate College requirement. Emphasis is placed on a student’s interest and ability in research as demonstrated by previous work and letters of recommendation. Admission is possible for spring and summer semesters.

For the M.A.N.S.C., application materials include baccalaureate degree transcripts, resume, personal statement, Graduate Record Examination (GRE) general test scores, and three letters of recommendation. One letter of recommendation must be provided by the Animal Sciences faculty member that will advise the student indicating commitment to mentor. A departmental committee will evaluate the applications and recommend admissions.

Graduate Teaching Experience
Experience in teaching is considered a vital part of the graduate program and is encouraged as part of the academic work of students in the M.S. and Ph.D. programs.

for the Master of Science in Animal Sciences in Animal Sciences

For additional details and requirements refer to the department's Graduate Handbook (http://ansci.illinois.edu/grads/degree-requirements/) and the Graduate College Handbook (http://www.grad.illinois.edu/gradhandbook/).

Code Title Hours
ANSC 590 Animal Sciences Seminar 1 2
or ANSC 591 Grad Bioinformatics Seminar

ANSC 440 Applied Statistical Methods 1 3 - 4
or ANSC 445 Statistical Methods
or ANSC 448 Math Modeling in Life Sciences
or ANSC 449 Biological Modeling

Elective 400- or 500-level ANSC courses (excludes ANSC 590, ANSC 591, ANSC 593) 18 to 19

ANSC 593 Res Studies in Animal Sciences 3 8

Total Hours 32

Other Requirements

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<th>Requirement</th>
<th>Hours</th>
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<tr>
<td>Minimum Hours Overall Required Within the Unit:</td>
<td>12</td>
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<tr>
<td>Minimum 500-level Hours Required Overall:</td>
<td>12</td>
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<tr>
<td>Minimum GPA:</td>
<td>3.0</td>
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Research Areas
The Department of Animal Sciences offers graduate work leading to the Master of Animal Sciences, Master of Science, and Doctor of Philosophy degrees. Fields of specialization include:

- animal breeding & genetics
- animal behavior
- biochemistry
- nutrition
- systems of animal management & production
- physiology of lactation & environmental physiology
- meat science & muscle biology
- physiology of reproduction
- immunobiology
- microbiology

Beef and dairy cattle, horses, poultry, sheep, swine, and a variety of companion and laboratory animals are available for study.

The genomic and proteomic projects are generating large amounts of complex biological data that require effective storage, retrieval, analysis and interpretation. The bioinformatics degree program provides students with the skills necessary to augment the understanding and use of agricultural, biological and medical information and resources through the application of molecular, chemical, physical, computational, statistical, mathematical and informatic techniques. Students interested in this program may come with undergraduate training in one of the following areas:

1. biological and agricultural sciences,
2. statistical, mathematical and computer sciences,
3. informatics and engineering sciences.
Equivalent course requires departmental approval.

In consultation with their Animal Sciences faculty advisor, students will select courses that support the individual research studies project and strengthen career opportunities.

The individual research studies project or internship experience and a written report will fulfill the ANSC 593 (Research Studies in Animal Sciences) capstone project requirement. The project or internship and the written product will be supervised by the Animal Sciences faculty mentor and provide evidence that the student can understand and apply the scientific method, interpret scientific information; and effectively communicate scientific information in a field of animal sciences.

ANSC 592 or ANSC 593 Research Studies:

- In consultation with their faculty advisor, students will select courses that support the individual research studies project and strengthen career opportunities. The individual research studies project or internship experience and a written report will fulfill the ANSC 592 (Advanced Topics in Animal Science) or ANSC 593 (Research Studies in Animal Sciences) capstone project requirement. The project or internship and the written product provide evidence that the student:
  
  i) understands and can apply the scientific method;
  
  ii) has the capability to analyze and interpret scientific information; and
  
  iii) can effectively communicate scientific information in a field of animal sciences. The written product will follow the format and style of a peer-reviewed manuscript.