ANIMAL SCIENCES, B.S.

Animal science students focus on the biology of domesticated animals, including cattle, goats, horses, poultry, sheep, swine, as well as meat derived from the traditional meat animal species. Some attention is directed toward the companion animal species, including dogs and cats. The major emphasizes integration of biological principles from the gene to the organ to the herd or flock. Core courses in the major include animal breeding, veterinary genetics, animal physiology, reproductive physiology, comparative animal nutrition, animal health, and meat science. Additional courses include career orientation, animal handling, assessing animal welfare, biology of companion animals, composition of meat animals, human/animal symbiosis, ruminant nutrition, monogastric nutrition, beef cattle production, swine production, equine business, livestock production in agricultural development, and laboratory techniques in mammalian gamete and embryo biology.

The major offers a science track which includes math, physics, organic chemistry and biochemistry for students with interests in postgraduate work in veterinary medicine, animal science, medicine, or other graduate programs. The major also offers a business emphasis which includes economics, accounting, marketing, farm management, commodity markets, agricultural finance, and other courses from the School of Business.

A student majoring in animal sciences is placed in the bachelor of science degree program. Completion of the degree program in four years is the norm.

HOW TO GET IN

To declare this major, students must be admitted to UW–Madison and the College of Agricultural and Life Sciences (CALS). For information about becoming a CALS first-year or transfer student, see Entering the College (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/enteringthecolleetext).

Students who attend Student Orientation, Advising, and Registration (SOAR) with the College of Agricultural and Life Sciences have the option to declare this major at SOAR. Students may otherwise declare after they have begun their undergraduate studies. For more information, contact the advisor listed under the Advising and Careers tab.

REQUIREMENTS

UNIVERSITY GENERAL EDUCATION REQUIREMENTS

All undergraduate students at the University of Wisconsin–Madison are required to fulfill a minimum set of common university general education requirements to ensure that every graduate acquires the essential core of an undergraduate education. This core establishes a foundation for living a productive life, being a citizen of the world, appreciating aesthetic values, and engaging in lifelong learning in a continually changing world. Various schools and colleges will have requirements in addition to the requirements listed below. Consult your advisor for assistance, as needed. For additional information, see the university Undergraduate General Education Requirements (http://guide.wisc.edu/undergraduate/#requirementsforundergraduatestudytex) section of the Guide.

General Education

- Breadth—Humanities/Literature/Arts: 6 credits
- Breadth—Natural Science: 4 to 6 credits, consisting of one 4- or 5-credit course with a laboratory component; or two courses providing a total of 6 credits
- Breadth—Social Studies: 3 credits
- Communication Part A & Part B *
- Ethnic Studies *
- Quantitative Reasoning Part A & Part B *

* The mortarboard symbol appears before the title of any course that fulfills one of the Communication Part A or Part B, Ethnic Studies, or Quantitative Reasoning Part A or Part B requirements.

COLLEGE OF AGRICULTURAL AND LIFE SCIENCES REQUIREMENTS

In addition to the University General Education Requirements, all undergraduate students in CALS must satisfy a set of college and major requirements. Specific requirements for all majors in the college and other information on academic matters can be obtained from the Office of Academic Affairs (http://www.cals.wisc.edu/academics), College of Agricultural and Life Sciences, 116 Agricultural Hall, 1450 Linden Drive, Madison, WI 53706; 608-262-3003. Academic departments and advisors also have information on requirements. Courses may not double count within university requirements (General Education and Breadth) or within college requirements (First-Year Seminar, International Studies and Science), but courses counted toward university requirements may also be used to satisfy a college and/or a major requirement; similarly, courses counted toward college requirements may also be used to satisfy a university and/or a major requirement.

COLLEGE REQUIREMENTS FOR ALL CALS B.S. DEGREE PROGRAMS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality of Work: Students must maintain a minimum cumulative grade point average of 2.000 to remain in good standing and be eligible for graduation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residency: Students must complete 30 degree credits in residence at UW–Madison after earning 86 credits toward their undergraduate degree.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Year Seminar (<a href="http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirementstext">http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirementstext</a>)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>International Studies (<a href="http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirementstext">http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirementstext</a>)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Physical Science Fundamentals</td>
<td>4-5</td>
<td></td>
</tr>
<tr>
<td>CHEM 103 or CHEM 108</td>
<td>General Chemistry I or Chemistry in Our World</td>
<td></td>
</tr>
<tr>
<td>or CHEM 109</td>
<td>Advanced General Chemistry</td>
<td></td>
</tr>
<tr>
<td>Biological Science</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Additional Science (Biological, Physical, or Natural)</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Science Breadth (Biological, Physical, Natural, or Social)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
CALS Capstone Learning Experience: included in the requirements for each CALS major (see "Major Requirements") (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirementstext)

MAJOR REQUIREMENTS

Courses may not double count within the major (unless specifically noted otherwise), but courses counted toward the major requirements may also be used to satisfy a university requirement and/or a college requirement. A minimum of 15 credits must be completed in the major that are not used elsewhere.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mathematics and Statistics</strong></td>
<td></td>
<td>5-6</td>
</tr>
<tr>
<td>Select one of the following (or may be satisfied by placement exam):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 112</td>
<td>Algebra</td>
<td></td>
</tr>
<tr>
<td>&amp; MATH 113</td>
<td>Algebra and Trigonometry</td>
<td></td>
</tr>
<tr>
<td>MATH 114</td>
<td>Algebra and Trigonometry</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3-4</td>
</tr>
<tr>
<td>STAT 301</td>
<td>Introduction to Statistical Methods</td>
<td></td>
</tr>
<tr>
<td>STAT 371</td>
<td>Introductory Applied Statistics for the Life Sciences</td>
<td></td>
</tr>
<tr>
<td>STAT/F&amp;W ECOL/HORT 571</td>
<td>Statistical Methods for Bioscience I</td>
<td></td>
</tr>
<tr>
<td><strong>Chemistry</strong></td>
<td></td>
<td>5-10</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 103</td>
<td>General Chemistry I</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM 104</td>
<td>and General Chemistry II</td>
<td></td>
</tr>
<tr>
<td>CHEM 109</td>
<td>Advanced General Chemistry</td>
<td></td>
</tr>
<tr>
<td>CHEM 115</td>
<td>Chemical Principles I</td>
<td></td>
</tr>
<tr>
<td>&amp; CHEM 116</td>
<td>and Chemical Principles II</td>
<td></td>
</tr>
<tr>
<td><strong>Biology</strong></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOLOGY/BOTANY/ZOOLOGY 151</td>
<td>Introductory Biology</td>
<td></td>
</tr>
<tr>
<td>ZOOLOGY/BIOLOGY/BOTANY 152</td>
<td>Introductory Biology</td>
<td></td>
</tr>
<tr>
<td>Option 2:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ZOOLOGY/BIOLOGY 101</td>
<td>Animal Biology</td>
<td></td>
</tr>
<tr>
<td>ZOOLOGY/BIOLOGY 102</td>
<td>Animal Biology Laboratory</td>
<td></td>
</tr>
<tr>
<td>BOTANY/BIOLOGY 130</td>
<td>General Botany</td>
<td></td>
</tr>
<tr>
<td>Option 3:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOCORE 381</td>
<td>Evolution, Ecology, and Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOCORE 382</td>
<td>Evolution, Ecology, and Genetics Laboratory</td>
<td></td>
</tr>
<tr>
<td>BIOCORE 383</td>
<td>Cellular Biology</td>
<td></td>
</tr>
<tr>
<td>BIOCORE 384</td>
<td>Cellular Biology Laboratory</td>
<td></td>
</tr>
<tr>
<td>GENETICS 466</td>
<td>Principles of Genetics</td>
<td></td>
</tr>
<tr>
<td>Animal Sciences Core</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>AN SCI/DY SCI 101</td>
<td>Introduction to Animal Sciences</td>
<td>4</td>
</tr>
<tr>
<td>AN SCI/FOOD SCI 305</td>
<td>Introduction to Meat Science and Technology</td>
<td>4</td>
</tr>
<tr>
<td>AN SCI/DY SCI/NUTR SCI 311</td>
<td>Comparative Animal Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>AN SCI/DY SCI 320</td>
<td>Animal Health and Disease Management</td>
<td>3</td>
</tr>
<tr>
<td>AN SCI/DY SCI 361</td>
<td>Introduction to Animal and Veterinary Genetics</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AN SCI/DY SCI 362</td>
<td>Veterinary Genetics</td>
<td>2</td>
</tr>
<tr>
<td>AN SCI/DY SCI 363</td>
<td>Principles of Animal Breeding</td>
<td>2</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>AN SCI/DY SCI 373</td>
<td>Animal Physiology</td>
<td></td>
</tr>
<tr>
<td>AN SCI/DY SCI 434</td>
<td>Reproductive Physiology</td>
<td></td>
</tr>
<tr>
<td><strong>Animal Science Depth</strong></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Select 12 credits from animal science depth courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Emphasis</strong></td>
<td></td>
<td>24-25</td>
</tr>
<tr>
<td>Select an emphasis</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Capstone</strong></td>
<td></td>
<td>88-96</td>
</tr>
<tr>
<td>AN SCI 435</td>
<td>Animal Sciences Proseminar</td>
<td>2</td>
</tr>
</tbody>
</table>

1 Science Emphasis students may choose to complete MATH 171 Calculus with Algebra and Trigonometry I and MATH 217 Calculus with Algebra and Trigonometry II in place of MATH 114 Algebra and Trigonometry and MATH 221 Calculus and Analytic Geometry 1.

2 A course cannot be used for credit in both the Core and Depth within major sections.

DEPTH COURSES

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 12 credits from the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AN SCI 220</td>
<td>Growth, Composition and Evaluation of Meat Animals</td>
<td>4</td>
</tr>
<tr>
<td>AN SCI/DY SCI 370</td>
<td>Livestock Production and Health in Agricultural Development</td>
<td>3</td>
</tr>
<tr>
<td>AN SCI/DY SCI 362</td>
<td>Veterinary Genetics</td>
<td>2</td>
</tr>
<tr>
<td>or AN SCI/DY SCI 363</td>
<td>Principles of Animal Breeding</td>
<td></td>
</tr>
<tr>
<td>Select one of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AN SCI/DY SCI 373</td>
<td>Animal Physiology</td>
<td>3</td>
</tr>
<tr>
<td>AN SCI/DY SCI 434</td>
<td>Reproductive Physiology</td>
<td></td>
</tr>
<tr>
<td>AN SCI/DY SCI 414</td>
<td>Ruminant Nutrition</td>
<td>2</td>
</tr>
<tr>
<td>AN SCI 415</td>
<td>Application of Monogastric Nutrition Principles</td>
<td>2</td>
</tr>
<tr>
<td>AN SCI 431</td>
<td>Beef Cattle Production</td>
<td>3</td>
</tr>
<tr>
<td>AN SCI 432</td>
<td>Swine Production</td>
<td>3</td>
</tr>
<tr>
<td>AN SCI 433</td>
<td>Equine Business &amp; Management</td>
<td>3</td>
</tr>
</tbody>
</table>
Animal Sciences, B.S.

**AN SCI/FOOD SCI 515**  
Commercial Meat Processing 2

Up to 3 credits from courses listed below can go toward the required 12 credits of depth:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN SCI 399</td>
<td>Coordinative Internship/Cooperative Education</td>
<td></td>
</tr>
<tr>
<td>AN SCI 681</td>
<td>Senior Honor Thesis</td>
<td></td>
</tr>
<tr>
<td>AN SCI 682</td>
<td>Senior Honors Thesis</td>
<td></td>
</tr>
<tr>
<td>AN SCI 699</td>
<td>Special Problems</td>
<td></td>
</tr>
</tbody>
</table>

1 Meets CALS International Studies requirement.  
2 ANAT & PHY 335 Physiology can substitute for AN SCI/DY SCI 373 Animal Physiology in the An Sci Depth section only.

### EMPHASIS COURSES

#### SCIENCE EMPHASIS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 221</td>
<td>Calculus and Analytic Geometry 1</td>
<td>5</td>
</tr>
<tr>
<td>or MATH 217</td>
<td>Calculus with Algebra and Trigonometry II</td>
<td></td>
</tr>
<tr>
<td>PHYSICS 103</td>
<td>General Physics</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 343</td>
<td>Introductory Organic Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>BIOCHEM 501</td>
<td>Introduction to Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>or BMOLCHEM 503Human Biochemistry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Select 9 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 344</td>
<td>Introductory Organic Chemistry Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 345</td>
<td>Intermediate Organic Chemistry</td>
<td></td>
</tr>
<tr>
<td>MICROBIO 303</td>
<td>Biology of Microorganisms</td>
<td></td>
</tr>
<tr>
<td>MICROBIO 304</td>
<td>Biology of Microorganisms Laboratory</td>
<td></td>
</tr>
<tr>
<td>M M &amp; I/</td>
<td>Immunology</td>
<td></td>
</tr>
<tr>
<td>MICROBIO/PATH-BIO 528</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYSICS 104</td>
<td>General Physics</td>
<td></td>
</tr>
<tr>
<td>PSYCH 449</td>
<td>Animal Behavior</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 24

### BUSINESS EMPHASIS

Up to two courses may be applied to Certificate in Business Mgmt. for Ag. & Life Sciences.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>A A E 215</td>
<td>Introduction to Agricultural and Applied Economics</td>
<td>4</td>
</tr>
<tr>
<td>or ECON 101</td>
<td>Principles of Microeconomics</td>
<td></td>
</tr>
<tr>
<td>A A E 320</td>
<td>Farming Systems Management</td>
<td>3</td>
</tr>
<tr>
<td>A A E 322</td>
<td>Commodity Markets</td>
<td>3</td>
</tr>
</tbody>
</table>

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>M H R 305</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>GEN BUS 310</td>
<td>Fundamentals of Accounting and Finance for Non-Business Majors</td>
<td></td>
</tr>
<tr>
<td>GEN BUS 311</td>
<td>Fundamentals of Management and Marketing for Non-Business Majors</td>
<td></td>
</tr>
</tbody>
</table>

Select one of the following: 3

### BMOLCHEM 314  
Introduction to Human Biochemistry

### CHEM 341  
Elementary Organic Chemistry

### BIOCHEM 501  
Introduction to Biochemistry

Select 9 credits from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>A A E 419</td>
<td>Agricultural Finance</td>
<td></td>
</tr>
<tr>
<td>ACCT I S 100</td>
<td>Introductory Financial Accounting</td>
<td></td>
</tr>
<tr>
<td>or ACCT I S 300</td>
<td>Accounting Principles</td>
<td></td>
</tr>
<tr>
<td>AGRONOMY/ HORT/ SOIL SCI 326</td>
<td>Plant Nutrition Management</td>
<td></td>
</tr>
<tr>
<td>ECON/FINANCE 300</td>
<td>Introduction to Finance</td>
<td></td>
</tr>
<tr>
<td>M H R 300</td>
<td>Managing Organizations</td>
<td></td>
</tr>
<tr>
<td>MARKETING 300</td>
<td>Marketing Management</td>
<td></td>
</tr>
<tr>
<td>MATH 217</td>
<td>Calculus with Algebra and Trigonometry II</td>
<td></td>
</tr>
<tr>
<td>MATH 221</td>
<td>Calculus and Analytic Geometry 1</td>
<td></td>
</tr>
<tr>
<td>MICROBIO 303</td>
<td>Biology of Microorganisms</td>
<td></td>
</tr>
<tr>
<td>MICROBIO 304</td>
<td>Biology of Microorganisms Laboratory</td>
<td></td>
</tr>
<tr>
<td>PHYSICS 103</td>
<td>General Physics</td>
<td></td>
</tr>
<tr>
<td>SOIL SCI 301</td>
<td>General Soil Science</td>
<td></td>
</tr>
</tbody>
</table>

Total Credits 25

1 A A E 215 Introduction to Agricultural and Applied Economics not accepted as a prerequisite for some advanced Business courses. A A E 215 carries only QR-B credit if taken fall 2011 or later.

### HONORS IN THE MAJOR

Admission to the Honors Program is not competitive provided students meet the required admission criteria.

**Admission Criteria for New Freshmen:**

- In the upper 10% of their high school graduating class
- ACT score of 28 or higher
- SAT score of at least 1240

**Admission Criteria for Transfer and Continuing UW-Madison Students:**

- UW-Madison cumulative GPA of at least 3.25

Highly motivated students can apply for admission to the program in the absence of these requirements by including a letter with their application addressed to the Honors Dean in 116 Agricultural Hall explaining why they should be in the program.

### HOW TO APPLY

Apply to the program online (https://cals.wisc.edu/wp-content/uploads/2017/05/honorsapplication_form.pdf) or pick up an application in the Office of Academic Affairs, 116 Agricultural Hall. Applications are accepted at any time.

New freshmen will automatically be enrolled in Honors in Research. It is possible to switch to Honors in the Major in the student’s first semester on campus after meeting with the advisor for that major by completing the application form and selecting Honors in the Major. Transfer and
continuing students may apply directly to Honors in Research or Honors in the Major (after meeting with the major advisor).

**HOW TO CANCEL PARTICIPATION**

Students who are no longer interested in pursuing Honors should complete the form to cancel their participation. Students may cancel their participation at any time, and this will not be noted on the student’s transcript.

**REQUIREMENTS**

To earn Honors in the Major, students are required to take at least 20 honors credits. In addition, students must take AN SCI 681 Senior Honor Thesis and AN SCI 682 Senior Honors Thesis when completing their thesis project; please see the Honors in Major Checklist (http://www.cals.wisc.edu/academics/undergraduate-programs/get-involved/honors-program/honors-in-the-major) for more information.

**UNIVERSITY DEGREE REQUIREMENTS**

Total Degree  To receive a bachelor’s degree from UW–Madison, students must earn a minimum of 120 degree credits. The requirements for some programs may exceed 120 degree credits. Students should consult with their college or department advisor for information on specific credit requirements.

Residency  Degree candidates are required to earn a minimum of 30 credits in residence at UW–Madison. "In residence" means on the UW–Madison campus with an undergraduate degree classification. "In residence" credit also includes UW–Madison courses offered in distance or online formats and credits earned in UW–Madison Study Abroad/Study Away programs.

Quality of Work  Undergraduate students must maintain the minimum grade point average specified by the school, college, or academic program to remain in good academic standing. Students whose academic performance drops below these minimum thresholds will be placed on academic probation.

**LEARNING OUTCOMES**

1. (Knowledge and comprehension) Develop the working vocabulary of an animal scientist, a working knowledge of the basic anatomy, biochemistry, physiology, and genetics of animal and meat biology, and the applied nutrition, breeding, product harvest and processing skills, necessary to manage animal production systems. Demonstrate knowledge through rigorous examination and demonstration through hands-on instructional laboratory activities.

2. (Analytical processing) Develop the ability to reduce complex datasets and scientific information into meaningful relationships and correlations, and using the scientific literature, develop hypotheses to test the cause of predicted relationships using the scientific method. Demonstrate skills through a senior capstone experience and through individualized research opportunities and instructional activities.

3. (Integration for application) Apply knowledge to develop solutions to real world problems. Identify problems yet to be investigated and in need of advanced study. Ability to integrate and apply knowledge is demonstrated through our internship programs, animal related job experiences, club activities, and problem sets that students solve in exams and laboratory settings.

4. (Critical thinking) Find their sources of information using peer reviewed research articles. Learn not only to question popular press, but understand that even in the scientific literature there are contradictory findings. Capacity to synthesize scientific literature such that they can communicate a position backed with strong scientific support. Skills are demonstrated through the reading, writing and discussion of science-based papers in key courses during their educational process and through an oral presentation in their capstone course.

5. (Effective communication) Communicate, both in writing and orally, the science behind the biology and management of domestically farmed animals. Communications provide new insights into animal production, and are explained in a manner fitting with the audience. Ability to communicate is measured by their effectiveness in presenting research posters and presentations, their analysis of the literature in papers and presentations in class and during their senior capstone course.

**FOUR-YEAR PLAN**

**SAMPLE ANIMAL SCIENCES FOUR-YEAR PLAN**

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN SCI/DY SCI 101</td>
<td>4 CHEM 104</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 103</td>
<td>4 Social Science</td>
<td>3-4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATH 114 or 112</td>
<td>3-5 AN SCI Elective</td>
<td>1-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMM-A</td>
<td>3 MATH 113 (or Elective)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-Year Seminar</td>
<td>1 Humanities</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15-17</td>
<td>15-18</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore</th>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZOOLOGY/BIOLOGY/BOTANY 151</td>
<td>5 Emphasis Course</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emphasis Course&lt;sup&gt;2&lt;/sup&gt;</td>
<td>3 Emphasis or Depth Course</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic/International Studies</td>
<td>3 AN SCI/FOOD SCI 305</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emphasis or Depth Course</td>
<td>3-4 ZOOLOGY/BIOLOGY/BOTANY 152</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-15</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior</th>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emphasis Course</td>
<td>3 AN SCI/DY SCI/ NUTR SCI 311</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 371</td>
<td>3 An Sci Depth&lt;sup&gt;3&lt;/sup&gt;</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AN SCI/DY SCI 434</td>
<td>3 AN SCI/DY SCI 320</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GENETICS 466</td>
<td>3 Emphasis Course</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emphasis Course</td>
<td>3 Select one of the following</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AN SCI/DY SCI 361 &amp; AN SCI/DY SCI 362</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AN SCI/DY SCI 361 &amp; AN SCI/DY SCI 363</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Senior**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN SCI 435</td>
<td>2</td>
<td>An Sci Depth 6</td>
</tr>
<tr>
<td>An Sci Depth</td>
<td>3</td>
<td>Independent Study 4 1-3</td>
</tr>
<tr>
<td>Emphasis Course</td>
<td>4</td>
<td>Electives 6</td>
</tr>
<tr>
<td>Humanities</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMM-B</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>Total Credits 118-126</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. If placed into MATH 112, you must defer CHEM 103 until spring semester.
2. Choose Science or Business Emphasis; see Requirements tab for details.
3. 12 credits required; see Requirements tab for options.

**ADVISING AND CAREERS**

All students receive individualized advising from their academic advisor. Students are assigned an academic advisor upon declaration of the major and are expected to meet with their advisor each semester before registering for courses in the upcoming semester. Academic advisors will assist students in developing an individualized, four-year curricular plan. Internships and research experience are encouraged. Numerous graduates have completed double majors with Life Sciences Communication, Genetics, and departments outside of CALS such as Spanish, according to the interests and aspirations of the student. Interested students should contact J. Liv Sandberg (sandberg@ansci.wisc.edu) (608-263-4303) with questions.

Career opportunities exist in the meat, reproductive technology, feed, agribusiness, agri-marketing, and biotechnology industries. Occasionally, students have found positions within zoos. Many students pursue graduate education in veterinary medicine, animal science, medicine, or other programs.

**Recommended Animal Science Electives**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN SCI 110</td>
<td>Animal Handling</td>
<td></td>
</tr>
<tr>
<td>AN SCI 150</td>
<td>Career Orientation Animal/Poultry Sciences</td>
<td></td>
</tr>
<tr>
<td>AN SCI 200</td>
<td>The Biology and Appreciation of Companion Animals</td>
<td></td>
</tr>
<tr>
<td>AN SCI 250</td>
<td>Horse Science and Management</td>
<td></td>
</tr>
<tr>
<td>AN SCI 299</td>
<td>Independent Study</td>
<td></td>
</tr>
<tr>
<td>AN SCI/FOOD SCI 321</td>
<td>Food Laws and Regulations</td>
<td></td>
</tr>
<tr>
<td>AN SCI 375</td>
<td>Special Topics</td>
<td></td>
</tr>
<tr>
<td>AN SCI 400</td>
<td>Study Abroad in Animal Sciences</td>
<td></td>
</tr>
</tbody>
</table>

**PEOPLE**

**PROFESSORS**
Weigel (Interim Chair), Khatib (Associate Vice Chair), Claus, Kirkpatrick, Parrish, Reed, Richards, Rosa, Schaefer

**ASSOCIATE PROFESSOR**
Sindelar

**ASSISTANT PROFESSOR**
Shanmuganayagam

**WISCONSIN EXPERIENCE**

Undergraduates majoring in animal sciences at UW–Madison will find an inclusive, welcoming community where professors know their students and are able to provide guidance based on students’ specific academic and career goals. There are numerous opportunities to conduct research with faculty and to take part in the Wisconsin Idea, whereby faculty and students extend the knowledge developed at the university to stakeholders in Wisconsin and beyond for the betterment of society.

Students majoring in animal sciences are involved in a wide variety of opportunities across campus. Students are highly encouraged to complement their coursework with out-of-classroom experiences such as clubs, research, volunteering, internships, and study abroad.

By joining one of the several clubs listed below, majors get to know their fellow students outside the classroom. The following opportunities can help students connect with other students interested in animal sciences and other biological science majors, build relationships with faculty and staff, and contribute to out-of-classroom learning.

- Pre Vet Club (https://prevetassociation.weebly.com)
- Poultry Club (https://win.wisc.edu/organization/poultryclub)
- Badger Meat Science Club (https://win.wisc.edu/organization/badgermeatscienceclub)
- Saddle and Sirloin Club (https://win.wisc.edu/organization/saddleandsirloin)
- Hoofer Riding Club (https://win.wisc.edu/organization/hooferringidingclub)
- Badger Dairy Club (https://win.wisc.edu/organization/badgerdairyclub)
- Collegiate FFA (http://collegiateffamadison.weebly.com)
- Association of Women in Agriculture (http://awamadison.org)
- Meat Lab/Bucky’s Butchery! Interested in meat science? The meat-processing facilities within the animal sciences department apply many food science principles and provide a unique opportunity for students to get hands-on experience with all aspects of meat production.
- Study Abroad: Animal science majors have the opportunity to go on experiential study abroad programs, where they can immerse themselves in research or global, animal field experiences. Students can review the International Academic Programs website (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/animal-sciences/animal-sciences-bs%20https://www.studyabroad.wisc.edu) and the CALS study abroad advising (https://cals.wisc.edu/academics/CALS-study-abroad/advising)
international-programs/study-abroad-advising) for information on these and other programs, as well as requirements that can typically be fulfilled abroad and things to consider when fitting study abroad into an academic plan.

- Research/Lab Experience: Students are encouraged to get involved in research, whether in the animal sciences department or through other biology-related departments. Research can be performed for either course credit or pay, depending on the opportunity. Research opportunities can be found primarily by contacting faculty members.

Students are also involved in prehealth organizations, volunteer and shadowing opportunities, publishing in an undergraduate science journal, biotechnology and agricultural internships, and other related experiences on and off campus.