ANIMAL SCIENCES, B.S.

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/#requirementsforundergraduatestudytext) section of the Guide.

General Education

- Breath—Humanities/Literature/Arts: 6 credits
- Breath—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
- Breath—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. Courses may not double count within university requirements (General Education and Breadth) or within college requirements (First-Year Seminar, International Studies, Science, and Capstone), 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

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.

Residency: Students must complete 30 degree credits in residence at UW-Madison after earning 86 credits toward their undergraduate degree.

First Year Seminar (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSFirstYearSeminarCourses) 1
International Studies (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSInternationalStudiesCourses) 3
Physical Science Fundamentals 4-5
CHEM 103 General Chemistry I or CHEM 108 Chemistry in Our World or CHEM 109 Advanced General Chemistry
Biological Science 5
Additional Science (Biological, Physical, or Natural) 3
Science Breadth (Biological, Physical, Natural, or Social) 3
CALS Capstone Learning Experience: included in the requirements for each CALS major (see "Major Requirements") (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSCapstoneRequirement)

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.

Code | Title | Credits
--- | --- | ---
Mathematics and Statistics
Select one of the following (or may be satisfied by placement exam): 1 5-6
MATH 112 Algebra & MATH 113 Algebra and Trigonometry
MATH 114 Algebra and Trigonometry
Select one of the following: 3-4
STAT 301 Introduction to Statistical Methods
STAT 371 Introductory Applied Statistics for the Life Sciences
Chemistry
Select one of the following: 5-10
CHEM 103 & CHEM 104 General Chemistry I and General Chemistry II
CHEM 109 Advanced General Chemistry
Biology
Select one of the following: 13
Option 1:
BIOLOGY/BOTANY/ZOOLOGY 151 Introductory Biology
ZOOLOGY/BIOLOGY/BOTANY 152 Introductory Biology
Option 2:
ZOOLOGY/BIOLOGY 101 Animal Biology
ZOOLOGY/BIOLOGY 102 Animal Biology Laboratory
Animal Sciences, B.S.

**Botany/Biology 130**  General Botany

**Option 3:**
- BIOCORE 381 Evolution, Ecology, and Genetics
- BIOCORE 382 Evolution, Ecology, and Genetics Laboratory
- BIOCORE 383 Cellular Biology
- BIOCORE 384 Cellular Biology Laboratory

**Genetics**
- GENETICS 466 Principles of Genetics 3

**Animal Sciences Core**
- AN SCI/DY SCI 101 Introduction to Animal Sciences 3
- AN SCI/DY SCI 102 Introduction to Animal Sciences Laboratory 1
- AN SCI/DY SCI 305 Introduction to Meat Science and Technology 4
- AN SCI/DY SCI/ NUTR SCI 311 Comparative Animal Nutrition 3
- AN SCI/DY SCI 320 Animal Health and Disease 3
- AN SCI/DY SCI 361 Introduction to Animal and Veterinary Genetics 2
- AN SCI/DY SCI 362 Veterinary Genetics 2
- AN SCI/DY SCI 373 Animal Physiology 3
- AN SCI/DY SCI 374 Principles of Animal Breeding 2

**Animal Science Depth**
Select 12 credits from animal science depth courses 2

**Emphasis**
Select an emphasis 24-25

**Capstone**
- AN SCI 435 Animal Sciences Proseminar 2

**Total Credits** 88-96

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 I.

**MEETS CALS International Studies requirement.**

**Depth Courses**

**Select 12 credits from the following:**
- AN SCI/DY SCI 370 Livestock Production and Health in Agricultural Development 1 3
- AN SCI/DY SCI 373 Animal Physiology 3
- AN SCI/DY SCI 434 Reproductive Physiology
- AN SCI/DY SCI 414 Ruminant Nutrition & Metabolism 3
- AN SCI 415 Application of Monogastric Nutrition Principles 2
- AN SCI 431 Beef Cattle Production 3
- AN SCI 432 Swine Production 3
- DY SCI/ AGRONOMY 471 Food Production Systems and Sustainability 3
- AN SCI/DY SCI/ FOOD SCI/ SOIL SCI 472 Animal Agriculture and Global Sustainable Development 1
- AN SCI/DY SCI/ FOOD SCI/ SOIL SCI 473 International Field Study in Animal Agriculture and Sustainable Development 2
- AN SCI/DY SCI 515 Commercial Meat Processing 2

Up to 3 credits from courses listed below can go toward the required 12 credits of depth:
- AN SCI 399 Coordinative Internship/Cooperative Education
- AN SCI 681 Senior Honor Thesis
- AN SCI 682 Senior Honors Thesis
- AN SCI 699 Special Problems

**Science Emphasis**

**Code**  | **Title**  | **Credits**
--- | --- | ---
MATH 221 | Calculus and Analytic Geometry I | 5
or MATH 217 | Calculus with Algebra and Trigonometry II | 5
PHYSICS 103 | General Physics | 4
CHEM 343 | Organic Chemistry I | 3
BIOCHEM 501 | Introduction to Biochemistry | 3
or BMOLCHEM 50 | | 3

Select 9 credits from the following:

- CHEM 344 Introductory Organic Chemistry Laboratory
- CHEM 345 Organic Chemistry II
- MICROBIO 303 Biology of Microorganisms
- MICROBIO 304 Biology of Microorganisms Laboratory
- M M & I 341 Immunology
- M M & I/PATH-BIO 528 Immunology
- PHYSICS 104 General Physics
- PSYCH 449 Animal Behavior

**Total Credits** 24
BUSINESS EMPHASIS
Up to two courses may be applied to Certificate in Business Mgmt. for Ag. & Life Sciences.

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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>A E 215</td>
<td>Introduction to Agricultural and Applied Economics</td>
<td>4</td>
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<tr>
<td>or ECON 101</td>
<td>Principles of Microeconomics</td>
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<td>A E 320</td>
<td>Agricultural Systems Management</td>
<td>3</td>
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<tr>
<td>A E 322</td>
<td>Commodity Markets</td>
<td>4</td>
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<td>Select one of the following:</td>
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<tr>
<td>M H R 305</td>
<td>Human Resource Management</td>
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<td>GEN BUS 310</td>
<td>Fundamentals of Accounting and Finance for Non-Business Majors</td>
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<tr>
<td>GEN BUS 311</td>
<td>Fundamentals of Management and Marketing for Non-Business Majors</td>
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<td>Select one of the following:</td>
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<td>BIOCHEM 301</td>
<td>Survey of Biochemistry</td>
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<td>CHEM 341</td>
<td>Elementary Organic Chemistry</td>
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<td>BIOCHEM 501</td>
<td>Introduction to Biochemistry</td>
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<tr>
<td>Select 9 credits from the following:</td>
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<td>9</td>
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<td>A E 419</td>
<td>Agricultural Finance</td>
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<td>ACCT I S 100</td>
<td>Introductory Financial Accounting</td>
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<tr>
<td>or ACCT I S 300</td>
<td>Accounting Principles</td>
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<tr>
<td>AGRONOMY/HORT/SOIL SCI</td>
<td>Plant Nutrition Management</td>
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<tr>
<td>ECON/FINANCE 300</td>
<td>Introduction to Finance</td>
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<tr>
<td>M H R 300</td>
<td>Managing Organizations</td>
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<tr>
<td>MARKETNG 300</td>
<td>Marketing Management</td>
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<tr>
<td>MATH 217</td>
<td>Calculus with Algebra and Trigonometry II</td>
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<tr>
<td>or MATH 221</td>
<td>Calculus and Analytic Geometry I</td>
<td></td>
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<tr>
<td>MICROBIO 303</td>
<td>Biology of Microorganisms</td>
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<tr>
<td>MICROBIO 304</td>
<td>Biology of Microorganisms Laboratory</td>
<td></td>
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<tr>
<td>PHYSICS 103</td>
<td>General Physics</td>
<td></td>
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<tr>
<td>SOIL SCI 301</td>
<td>General Soil Science</td>
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Total Credits 26

A E 215 Introduction to Agricultural and Applied Economics not accepted as a prerequisite for some advanced Business courses.

HONORS IN THE MAJOR
Students admitted to the university and to the College of Agricultural and Life Sciences are invited to apply to be considered for admission to the CALS Honors Program.

Admission Criteria for New First-Year Students:
- Complete program application including essay questions

Admission Criteria for Transfer and Continuing UW–Madison Students:
- UW–Madison cumulative GPA of at least 3.25
- Complete program application including essay questions

HOW TO APPLY
The application is available on the CALS Honors Program website (https://cals.wisc.edu/academics/undergraduate/current-students/honors-program/). Applications are accepted at any time.

New first-year students with accepted applications 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 receiving approval from the advisor for that major. Transfer and continuing students may apply directly to Honors in Research or Honors in the Major (after approval from the major advisor).

REQUIREMENTS
All CALS Honors programs have the following requirements:
- Earn at least a cumulative 3.25 GPA at UW–Madison (some programs have higher requirements)
- Complete the program-specific requirements listed below
- Submit completed thesis documentation to CALS Academic Affairs

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.