

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	• 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. 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

Code	Title	Credits
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/#CALSThirdYearSeminarCourses)	1
International Studies (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#CALSIInternationalStudiesCourses)	3
Physical Science Fundamentals	4-5
CHEM 103 or CHEM 108 or CHEM 109	General Chemistry I Chemistry in Our World 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 & 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	

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 Core²		
AN SCI/DY SCI 101	Introduction to Animal Sciences	3
AN SCI/DY SCI 102	Introduction to Animal Sciences Laboratory	1
AN SCI/FOOD 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
or AN SCI/ DY SCI 363	Principles of Animal Breeding	
AN SCI/DY SCI 373	Animal Physiology	3
or AN SCI/ DY SCI 434	Reproductive Physiology	
Animal Science Depth		
Select 12 credits from animal science depth courses ²		12
Emphasis		
Select an emphasis		24-25
Capstone		
AN SCI 435	Animal Sciences Proseminar	2
Total Credits		88-96

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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.

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

DEPTH COURSES

Code	Title	Credits
Select 12 credits from the following:		
AN SCI/ FOOD SCI 321	Food Laws and Regulations	1
AN SCI 336	Animal Growth and Development	3
AN SCI/DY SCI 362	Veterinary Genetics	2
or AN SCI/DY SCI 363	Principles of Animal Breeding	
AN SCI 366	Concepts in Genomics	3

AN SCI/DY SCI 370	Livestock Production and Health in Agricultural Development ¹	3
AN SCI/DY SCI 373	Animal Physiology	3
or 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/FOOD SCI 515	Commercial Meat Processing	2
Up to 3 credits from courses listed below can go toward the required 12 credits of depth:		3
AN SCI 399	Coordinative Internship/ Cooperative Education	
AN SCI 681	Senior Honor Thesis	
AN SCI 682	Senior Honors Thesis	
AN SCI 699	Special Problems	

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Meets CALS International Studies requirement.

EMPHASIS COURSES SCIENCE EMPHASIS

Code	Title	Credits
MATH 221	Calculus and Analytic Geometry 1	5
or MATH 217	Calculus with Algebra and Trigonometry II	
PHYSICS 103	General Physics	4
CHEM 343	Organic Chemistry I	3
BIOCHEM 501	Introduction to Biochemistry	3
Select 9 credits from the following:		9
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.

Code	Title	Credits
A A E 215	Introduction to Agricultural and Applied Economics ¹	4
or ECON 101	Principles of Microeconomics	
A A E 320	Agricultural Systems Management	3
A A E 322	Commodity Markets	4
Select one of the following:		3
M H R 305	Human Resource Management	
GEN BUS 310	Fundamentals of Accounting and Finance for Non-Business Majors	
GEN BUS 311	Fundamentals of Management and Marketing for Non-Business Majors	
Select one of the following:		3
BIOCHEM 301	Survey of Biochemistry	
CHEM 341	Elementary Organic Chemistry	
BIOCHEM 501	Introduction to Biochemistry	
Select 9 credits from the following:		9
A A E 419	Agricultural Finance	
ACCT I S 100	Introductory Financial Accounting	
or ACCT I S 300	Accounting Principles	
AGRONOMY/ HORT/SOIL SCI 326	Plant Nutrition Management	
ECON/FINANCE 300	Introduction to Finance	
M H R 300	Managing Organizations	
MARKETNG 300	Marketing Management	
MATH 217	Calculus with Algebra and Trigonometry II	
or MATH 221	Calculus and Analytic Geometry I	
MICROBIO 303	Biology of Microorganisms	
MICROBIO 304	Biology of Microorganisms Laboratory	
PHYSICS 103	General Physics	
SOIL SCI 301	General Soil Science	
Total Credits		26

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A 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.