FOOD SCIENCE, 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 section of the Guide.

- 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>103</td>
<td>General Chemistry I</td>
<td>4-5</td>
</tr>
<tr>
<td>108</td>
<td>Chemistry in Our World</td>
<td></td>
</tr>
<tr>
<td>109</td>
<td>Advanced General Chemistry</td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>General Chemistry I</td>
<td>5</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

NUTR SCI/A A E/AGRONOMY 350 World Hunger and Malnutrition is recommended to fulfill the CALS International Studies requirement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>217</td>
<td>Calculus with Algebra and Trigonometry II</td>
<td>5</td>
</tr>
<tr>
<td>221</td>
<td>Calculus and Analytic Geometry</td>
<td>3</td>
</tr>
<tr>
<td>301</td>
<td>Introduction to Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>371</td>
<td>Introductory Applied Statistics for the Life Sciences</td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>General Chemistry I</td>
<td>5-9</td>
</tr>
<tr>
<td>&amp; 104</td>
<td>General Chemistry II</td>
<td></td>
</tr>
<tr>
<td>109</td>
<td>Advanced General Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>343</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>344</td>
<td>Introductory Organic Chemistry Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>345</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>201</td>
<td>General Physics</td>
<td>4-5</td>
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<tr>
<td>207</td>
<td>General Physics</td>
<td></td>
</tr>
<tr>
<td>215</td>
<td>Introduction to Agricultural and Applied Economics</td>
<td>16-18</td>
</tr>
<tr>
<td>323</td>
<td>Cooperatives and Alternative Forms of Enterprise Ownership</td>
<td></td>
</tr>
</tbody>
</table>

International Studies (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirementstext)

Physical Science Fundamentals

Biochem/Botany/Microbio/Zoology (Path 1)

Biocore (Path 2)

Econ or Ag & Applied Econ

Foundation

First Year Seminar (http://guide.wisc.edu/undergraduate/agricultural-life-sciences/#requirementstext)
ECON 101 Principles of Microeconomics
ECON 111 Principles of Economics-Accelerated Treatment

Nutritional Science
NUTR SCI/BIOCHEM 510 Nutritional Biochemistry and Metabolism 3
or NUTR SCI 332 Human Nutritional Needs

Core
FOOD SCI 301 Introduction to the Science and Technology of Food 3
AN SCI/FOOD SCI 321 Food Laws and Regulations 1
FOOD SCI/MICROBIO 324 Food Microbiology Laboratory 2
FOOD SCI/MICROBIO 325 Food Microbiology 3
FOOD SCI 410 Food Chemistry 3
FOOD SCI 412 Food Analysis 4
FOOD SCI 432 Principles of Food Preservation 3
FOOD SCI 440 Principles of Food Engineering 3
FOOD SCI 514 Integrated Food Functionality 4
FOOD SCI 532 Integrated Food Manufacturing 4

Integrated Food Product Elective
Select one of the following (2 credits minimum): 2
FOOD SCI 511 Chemistry and Technology of Dairy Products
FOOD SCI/AN SCI 515 Commercial Meat Processing
FOOD SCI 535 Confectionery Science and Technology
FOOD SCI 550 & FOOD SCI 551 Fermented Foods and Beverages and Food Fermentation Laboratory
FOOD SCI 550 & FOOD SCI 552 Fermented Foods and Beverages and Food Fermentation Laboratory: The Science of Wine

Science Elective
Any 400-level or above course with Physical Science designation 3

Capstone
FOOD SCI 602 Senior Project 2
FOOD SCI 603 Senior Seminar 1

Total Credits 85-92

BIOLOGY PATHS
BIOCHEM/BOTANY/MICROBIO/ZOOLOGY (PATH 1)

BIOLOGY/BOTANY/ZOOLOGY 151 Introductory Biology 5

Select one of the following: 3-5
Any 400-level or above course with Biological Science designation

BIOLOGY/BOTANY/ZOOLOGY 152 Introductory Biology
MICROBIO 101 General Microbiology 3
or MICROBIO 303 Biology of Microorganisms
MICROBIO 102 General Microbiology Laboratory 2
or MICROBIO 304 Biology of Microorganisms Laboratory
BIODEP 501 Introduction to Biochemistry 3

Total Credits 16-18

BIOCORE (PATH 2)

Code | Title | Credits
-----|------|-----
BIOCORE 381 Evolution, Ecology, and Genetics 3
BIOCORE 383 Cellular Biology 3
BIOCORE 485 Principles of Physiology 3
BIOCORE 587 Biological Interactions 3

Select two of the following: 4

BIOCORE 382 Evolution, Ecology, and Genetics Laboratory
BIOCORE 384 Cellular Biology Laboratory
BIOCORE 486 Principles of Physiology Laboratory

Total Credits 16

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-students/outside-the-classroom/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

1 MATH 217 Calculus with Algebra and Trigonometry II requires MATH 171 Calculus with Algebra and Trigonometry I as a prerequisite.
**REQUIREMENTS**

To earn Honors in the Major, students are required to take at least 20 honors credits. In addition, students must take FOOD SCI 681 Senior Honors Thesis and FOOD 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. |