# FOOD SCIENCE, BS

## REQUIREMENTS

## UNIVERSITY REQUIREMENTS

All undergraduate students must complete both the following Core General Education (Core GenEd) and University Degree and Quality of Work requirements. The requirements below apply to students whose first term at UW-Madison or whose earliest post-high school college attendance at any institution is Summer 2026 or later.

Students whose first term at UW-Madison or whose earliest post-high school college attendance at any institution occurred before Summer 2026 should refer to the archived Guide (https://guide.wisc.edu/archive/) for the requirements that apply to them.

### CORE GENERAL EDUCATION (CORE GENED) REQUIREMENTS

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| Civics & Perspectives | 3 credits of Civics & Perspectives coursework. |
| Communicatio & Literacy | 6 credits of Communication & Literacy coursework. This requirement may be partially satisfied by a qualifying placement test score. More information: https://go.wisc.edu/qualifyingenglishplacement (https://go.wisc.edu/qualifyingenglishplacement/) |
| Humanities & Arts | 6 credits of Humanities & Arts coursework. |
| Mathematics & Quantitative Reasoning | 6 credits of Mathematics & Quantitative Reasoning coursework. This requirement may be partially satisfied by a qualifying placement test score. More information: https://go.wisc.edu/qualifyingmathplacement (https://go.wisc.edu/qualifyingmathplacement/) |
| Natural Science & Wellness | Complete both:<br>• 6 credits of Natural Science & Wellness or Natural Science & Wellness + Laboratory coursework.<br>• one course must be in Natural Science & Wellness + Laboratory coursework. |
| Social & Behavioral Science | 3 credits of Social & Behavioral Science coursework. |
| Total Credits | 30 credits. |

For more information see the policy (https://policy.wisc.edu/library/UW-1095/).

### UNIVERSITY DEGREE AND QUALITY OF WORK REQUIREMENTS

All undergraduate degree recipients must complete the following minimum requirements. Requirements for some programs will exceed these requirements; see program requirements for additional information.

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| Total Degree | 120 degree credits. |
| Residency | Complete 30 credits in residence. A course is considered "in residence" if it is taken when in undergraduate degree-seeking status and:<br>• is offered by UW-Madison and completed on the UW-Madison campus or at an approved off-site location, or<br>• is offered by UW-Madison in an online or distance format, or is completed during participation in a UW-Madison study abroad/study away program. |
| Quality of Work | Achieve at least the minimum grade point average specified by the school, college, and/or academic program. |
| Math | Demonstrate minimal mathematics competence by:<br>• placing above MATH 96, or,<br>• successfully completing MATH 96, or<br>• successfully completing a more advanced mathematics course such as MATH 112, MATH 113, MATH 114, MATH 141, MATH 211, or MATH 221. |
| English Language | If required to take the UW-Madison English as a Second Language Assessment Test (MSN-ESLAT), demonstrate minimal English language competence by:<br>• earning credit for ESL 118, or<br>• achieving a qualifying MSN-ESLAT placement test score. |
| Language | Complete one:<br>• 2 high school units of a single language other than English, or<br>• one course with the second semester Language designation. |
| Major Declaration | Declare and complete the requirements for at least one major. |

## COLLEGE OF AGRICULTURAL AND LIFE SCIENCES REQUIREMENTS

### CALS GRADUATION REQUIREMENTS

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| Cumulative Credits | • Students must earn 120 degree credits.<br>• Students declared in Biological Systems Engineering BS must earn 125 degree 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. |

In addition to the university's general requirements, all undergraduate students in CALS must satisfy a set of college and major requirements. Courses may not double count within university requirements, CALS college requirements, or major requirements. A course may count toward university requirements and a college and/or a major requirement; similarly, a course counted toward college requirements may also be used to satisfy a university and/or a major requirement.

## CALS COLLEGE REQUIREMENTS

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| CALS First-Year Seminar | 1 credit. See the full list of eligible courses below or use this link: https://go.wisc.edu/calsfirstyearseminars (https://go.wisc.edu/calsfirstyearseminars/) |
| Ethnic Studies | 3 credits with the Ethnic Studies designation. |
| Communication A | Complete either:<br>• 1 course with the Communication A designation, or<br>• satisfaction of Communication A based on UW Placement Test. |
| Quantitative Reasoning A | Complete either:<br>• 1 course with the Quantitative Reasoning A designation, or<br>• satisfaction of Quantitative Reasoning A based on UW Placement Test. |
| Introductory Chemistry | Complete one:<br>• CHEM 103<br>• CHEM 108<br>• CHEM 109 |
| CALS International Comparisons | 3 credits. See the full list of eligible courses below or use this link: https://go.wisc.edu/calsinternationalcomparisons (https://go.wisc.edu/calsinternationalcomparisons/) |
| Communication B | 1 course with the Communication B designation. |
| Quantitative Reasoning B | 1 course with the Quantitative Reasoning B designation. |
| Biological Science | 5 credits with the Biological Science designation. |
| Additional Science | 3 credits with the Biological, Physical, or Natural Science designations. |
| Science Breadth | 3 credits with the Biological, Physical, Natural, or Social Science designations. |
| Humanities | 6 credits with the Humanities or Literature designation. |
| Social Sciences | 3 credits with the Social Sciences designation. |
| Capstone Learning Experience | Each major articulates the required capstone learning experience. |

### CALS First-Year Seminars

| Code | Title | Credits |
|---|---|---|
| AN SCI 135 | Grand Challenges and Career Opportunities in Animal and Dairy Sciences | 1 |
| BIOCHEM 100 | Biochemistry First-Year Seminar | 1 |
| COUN PSY 125 | The Wisconsin Experience Seminar | 1 |
| F&W ECOL 101 | Orientation to Wildlife Ecology | 1 |
| F&W ECOL 105 | Environment, Pollutants, and You | 3 |
| GENETICS 155 | Freshman Seminar in Genetics | 1 |
| INTEGSCI 100 | Exploring Biology | 2 |
| INTEGSCI 140 | Exploring Service in STEM | 1 |
| INTER-AG 155 | Issues in Agriculture, Environment, and Life Sciences | 1 |
| LSC 155 | First-Year Seminar in Science Communication | 1 |
| MICROBIO 150 | Microbiomes and Microbiology - First-Year Seminar | 1 |
| PLANTSCI/ AGROECOL 100 | First-Year Seminar in Agroecology and Plant Science | 1 |
| PL PATH 155 | Food Frontlines: Security, Sustainability, and Survival | 1 |
| SOIL SCI 155 | First-year Seminar in Soil and Environmental Sciences | 1 |
| **Learning Community/Student Group Courses** | | |
| The following learning community/student group courses are approved as CALS First-Year Seminars. | | |
| COUN PSY 117 | PEOPLE First Year Seminar | 1 |
| INTEGSCI 110 | BioHouse Seminar: Biology for the 21st Century | 1 |
| INTER-AG 117 | GreenHouse Roots Seminar | 1 |
| INTER-AG 140 | CALS QuickStart: Foundations | 1 |
| INTER-AG 175 | WISE Seminar | 1 |

### CALS International Comparisons

| Code | Title | Credits |
|---|---|---|
| The 3 credit requirement may be fulfilled as either a stand-alone 3 credit course or as a set of courses as listed below. | | |
| A A E/ENVIR ST 244 | The Environment and the Global Economy | 4 |
| A A E 319 | The International Agricultural Economy | 3 |
| A A E/ NUTR SCI 350 | World Hunger and Malnutrition | 3 |
| A A E 352 | Global Health: Economics, Natural Systems, and Policy (approved for enrollments Summer 2021 and later) | 4 |
| A A E/INTL ST 373 | Globalization, Poverty and Development | 3 |
| A A E/INTL ST 374 | The Growth and Development of Nations in the Global Economy | 3 |
| A A E/ECON 473 | Economic Growth and Development in Southeast Asia | 3 |
| A A E/ECON 474 | Economic Problems of Developing Areas | 3 |
| A A E/ECON/ INTL BUS 462 | Latin American Economic Development | 3 |
| A A E/ECON 477 | Agricultural and Economic Development in Africa | 3 |
| AGROECOL 377 | Global Food Production and Health | 3 |
| AN SCI/DY SCI 370 | Livestock Production and Health in Agricultural Development | 3 |
| ASIAN/HISTORY/ POLI SCI 255 | Introduction to East Asian Civilizations (approved for enrollments Summer 2021 and later) | 3-4 |
| C&E SOC/SOC 341 | Labor in Global Food Systems (approved for enrollments Summer 2020 and later) | 3 |
| C&E SOC/ENVIR ST/ SOC 540 | Sociology of International Development, Environment, and Sustainability | 3 |

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|---|---|---|
| CSCS 500 | Global Health and Communities: From Research to Praxis | 3 |
| DY SCI 471 | Food Production Systems and Sustainability | 3 |
| ENTOM/ ENVIR ST 201 | Insects and Human Culture-a Survey Course in Entomology | 3 |
| ENTOM/ ENVIR ST 205 | Our Planet, Our Health (approved for enrollments Fall 2026 and later) | 3 |
| ENTOM/ ZOOLOGY 371 | Medical Entomology: Biology of Vector and Vector-borne Diseases | 3 |
| F&W ECOL/ ENVIR ST 100 | Forests of the World (approved for enrollments Summer 2020 and later) | 3 |
| F&W ECOL/ ENVIR ST/ ZOOLOGY 360 | Extinction of Species | 3 |
| LSC 251 | Science, Media and Society (approved for enrollments Summer 2020 and later) | 3 |
| PL PATH/ BOTANY 123 | Plants, Parasites, and People | 3 |
| PL PATH 311 | Global Food Security | 3 |
| PLANTSCI 370 | World Vegetable Crops | 3 |
| The following study abroad courses fulfill the CALS International Comparisons requirement. Only the specific course numbers and titles listed, including Topics titles (in parentheses), are approved to meet the CALS International Comparisons requirement. | | |
| BIOCHEM 307 | Study Abroad: Introduction to Biological Sciences Research in Japan (approved for enrollments Fall 2026 and later) | 3 |
| NUTR SCI/INTER-AG 421 | Global Health Field Experience (UW Mobile Clinics and Health Care in Uganda) | 3 |
| INTER-AG 321 & INTER-AG/ NUTR SCI 421 | Study Abroad Pre-Departure Seminar and Global Health Field Experience (UW Global Health Community Health and Asset-Based Community Development in Sri Lanka) | 3 |
| INTER-AG 321 & INTER-AG/ NUTR SCI 421 | Study Abroad Pre-Departure Seminar and Global Health Field Experience (UW Agriculture, Health and Nutrition in Uganda) | 3 |
| INTER-AG/ NUTR SCI 421 | Global Health Field Experience (UW Health, Education and Tanzanian Culture) | 3 |

# MAJOR REQUIREMENTS

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

| Code | Title | Credits |
|---|---|---|
| **Mathematics and Statistics** | | |
| This major requires calculus. Prerequisites may need to taken before enrollment in calculus. | | |
| Complete the following: | | 5 |
| MATH 221 | Calculus and Analytic Geometry 1 | |
| Complete one of the following: | | 3 |
| STAT 301 | Introduction to Statistical Methods | |
| STAT 371 | Introductory Applied Statistics for the Life Sciences | |
| **Chemistry** | | |
| *General Chemistry* | | |
| Complete one of the following: | | 5-9 |
| CHEM 103 & CHEM 104 | General Chemistry I and General Chemistry II | |
| CHEM 109 | Advanced General Chemistry | |
| *Organic Chemistry* | | |
| CHEM 343 | Organic Chemistry I | 3 |
| **Physics** | | |
| Complete one of the following: | | 4-5 |
| PHYSICS 103 | General Physics | |
| PHYSICS 201 | General Physics | |
| PHYSICS 207 | General Physics | |
| **Biology** | | |
| *Introductory Biology* | | |
| BIOLOGY/BOTANY/ ZOOLOGY 151 | Introductory Biology | 5 |
| *Fundamental Biological Sciences* | | |
| MICROBIO 101 | General Microbiology | 3 |
| or MICROBIO 303 | Biology of Microorganisms | |
| MICROBIO 102 | General Microbiology Laboratory | 2 |
| or MICROBIO 304 | Biology of Microorganisms Laboratory | |
| BIOCHEM 501 | Introduction to Biochemistry | 3 |
| **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* | | |
| Complete 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 | |

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|---|---|---|
| FOOD SCI 535 | Confectionery Science and Technology | |
| **Capstone** | | |
| FOOD SCI 602 | Senior Project | 2 |
| FOOD SCI 603 | Senior Seminar | 1 |
| **Total Credits** | | **71-76** |