FOOD SCIENCE, BS

The study of food science incorporates real-life aspects of chemistry, physics, microbiology, and engineering to solve today's global and local food problems. The curriculum emphasizes high-level technical competence while instilling communication, critical thinking, and problem-solving skills, with a focus on sustainability and health.

Housed in Babcock Hall, the food science major offers close contact with faculty and instructors, opportunities to conduct research, skill-building extracurricular activities, networking with industry professionals, and access to the modern Food Application Lab and a commercial dairy processing plant that manufactures the campus' famous Babcock ice cream.

With a nearly 100% job placement rate, graduates are equipped to compete and succeed in a modern global economy. Students find career opportunities with corporations, government agencies, and nonprofits in product development, quality assurance/control, processing and engineering, technical sales, management, research, sensory analysis, and food law and regulations.

LEARN THROUGH HANDS-ON, REAL-WORLD EXPERIENCE

Hands-on, practical learning is essential to the program, and laboratory courses are included at every level. Most courses use real food examples to teach principles. A capstone course allows students to apply knowledge from earlier coursework to conduct a lab-based research project and analyze and present their findings. Students are encouraged to pursue internships to gain additional experience; many complete more than one before graduation. Some gain practical experience by working in the Babcock Dairy Plant, making consumer dairy products sold on campus. Others participate in undergraduate research projects on food quality, microbiology, chemistry, and food and health.

BUILD COMMUNITY AND NETWORKS

Faculty teach courses at every level and are on a first-name basis with students. The Food Science Club student organization is active and provides students with leadership opportunities and connections to alums and industry professionals. Additionally, more than 50 companies recruit students annually, providing many links to professionals and job opportunities.

CUSTOMIZE A PATH OF STUDY

Students can select from lab-based elective courses focused on dairy, candy, meat, or fermented foods. The program also offers students the option to participate in honors in research and the flexibility to complete a variety of certificates.

MAKE A STRONG START

The department offers a course for first-year students that focuses on discovering food science and includes study skills, on-campus networking, resume writing, job interview skills, and learning from alums about career options.

GAIN GLOBAL PERSPECTIVE

Study abroad is encouraged and students can use the program's roadmap to take advantage of summer and winter break study abroad opportunities or even a semester abroad with careful planning. Students can explore studying abroad as a Food Science major by utilizing the Food Science Major Advising Page. Students work with their advisor and the CALS study abroad office to identify appropriate programs.

HOW TO GET IN

HOW TO GET IN

Requirements	Details
How to get in	No application required. All students who meet the requirements listed below are eligible to declare. For information on how to declare, visit Advising & Careers.
Courses required to get in	None
GPA requirements to get in	None
Credits required to get in	Must have fewer than 86 credits.
Other	Students who do not meet the requirements above or are not in good academic standing should schedule a meeting with CALS Dean on Call (https://go.wisc.edu/g85h79 (https://go.wisc.edu/g85h79/)) to discuss exceptions.

PROSPECTIVE UW-MADISON STUDENTS

All prospective UW–Madison students must apply through the Office of Admissions and Recruitment (https://www.admissions.wisc.edu/).

Students interested in this major should select it as the first choice major on their UW–Madison application. Admitted students who enroll at UW-Madison and attend Student Orientation, Advising, and Registration (SOAR) with the College of Agricultural and Life Sciences have the option to declare this major at SOAR.

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

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: • 6 credits of Natural Science & Wellness or Natural Science & Wellness + Laboratory coursework. • 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.

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: • is offered by UW-Madison and completed on the UW-Madison campus or at an approved off-site location, or • 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: • placing above MATH 96, or, • successfully completing MATH 96, or • 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: • earning credit for ESL 118, or • achieving a qualifying MSN-ESLAT placement test score.
Language	Complete one: • 2 high school units of a single language other than English, or • 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

Cumulative Credits	• Students must earn 120 degree credits. • 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

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: • 1 course with the Communication A designation, or • satisfaction of Communication A based on UW Placement Test.
Quantitative Reasoning A	Complete either: • 1 course with the Quantitative Reasoning A designation, or • satisfaction of Quantitative Reasoning A based on UW Placement Test.
Introductory Chemistry	Complete one: • CHEM 103 • CHEM 108 • 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
FW ECOL 101	Orientation to Wildlife Ecology	1
FW 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
CE SOC/SOC 341	Labor in Global Food Systems (approved for enrollments Summer 2020 and later)	3
CE SOC/ENVIR ST/ SOC 540	Sociology of International Development, Environment, and Sustainability	3
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
FW ECOL/ENVIR ST 100	Forests of the World (approved for enrollments Summer 2020 and later)	3
FW 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	
FOOD SCI 535	Confectionery Science and Technology	
Capstone		
FOOD SCI 602	Senior Project	2
FOOD SCI 603	Senior Seminar	1
Total Credits		**71-76**

LEARNING OUTCOMES

LEARNING OUTCOMES

1. Clearly and effectively communicate, both verbally and written, to a diverse range of audiences including technical experts and a lay audience.
2. Apply quantitative problem solving and critical thinking skills in all aspects of food science.
3. Rigorously apply scientific principles and quantitative reasoning to solve food science problems (technical competence).
4. Demonstrate the ability to work both independently and in groups across a wide range of situations.

FOUR-YEAR PLAN

FOUR-YEAR PLAN

This sample four-year plan is a tool to assist students and their advisors. Students should use their DARS report, the degree planner, Guide requirements, and the course search & enroll tools to make their own four-year plan based on their placement scores, credit for transferred courses and approved examinations, and individual interests. Students must complete a minimum of 120 credits. This may require taking 16 credits per semester for at least four semesters.

In the first year of the plan, students who take CHEM 109 Advanced General Chemistry will not take CHEM 104 General Chemistry II.

SAMPLE FOOD SCIENCE FOUR-YEAR PLAN

First Year

Fall	Credits	Spring	Credits
CHEM 103 or 109	4	CHEM 104	5
MATH 221	5	BIOLOGY/BOTANY/ ZOOLOGY 151	5
General Education Course	3	FOOD SCI 201 (recommended)	1
CALS First-Year Seminar	1	General Education Course	3
	13		**14**

Second Year

Fall	Credits	Spring	Credits
CHEM 343	3	STAT 371 or 301	3
FOOD SCI 301	3	PHYSICS 103, 201, or 207	4
MICROBIO 101 & MICROBIO 102	5	Elective	3
CALS International Comparisons	3	General Education Course	3
		General Education Course	3
	14		**16**

Third Year

Fall	Credits	Spring	Credits
BIOCHEM 501	3	NUTR SCI 332 or 510	3
FOOD SCI 440	3	FOOD SCI/AN SCI 321	1
FOOD SCI 410	3	FOOD SCI 432	3
MICROBIO/ FOOD SCI 324 & MICROBIO/ FOOD SCI 325	5	FOOD SCI 412	4
		General Education Course	3
		Integrated Food Product Elective	1-3
	14		**17**

Fourth Year

Fall	Credits	Spring	Credits
FOOD SCI 532	4	FOOD SCI 514	4
FOOD SCI 602	2	FOOD SCI 603	1
Electives	11	Electives	10
	17		**15**

Total Credits 120

ADVISING AND CAREERS

ADVISING AND CAREERS

ADVISING

All students are assigned a faculty advisor, who they will come to know on a first-name basis, once they declare the major. Advisors are prepared to help with curricular planning and course access; major and degree questions; discussion of independent study and lab research experience; and navigating internship and scholarship opportunities. Declared food science majors must meet with their assigned advisor each semester before enrolling in coursework. Additional information can be found on the department's website listed in the Contact Information Box.

Prospective food science majors should contact the Department of Food and Nutritional Sciences for more information (see the Contact Information Box).

CAREER OPPORTUNITIES

More than 50 organizations recruit students each year, and nearly all food science majors receive a job offer before graduation. Careers include working in product development, quality assurance/control, processing and engineering, technical sales, management, research, sensory analysis, and food law and regulations for corporations, nonprofits, and government agencies. Faculty advisors and course assignments help prepare students to write resumes, interview for jobs, and network with professionals in the field.

GRADUATE STUDY

Students considering post-graduate study should consult with their advisor and review the admissions requirements for graduate programs of interest. Post-graduate study may require preparatory coursework beyond the food science major requirements.

WISCONSIN EXPERIENCE

WISCONSIN EXPERIENCE

STUDENT ORGANIZATIONS

The Food Science Club organizes many programs, including mentoring first-year students, organizing company visits and tours, monthly socials, K-12 educational outreach, a food and health initiative, and a food systems initiative. Club meetings usually include presentations by companies and include food. Faculty advise the club, and activities are coordinated with coursework.

COMPETITIVE TEAMS

The Food Science Club coordinates many competitions. Each year, there are several different product development competitions, which are very popular with students. There is also a College Bowl, which is a food science trivia competition, and a dairy judging team that competes regionally and nationally.

INTERNSHIPS

Advisors encourage students to pursue internships with one of the dozens of companies connected to the program. Most students complete at least one internship before graduation, but some complete as many as three. Students spend their summers at companies that include General Mills, Pepsico, Kraft-Heinz, Organic Valley, Danone, Agropur, Schreiber Cheese, Lindt Chocolate, and many more. These internships are generally paid, and many have lodging subsidies.

Students can also gain experience in several campus centers and programs focused on food, including the Babcock Dairy Plant, Center for Dairy Research, Food Research Institute, or Bucky's Varsity Meats.

RESEARCH EXPERIENCE

First-year students are encouraged to pursue research experiences in faculty labs to get involved. Undergraduates can participate for credit through independent study or work for pay. Students working in faculty labs have been co-authors of scientific publications in food science and nutrition journals.

GLOBAL ENGAGEMENT

With advance planning, students can study abroad and complete the degree in four years. Opportunities include France, the Netherlands, and Australia. Read more about study abroad as a food science major. (https://studyabroad.wisc.edu/academics/major-advising-pages-maps/food-science/)

COMMUNITY ENGAGEMENT AND VOLUNTEERING

The Food Science Club organizes various volunteer activities. These have included dinners at the Ronald McDonald House, working with food pantries, and reducing food waste.

RESOURCES AND SCHOLARSHIPS

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SCHOLARSHIPS

Students in the College of Agricultural and Life Sciences receive more than $1.25 million in scholarships annually. Learn more about college scholarships.

Food science students are additionally eligible for approximately $50,000-60,000 in annual scholarships. Well-qualified students receive awards ranging from $1,000-$3,000.

RESOURCES

Babcock Dairy Plant: Want practical experience in a fully operational dairy plant? Consider signing up for part-time work in the Babcock Dairy Plant to gain experience in a wide range of practical jobs, from quality control to production.

Babcock Hall Food Application Lab: This lab has 11 culinary workstations, food service equipment, and other amenities needed to prepare food at both small and food service scales.

Center for Dairy Research (CDR): Also within Babcock Hall is the internationally-renowned Center for Dairy Research. Students can conduct research, work in the analytical labs, or participate in the CDR Sensory Panel to gain invaluable practical experience.

Food Research Institute (FRI): Housed in the Microbial Sciences Building, FRI conducts industry-oriented research on various food safety topics.

Bucky's Varsity Meats: Interested in meat science? The meat processing facilities within the Department of Animal and Dairy Sciences apply many food science principles and provide a unique opportunity for students to get hands-on experience with all aspects of meat production.