

## Food & Bioprocess Engineering Requirements



### General Studies 20 - 23 Credits

- Social Sciences
- Humanities
- Ethnic Studies
- Economics
- International Studies
- Oral and written communication

### Basic Sciences 45 - 48 Credits

- Biological Science
- Mathematics
- Chemistry
- Physics
- Biochemistry
- Bacteriology
- Food Science

### Engineering Sciences 18 Credits

- Transport Phenomena
- Momentum and heat transport operation
- Thermodynamics
- Engineering Economics
- Material properties
- Instrumentation

### Food & Bioprocess Engineering 36 - 42 Credits

- Food Engineering Operations
- Process Synthesis
- Design capstone
- Technical electives

Minimum Requirements for a Bachelor of Science Degree 128 credits

The curriculum changes from year to year. Updated curriculum sheets with exact requirements can be obtained from the department. For more details, please consult the university catalogue or visit our website.

### Interdepartmental Partnership

Food & Bioprocess Engineering is a program option within the Department of Biological Systems Engineering (BSE) in partnership with the Department of Food Science. By joining forces, these two departments increase the value of your education by increasing faculty contact, hands-on laboratory experiences, and the variety and breadth of your classes.

The BSE Department offers a personalized education that includes a wide variety of classes with hands-on experience. You won't be just another number in your Food and Bioprocess Engineering courses. You will be in small classes taught by professors who know you by name. This one-on-one interaction and personal attention is the cornerstone of our program.

The Food & Bioprocess Engineering program is designed to capture the essential features of both food science and engineering education. Graduates also may work on pilot-plant studies and manufacturing systems. In short, Food & Bioprocess Engineering graduates are engineers with a strong food science education.

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# Food & Bioprocess Engineering



and  
Department of Food Science

## Food for the Future

The food industry plays a vital role in ensuring the safety of the nation's food supply and in the production of nutritious, convenient and economical food products. The food industry is the largest industrial enterprise in the nation, based on the dollar value of products shipped. It generates about 20% of the gross national product (GNP) and employs 25% of the workforce. Food & Bioprocess Engineers are increasingly needed in the food industry as technology advances and global competition motivates the industry to develop higher technological processes to convert raw materials from the farm into food products for human consumption.



## Career Opportunities

If you have ever been fascinated with the variety of products available at your supermarket, then Food & Bioprocess Engineering may be a career for you.



Food & Bioprocess Engineers work with not only the food itself, but also its packaging, storage, delivery and preparation and food biotechnology. This results in many jobs in the food industry for individuals with a knowledge of chemistry, engineering and microbiology. Food & Bioprocess Engineers evaluate, design, modify, improve and economize the processing and distribution of food, feed and fiber. Careers in process engineering, product development, research, sales and marketing

are available to graduates who understand the science and engineering of food manufacture, storage and distribution.

Most of our Food & Bioprocess Engineers work in companies large and small that are involved in one or more of the following:

- processing, packaging and distribution of dairy, meat, poultry and seafood products
- canning and freezing fruits and vegetables
- drying and storing cereal grains, oilseeds and other feed stuffs
- preparing and distributing confectioneries, snacks, baked foods and beverages
- designing and testing machines and instruments
- sensing and controlling temperature, pressure, moisture, sugar, etc.
- development of new foods and processes

Some of the companies where our graduates work are: M&M Mars; Kraft Foods, Inc.; Cargill, Inc; Pillsbury Company; Oscar Mayer Foods; General Mills; FritoLay.

## Academic Preparation

If you enjoy math and science and are interested in chemical, biological, agricultural or mechanical systems - then Food & Bioprocess Engineering will be the career for you. Your college preparatory curriculum should include at a minimum, classes in algebra, biology, chemistry, physics and trigonometry. You should also take any advanced math or science classes that are available.

## Learning Outside the Classroom

- Food Industry Internships
- Faculty Research Projects
- Student Chapter of ASAE-the society for engineering in agricultural, food, and biological systems
- Wisconsin Section of the Institute of Food Technologists
- Food Science Club
- Student Chapter of the American Institute of Chemical Engineers
- Engineering Expo - a biannual event to display creative engineering projects
- Wisconsin Engineer - a student-run magazine for engineers

## Financial Aid Resources

- College of Agriculture and Life Sciences Scholarship Program
- Biological Systems Engineering Department
- Food Science Department
- Work Study
- UW-Madison Office of Financial Aid



## Other Option Areas

The BSE program has 3 other option areas:

- Machinery Systems Engineering
- Natural Resource & Environmental Engineering
- Structural Systems Engineering

*Please visit our website at*

***<http://bse.wisc.edu>***

*to learn more about  
Food & Bioprocess Engineering at the  
University of Wisconsin-Madison.*

## Student Testimonials

“I really like the combination of engineering and biological sciences. Most food scientists don't know engineering and most engineers don't know food science. I feel very fortunate to have found a program that emphasizes both areas. ,,”

“You get a broad-based education with professors that know your name. ,,”

“My advisor has always been very helpful. He knows and cares about what I'm doing. ,,”