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MINNESOTA STATE
UNIVERSITY
MANKATO

FOOD SCIENCE TECHNOLOGY *College of Science, Engineering and Technology*

WHAT DEGREE AND PROGRAM DO WE OFFER?

The program offers a BS in Food Science Technology

WHAT IS FOOD SCIENCE & FOOD SCIENCE TECHNOLOGY?

Recent outbreaks of food borne disease and concern for safe food products for consumers is driving the market for individuals with a degree in Food Science Technology. Graduates can expect to find employment within the food industry and testing laboratories or government laboratories. These positions require a diversified training in both foods and sciences, especially microbiology and chemistry.

The food industry in the United States is highly competitive and innovative and provides the consumer with a wide range of convenient, safe products. As an industry, food processors must continue to strive to keep food costs low and to improve safety. A food science technologist is concerned with several aspects of the food industry including:

- Production and engineering
- Quality assurance and management
- Sanitation
- Research and development for better processing technology and new products
- Laboratory analysis
- Waste management

Food scientists work to keep disease producing organisms out of food, to formulate new products, to transfer technology from laboratories to production facilities, and to better inform customers how to safely use the foods they buy. Food scientists are also involved in the production of ingredients that go into our foods. These ingredients include vitamins and flavors.

WHAT CAREER OPPORTUNITIES ARE AVAILABLE FOR STUDENTS COMPLETING THIS PROGRAM?

Career opportunities can be found in numerous places. Food scientists work for several branches of the government, such as state departments of health and the U.S. Food and Drug Administration. They work to ensure that government standards for safety and quality are met. Most food scientists work for industry. They may be plant supervisors, heads of laboratories, or lead educational programs. With advanced training food scientists may also work at colleges and universities teaching or in food related research. Some food scientists develop their own products and begin their own companies.

WHAT IS NEEDED TO WORK AS A FOOD SCIENCE TECHNOLOGIST AT AN ENTRY LEVEL POSITION?

Companies are looking for individuals with strong science backgrounds and courses relating the sciences to foods. The BS program at Minnesota State University, Mankato provides that background. Students take courses in food science, food microbiology, fermentation technology, food preservation, and instrumentation. Students can elect to take industrial hygiene or receive training in hazard analysis/critical control point (HACCP) systems which all industries must now have. The major also requires a chemistry minor and one course in biochemistry.

During the senior year, students participate in a capstone experience; either an industry based internship or a laboratory based research experience. The senior experience is designed to train students beyond the typical classroom experience and enhance their capability to find employment after graduation.

WHAT IS AN INTERNSHIP?

One of the best experiences leading to employment in food science is the internship. For an internship, a student applies to a food company or laboratory for the opportunity and registers for internship credit. The Food Science Technology Program has a list of potential internship sites. Most internships are done in the summer to allow the student maximum contact with the industry. Many of the companies are willing to provide an hourly salary during this period. While at the company, the student is exposed to several areas and receives hands-on training.

WHO IS INVOLVED IN RUNNING THE FOOD SCIENCE TECHNOLOGY PROGRAM?

Food Science Technology is an interdisciplinary major. The majority of courses are offered through three departments: Biological Sciences, Chemistry, and Family Consumer Science. All faculty involved in the program are actively involved in teaching the courses required for the degree and have doctoral degrees in their area of specialty. They are also involved in research related to food science issues, such as food borne disease organisms, fermentation, biochemistry of foods, and sensory evaluation.

WHAT DOES A HIGH SCHOOL STUDENT NEED TO KNOW TO DO WELL IN THE PROGRAM?

A student planning to major in Food Science Technology should have a strong, balanced preparatory program with as many courses as possible in the sciences and mathematics. Biology and chemistry are particularly important. Physics is also helpful.

WHERE COULD I FIND MORE INFORMATION ABOUT FOOD SCIENCE AND FOOD SCIENCE TECHNOLOGY?

Several professional organizations have web sites which are regularly updated to provide more information about what they do and what employment opportunities exist.

American Chemical Society: www.acs.org

Institutes for Food Technology: www.ift.org

International Association for Food Protection:
www.foodprotection.org

Society for Industrial Microbiology: www.simhq.org

American Society for Microbiology: www.asm.org

The US Food and Drug Administration also has an interesting site at www.fda.gov.

FOR MORE INFORMATION PLEASE CONTACT

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Minnesota State University, Mankato

242 Trafton Science Center S

Mankato, MN 56001

Phone

507-389-5738 (V) or 389-2786 for messages

800-627-3529 or 711 (MRS/TTY)

or

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507-389-1521

You are encouraged to visit the campus.

To arrange for a visit, please call:

Office of Admissions: 507-389-1822

Toll-free: 800-722-0544

SAMPLE FOUR-YEAR CURRICULUM (FOOD SCIENCE TECHNOLOGY, BS)

First Year (Fall)	First Year (Spring)
ENG 101 Composition (4) BIOL 105 General Biology I (4) Math 112 College Algebra (4) FCS 150 Food Culture & You (3)	BIOL 106 General Biology II (4) MATH 154 Elementary Statistics (3) CHEM 201 General Chemistry FCS 242 Nutrition of Health Professionals (3)
Second Year (Fall)	Second Year (Spring)
BIOL 220 Human Anatomy (4) CHEM 202 General Chemistry II (5) ENG 271W Technical Communication (4) General Education Course (2)	BIOL 270 General Microbiology (4) BIOL 330 Human Physiology (4) CHEM 305 Analytical Chemistry (4) General Education Course (3)
Third Year (Fall)	Third Year (Spring)
CHEM 322 Organic Chemistry I (4) FCS 340 Food Science (4) General Education Course (3) General Education Course, Writing Intensive (3)	BIOL 478 Food Microbiology (4) FCS 444 Experimental Food Science (3) CHEM 360 Principles of Biochemistry (4) General Education Course, Gold (4)
Fourth Year (Fall)	Fourth Year (Spring)
BIOL 453 Biological Engineering Analysis I (4) BIOL 497 Internship I (2-4) OR BIOL 499 Independent Study (2-4) Upper Level General Elective Course (3) General Education Course (1-4) General Elective (0-3)	BIOL 452 Biological Instrumentation OR General Education Course, Purple (3) General Education Course (3) General Education Course (3) General Elective Course (3)

For additional information about course requirements, please visit <http://www.mnsu.edu/supersite/academics/bulletins/>

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