FOOD SCIENCE AND TECHNOLOGY - BS, FOOD INDUSTRY OPTION

This program integrates knowledge from the basic disciplines of chemistry, microbiology, physics and biology and applies scientific principles from food engineering, food processing operations, sensory evaluation, food safety, HACCP, quality assurance and management to produce foods that are wholesome, affordable and safe.

Food Science and Technology is an exciting multidisciplinary field that prepares majors with a comprehensive knowledge of the biological, physical and engineering sciences to develop new food products, design innovative processing technologies, improve food quality and nutritive value, enhance the safety of foods and ensure the wholesomeness of our food supply. Food Science majors apply the principles learned in the basic sciences such as food chemistry, biochemistry, genetics, microbiology, food engineering and nutrition to provide consumers with safe, wholesome and attractive food products that contribute to their health and well-being. For more information, visit https://foodscience.tamu.edu.

The undergraduate curriculum is approved by the Institute of Food Technologists (IFT) and offers two tracks, a Food Science Option and an Industry Option. These tracks provide promising career opportunities in areas such as food product/process design, technical service, research and development, quality assurance, food safety, food law, regulatory oversight, technological innovation, marketing, corporate sales, sensory evaluation and operations management. There are numerous opportunities available for corporate internships, scholarships and study abroad programs that provide real-world experience and enhance opportunities for employment after completing a baccalaureate degree. The major also provides an excellent background for those interested in professional schools, graduate studies, medicine, veterinary medicine, dentistry, pharmacy, physical therapy, nursing, occupational therapy and public health.

The goal of the Food Industry Option curriculum is to prepare Food Technologists for careers in the food and related industries. These careers may involve food processing, manufacturing, technical service, food product development, operations management, regulatory oversight and other technology based opportunities.

Program Requirements

First Year		
Fall		
CHEM 119	Fundamentals of Chemistry I	4
ENGL 103 or ENGL 104	Introduction to Rhetoric and Composition or Composition and Rhetoric	3
FSTC 201	Food Science	3
FSTC 210/ NUTR 210	Horizons in Nutrition and Food Science	1
Mathematics (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#mathematics) [1]		3
General elective [2]		1
	Semester Credit Hours	**15**
Spring		
CHEM 120	Fundamentals of Chemistry II	4
Select one of the following:		3
AGEC 105	Introduction to Agricultural Economics	
ECON 202	Principles of Economics	
ECON 203	Principles of Economics	
American history (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) [3]		3
Language, philosophy and culture (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture) [3]		3
Mathematics (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#mathematics) [1]		3
	Semester Credit Hours	**16**
Second Year		
Fall		
BIOL 111	Introductory Biology I	4
CHEM 257	Organic Chemistry I - Structure and Function	4
NUTR 202 or NUTR 203	Fundamentals of Human Nutrition or Scientific Principles of Human Nutrition	3
POLS 206	American National Government	3
	Semester Credit Hours	**14**
Spring		
ACCT 209	Survey of Accounting Principles	3
PHYS 201	College Physics	4
American history (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) [3]		3
Creative arts (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts) [3]		3
General elective [2]		3
	Semester Credit Hours	**16**
Third Year		
Fall		
ENGL 210	Technical and Professional Writing	3
FSTC 311	Principles of Food Processing	3
POLS 207	State and Local Government	3
Select one of the following:		3
ANSC 307	Meats	
ANSC 457/ FSTC 457	Hazard Analysis and Critical Control Point System	
FSTC 281	Introduction to Fermentation and Brewing Sciences	
FSTC 305	Fundamental Baking	

FSTC 316	Food Biomanufacturing and Cellular Agriculture	
FSTC 319	Molecular Methods for Microbial Detection and Characterization	
FSTC 320/ NUTR 320	Understanding Obesity - A Social and Scientific Challenge	
FSTC 324	Food Safety and Preventive Controls for Human Food	
FSTC 416	Precision Fermentation and Future of Foods	
FSTC 420	Supervised Research in Mediterranean Nutrition and Food Processing in Italy	
FSTC 422	Food Processing for Sustainable Nutrition in Brazil	
FSTC 430	Innovative Functional Food Ingredients	
FSTC 457/ ANSC 457	Hazard Analysis and Critical Control Point System	
FSTC 485	Directed Studies	
FSTC 489	Special Topics in...	
FSTC 491	Research	
HORT 419	Viticulture and Small Fruit Culture	
HORT 420	Concepts of Wine Production	
HORT 421	Enology	
NUTR 211	Scientific Principles of Foods	
NUTR 300/ FSTC 300	Religious and Ethnic Foods	
NUTR 410/ FSTC 410	Nutritional Pharmacometrics of Food Compounds	
POSC 406	Poultry Further Processing	
General elective [2]		4
	Semester Credit Hours	**16**
Spring		
AGEC 314	Marketing Agricultural and Food Products	3
FSTC 312	Food Chemistry	3
FSTC 313	Food Chemistry Laboratory	1
MGMT 309	Survey of Management	3
Select one of the following:		3
STAT 301	Introduction to Biometry	
STAT 302	Statistical Methods	
STAT 303	Statistical Methods	
General elective [2]		1
	Semester Credit Hours	**14**
Fourth Year		
Fall		
FSTC 314	Food Analysis	3
AGSM 315/ FSTC 315	Food Process Engineering Technology	3
ANSC 326/ FSTC 326	Food Bacteriology	3
ANSC 327/ FSTC 327	Food Bacteriology Lab	1
Select one fo the following:		3
ANSC 307	Meats	
ANSC 457/ FSTC 457	Hazard Analysis and Critical Control Point System	
FSTC 281	Introduction to Fermentation and Brewing Sciences	
FSTC 305	Fundamental Baking	
FSTC 316	Food Biomanufacturing and Cellular Agriculture	
FSTC 319	Molecular Methods for Microbial Detection and Characterization	
FSTC 320/ NUTR 320	Understanding Obesity - A Social and Scientific Challenge	
FSTC 324	Food Safety and Preventive Controls for Human Food	
FSTC 416	Precision Fermentation and Future of Foods	
FSTC 430	Innovative Functional Food Ingredients	
FSTC 420	Supervised Research in Mediterranean Nutrition and Food Processing in Italy	
FSTC 422	Food Processing for Sustainable Nutrition in Brazil	
FSTC 457/ ANSC 457	Hazard Analysis and Critical Control Point System	
FSTC 485	Directed Studies	
FSTC 489	Special Topics in...	
FSTC 491	Research	
HORT 419	Viticulture and Small Fruit Culture	
HORT 420	Concepts of Wine Production	
HORT 421	Enology	
NUTR 211	Scientific Principles of Foods	
NUTR 300/ FSTC 300	Religious and Ethnic Foods	
NUTR 410/ FSTC 410	Nutritional Pharmacometrics of Food Compounds	
POSC 406	Poultry Further Processing	
	Semester Credit Hours	**13**
Spring		
BICH 303 or BICH 410	Elements of Biological Chemistry or Comprehensive Biochemistry I	3
FSTC 401	Food Product Development	3
FSTC 444	Fundamentals of Food Law	3
FSTC 481	Seminar	1
General elective [2]		6
	Semester Credit Hours	**16**
	Total Semester Credit Hours	**120**

1 MATH prefix required.

2 Students may achieve a business minor by taking the following courses as general electives: ISTM 209, MGMT 209, FINC 409, MKTG 409.

3 The graduation requirements include a requirement for 3 hours of International and Cultural Diversity (https://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/) and 3 hours of Cultural Discourse (https://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/). Selection must be from

courses on the approved list. Selection can be courses that also satisfy the requirement for social and behavioral sciences; creative arts; language, philosophy and culture; or electives. For more information on core requirements visit the University Core Curriculum (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) catalog page.

A total of 120 hours is required for graduation; 36 hours of 300/400 level courses are required to meet the Texas A&M University residency requirement.