

Great Plains Institute of Food Safety

www.ag.ndsu.edu/foodsafety

Great Plains Institute of Food Safety

An interdisciplinary team of faculty with expertise in food safety from various departments within NDSU's Colleges of: Agriculture, Food Systems, and Natural Resources (<http://www.ag.ndsu.edu/academics>) ; Arts, Humanities and Social Sciences (<https://www.ndsu.edu/ahss>) ; Human Development and Education (<https://www.ndsu.edu/hde>) ; Engineering (<https://www.ndsu.edu/coe>) ; and Science and Mathematics (<https://www.ndsu.edu/scimath>) has formed the Great Plains Institute of Food Safety and developed a unique educational experience for NDSU students. The comprehensive food safety curriculum leads to B.S., M.S., and Ph.D. degrees in Food Safety, an Undergraduate Minor in Food Safety. A graduate Certificate in Food Protection is also offered (see Graduate School (<https://www.ndsu.edu/gradschool>) web site for complete curriculum requirements). All these programs are unified around the single issue of food safety, an area of concern for many Americans, the current target of tremendous interest, effort, and spending worldwide, and an area in which shortages of expertise are manifest. Students in food safety are heavily recruited for employment in the food safety fields.

The curriculum is based on contemporary educational theory and employs experiential learning techniques to foster development of students' critical-thinking abilities, collaborative and problem-solving skills, and awareness of employment opportunities. Courses are fully integrated so that students have the opportunity to troubleshoot food-safety issues from "farm-to-fork." The program strives to meet students' present and future educational needs.

Food Safety Major

A number of undergraduate and graduate programs of study in food safety are offered through the Great Plains Institute for Food Safety. Food safety is an area of concern for many Americans, the current target of tremendous interest, effort, and spending worldwide and an area in which shortages of expertise are manifest. For further information, refer to the Interdisciplinary Programs (<http://bulletin.ndsu.edu/past-bulletin-archive/2017-18/undergraduate/interdisciplinary-studies>) section of this Bulletin.

Food Safety Minor

Students may minor in Food Safety by completing a total of 16 credits. A minimum of eight credits must be taken at NDSU.

Major Requirements

Major: Food Safety

Degree Type: B.S.

Minimum Degree Credits to Graduate: 128

General Education Requirements for Baccalaureate Degree

- A list of approved general education courses is available here (<http://bulletin.ndsu.edu/past-bulletin-archive/2017-18/academic-policies/undergraduate-policies/general-education/#genedcoursestext>) .
- General education courses may be used to satisfy requirements for both general education and the major, minor, and program emphases, where applicable. Students should carefully review the major, minor, and program emphases requirements for minimum grade restrictions, should they apply.

Code	Title	Credits
Communication (C)		12
ENGL 110	College Composition I	
ENGL 120	College Composition II	
COMM 110	Fundamentals of Public Speaking	
Upper Division Writing [†]		
Quantitative Reasoning (R) [†]		3
Science and Technology (S) [†]		10
Humanities and Fine Arts (A) [†]		6
Social and Behavioral Sciences (B) [†]		6
Wellness (W) [†]		2
Cultural Diversity (D) ^{**†}		

Global Perspectives (G) ^{†}**

Total Credits	39
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* May be satisfied by completing courses in another General Education category.

† May be satisfied with courses required in the major. Review major requirements to determine if a specific upper division writing course is required.

Major Requirements

Code	Title	Credits
Food Safety Required Core		
AGRI 150	Agriculture Orientation (Students transferring in 24 or more credits do not need to take AGRI 150.)	1
AGRI 189	Skills for Academic Success ¹	1
ANSC 340	Principles of Meat Science	3
CFS 200	Introduction to Food Systems	2-3
or CFS 210	Introduction to Food Science and Technology	
Select one from the following:		3 or 4
CFS 460 & CFS 461	Food Chemistry and Food Chemistry Laboratory	
CFS 464	Food Analysis	
Select one from the following:		3 or 4
CFS 370	Food Processing I	
CFS 470 & CFS 471	Food Processing II and Food Processing Laboratory	
MICR 350 & 350L	General Microbiology and General Microbiology Lab	5
MICR 474	Epidemiology	3
SAFE 401	Food Safety Information & Flow of Food	1
SAFE 402	Foodborne Hazards	1
SAFE 403	Food Safety Risk Assessment	1
SAFE 404	Epidemiology of Foodborne Illness	1
SAFE 405	Costs of Food Safety	1
SAFE 406	Food Safety Crisis Communication	1
SAFE 407	Food Safety Risk Management	1
SAFE 408	Food Safety Regulatory Issues	1
SAFE 409	Food Safety Risk Communication & Education	1
SAFE 452	Food Laws and Regulations	3
SAFE 484	Food Safety Practicum	1-3
SAFE/COMM 485	Risk and Crisis Communication	3
Supporting Courses		
BIOC 260 or BIOC 460	Elements of Biochemistry Foundations of Biochemistry and Molecular Biology I	3-4
BIOL 150 & 150L	General Biology I and General Biology I Laboratory	4
CHEM 121 & 121L	General Chemistry I and General Chemistry I Laboratory (May satisfy general education category S)	4
CHEM 122 & 122L	General Chemistry II and General Chemistry II Laboratory (May satisfy general education category S)	4
CHEM 341 & 341L	Organic Chemistry I and Organic Chemistry I Laboratory	4
ECON 201	Principles of Microeconomics (May satisfy general education category B and G)	3
ECON 202	Principles of Macroeconomics (May satisfy general education category B and G)	3
Select one of the following:		3 or 4
MATH 105	Trigonometry	
MATH 146	Applied Calculus I	

MATH 165	Calculus I	
PHYS 211 & 211L	College Physics I and College Physics I Laboratory (May satisfy general education category S)	4
STAT 330	Introductory Statistics (May satisfy general education category R)	3
Total Credits		63-76

¹ AGRI189 is only required for first-time, first-year students--A first-time, first-year student is defined as a student who has not yet completed a college course as a college student. Students that are not first-time, first-year students that either transfer into the university or change their major are not required to take AGRI 189.

Minor Requirements

Food Safety Minor

Minor Requirements

Required Credits: 16

Code	Title	Credits
Required Courses		
SAFE 401	Food Safety Information & Flow of Food	1
SAFE 402	Foodborne Hazards	1
SAFE 403	Food Safety Risk Assessment	1
SAFE 404	Epidemiology of Foodborne Illness	1
SAFE 405	Costs of Food Safety	1
SAFE 406	Food Safety Crisis Communication	1
SAFE 407	Food Safety Risk Management	1
SAFE 408	Food Safety Regulatory Issues	1
SAFE 409	Food Safety Risk Communication & Education	1
Elective Courses: Select 7 credits from the following:		7
AGEC 339	Quantitative Methods & Decision Making	
AGEC 344	Agricultural Price Analysis	
AGEC 375	Applied Agricultural Law	
AGEC 484	Agricultural Policy	
ANSC 340	Principles of Meat Science	
ANSC 344	Fundamentals of Meat Processing	
ANSC 370	Fundamentals/Animal Disease	
ANSC 482	Sheep Industry and Production Systems	
ANSC 484	Swine Production/Pork Industry Systems	
ANSC 486	Beef Industry and Production Systems	
ANSC 488	Dairy Industry and Production Systems	
CFS 471	Food Processing Laboratory	
CFS 480	Food Product Development	
COMM 486		
EMGT 261	Disaster Preparedness	
EMGT 263	Disaster Response	
EMGT 461	Business Continuity and Crisis Management	
HNES 141	Food Sanitation	
HNES 361 & 361L	Foodservice Systems Management I and Foodservice Systems Management I Laboratory	
HNES 460 & 460L	Foodservice Systems Management II and Foodservice Systems Management II Laboratory	
MICR 350 & 350L	General Microbiology and General Microbiology Lab	
MICR 453	Food Microbiology	

MICR 460 & 460L	Pathogenic Microbiology and Pathogenic Microbiology Laboratory
MICR 470	Basic Immunology
MICR 471	Immunology and Serology Laboratory
MICR 474	Epidemiology
PLSC 110	World Food Crops
PPTH 460	Fungal Biology
SAFE 452	Food Laws and Regulations
SAFE 484	Food Safety Practicum
SAFE/COMM 485	Risk and Crisis Communication

Total Credits

16

Minor Requirements and Notes:

- A minimum of 8 credits must be taken at NDSU