

Food Science

College of Agriculture,
Food and Environment

Food science is the study of the transformation of biological materials into food products acceptable for human consumption. This requires studying diverse scientific disciplines related to food, including chemistry, engineering, microbiology, biochemistry, toxicology, and management; and effectively applying the industrial and practical aspects to product development, food processing, preservation, and marketing. The program is administered by the Department of Animal and Food Sciences and offers training in the basic sciences and in the fundamentals of food science.

Career opportunities in food industries include: management, research and development of new food products and ingredients, process supervision, quality control, procurement, distribution, sales, and merchandising. Positions include sales and services in allied industries; consulting and trade association activities; and promotional and educational services. Governmental agencies employ food scientists whose work is directed towards research, regulatory control, and the development of food standards.

Graduation Requirements

To earn the Bachelor of Science in Food Science, the student must complete a minimum of 128 semester hours with at least 45 hours from courses at the 300 level and above. A 2.0 grade-point standing (on a 4.0 scale) is necessary and remedial courses may **not** be counted toward the total hours required for the degree.

The Food Science program meets the requirements for accreditation by the Institute of Food Technologists and the National Organization of Food Science Professionals.

Each student must complete the following:

UK Core Requirements

See the *UK Core* section of the 2014-2015 *Undergraduate Bulletin* for the complete UK Core requirements. The courses listed below are (a) recommended by the college, or (b) required courses that also fulfill UK Core areas. Students should work closely with their advisor to complete the UK Core requirements.

I. Intellectual Inquiry in Arts and Creativity

Choose one course from approved list 3

II. Intellectual Inquiry in the Humanities

Choose one course from approved list 3

III. Intellectual Inquiry in the Social Sciences

Choose one course from approved list 3

IV. Intellectual Inquiry in the Natural, Physical, and Mathematical Sciences

CHE 105 General College Chemistry I 4

CHE 111 Laboratory to Accompany General Chemistry I 1

V. Composition and Communication I

CIS/WRD 110 Composition and Communication I 3

VI. Composition and Communication II

CIS/WRD 111 Composition and Communication II 3

VII. Quantitative Foundations

MA 123 Elementary Calculus and Its Applications

or

MA 113 Calculus I

or

MA 137 Calculus I With Life Science Applications 4

VIII. Statistical Inferential Reasoning

STA 210 Making Sense of Uncertainty:

An Introduction to Statistical Reasoning 3

IX. Community, Culture and Citizenship in the USA

GEN 100 Issues in Agriculture, Food and Environment 3

X. Global Dynamics

Choose one course from approved list 3

UK Core hours **33**

Graduation Composition and Communication Requirement (GCCR)

After attaining sophomore status, students must complete the Graduation Composition and Communication Requirement. Please see your academic advisor for courses that meet this requirement.

PLEASE NOTE: The following courses are prerequisites for required upper-division courses in the Food Science degree program.

BIO 150 Principles of Biology I 3

BIO 152 Principles of Biology II 3

CHE 105 General College Chemistry I 4

CHE 107 General College Chemistry II 3

CHE 111 Laboratory to Accompany General Chemistry I 1

CHE 113 Laboratory to Accompany General Chemistry II 2

MA 123 Elementary Calculus and Its Applications

or

MA 113 Calculus I

or

MA 137 Calculus I With Life Science Applications 4

Subtotal: Prerequisite hours **20**

Premajor Requirements

Hours

*MA 132 Calculus for the Life Sciences 3

BIO 208 Principles of Microbiology 3

BIO 209 Introductory Microbiology Laboratory 2

CHE 236 Survey of Organic Chemistry 3

DHN 212 Introductory Nutrition 3

PHY 211 General Physics 5

STA 291 Statistical Methods 3

Subtotal: Premajor hours **22**

**Students who take MA 113 or MA 137 do not need to take MA 132.*

Major Requirements

Hours

Required:

FSC 107 Introduction to Food Science 3

AEN 340 Principles of Food Engineering 4

DHN 311 Nutritional Biochemistry **or**

BCH 401G Fundamentals of Biochemistry 3

FSC 306 Introduction to Food Processing 4

FSC 434G Food Chemistry 4

FSC 530 Food Microbiology 5

FSC 535 Food Analysis 4

FSC 536 Advanced Food Technology 4

Subtotal: Major hours **31**

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University of Kentucky is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate, baccalaureate, masters, and doctorate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097, call 404-679-4500, or online at www.sacscoc.org for questions about the accreditation of University of Kentucky.

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Specialty Support

Students must select 22 credits from the following suggested list of support courses:

AEC 305 Food and Agricultural Marketing Principles	3
ABT/ENT 360 Genetics	3
CS 101 Introduction to Computing I	3
ECO 201 Principles of Economics I	3
FSC 304 Animal Food Products	4
FSC 395 Special Problem in Food Science	1-4
FSC 399 Experiential Learning in Animal Sciences/Food Science	1-6
FSC 430G Sensory Evaluation of Foods	3
FSC 538 Food Fermentation and Thermal Processing	4
FSC 540 Food Sanitation	3
DHN 304 Experimental Foods	3

Subtotal: Specialty Support 22

Electives

Elective courses should be selected by the student to lead to the minimum total of 128 hours required for graduation.

Subtotal: Electives minimum of 15

TOTAL HOURS: 128