

ADD, CHANGE OR DELETE UNIT, PROGRAM REQUIREMENTS, OR ACADEMIC POLICIES

Complete this form consistent with the instructions in Academic Policy 1622.20. Use the form to add, change, or delete a program or unit or to change program policies. Proposed additions and changes must be consistent with Academic Policies 1100.40 and 1621.10 and any other policies which apply.

SECTION I: Approvals

Department / Program Chair	Date Submitted	Graduate Council Chair	Date
College Dean	Date	Faculty Senate Chair	Date
Honors College Dean	Date	Provost	Date
Core Curriculum Committee	Date	Board of Trustees Approval/Notification Date	
University Course and Programs Committee	Date	Arkansas Higher Education Coordinating Board Approval/Notification Date	

SECTION II: Profile Data - Required Information and Name Change Information

Academic Unit: Major/Field of Study Minor Other Unit Food Technology Conc. Policy
 Level: Undergraduate Graduate Law Effective Catalog Year 2011

Program changes are effective with the next available catalog. See Academic Policy Series 1622.20

Current Name BSA, Food Science - Food Technology Concentration

College, School, Division AFLS

Department Code FDSC

Current Code (6 digit Alpha) FDSCBS

Proposed Code (6 digit Alpha) _____

Prior approval from the Office of the Registrar is required.

Interdisciplinary Program

CIP Code 01.1001

Prior assignment from Office of Institutional Research is required.

Proposed Name _____

When a program name is changed, enrollment of current students reflects the new name.

SECTION III: Add a New Program/Unit

For new program proposals, complete Sections II and VII and use as a cover sheet for a full program proposal as described in 'Criteria and Procedures for Preparing Proposals for New Programs in Arkansas.' ADHE
http://www.adhe.edu/divisions/academicaffairs/Pages/aa_academicproposals.aspx

Program proposal uses courses offered by another academic college, and that college dean's office has been notified. The signature of the dean of that academic college is required here: _____

SECTION IV: Eliminate an Existing Program/Unit

Code/Name _____ Effective Catalog Year _____

No new students admitted to program after Term: ____ Year: _____

Allow students in program to complete under this program until Term: ____ Year: _____

SECTION V: Proposed Changes to an Existing Program or Program Policies

Insert here a statement of the exact changes to be made: 1) Students will be required to declare a minor in AGBS, GBUS or GFNU. 2) MATH 2053 Finite Math will be designated for AGBS-m and GBUS-m students only. 3) Add requirement of CHEM 3813 Introduction to Biochem designated for GFNU-m students only. 4) Social Science core will now state to choose three from the following courses, one course must be outside AGECE/ECON discipline. Students pursuing AGBS-m must choose AGECE 1103. Students pursuing GBUS-m must choose ECON 2143 or (ECON 2013 and ECON 2023). 5) Addition of statement to complete one of the following options - AGBS-m, GBUS-m or GFNU-m. 6) For students pursuing AGBS-m addition of requirement of AGECE 2303 Introduction of Agribusiness. 7) For students pursuing GFNU-m addition of the following courses: HESC 1213 Nutrition in Health, HESC 2112/2111L Foods I and lab, HESC 3203 Nutrition for Health Professionals and Educators, HESC 4213 Advanced Nutrition and completion of two of the following courses: HESC 2203 Nutrition for Exercise and Sport, HESC 4223 Nutrition During the Life Cycle, HESC 4243 Community Nutrition. 8) change in number of elective hours to 15-24.

Check if either of these boxes apply and provide the necessary signature:

- Program change proposal adds courses offered by another academic college, and that college dean's office has been notified. The signature of the dean of that academic college is required here: _____
- Program change proposal deletes courses offered by another academic college, and that college dean's office has been notified. The signature of the dean of that academic college is required here: _____

Check all the boxes that apply and complete the required sections of the form:

- Change of Name and Code (Complete only sections I, II, V and VII.)
- Change Course Requirements: (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
- Change Delivery Site/Method (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
- Change Total Hours (Complete all sections of the form except "Proposed Name" in II, section III, and section IV.)
- Change in Program Policies

SECTION VI: Justification

Justify this change and state its likely effect on any other degree program (including those outside the school or college). Identify any program or program components (other than courses) to be eliminated if this program is implemented. (Program and course change forms must also be submitted for such related changes.)

The focus of the Food Technology Concentration is to prepare students for careers in the food industry. The current requirements include the courses required for a minor in AGBS or GBUS. With the rising concerns about obesity and other related health issues, there is a definite need in the food industry for professionals with the educational background necessary to develop and produce foods directed towards addressing these issues. These changes to the Food Technology concentration will more readily provide students with the interdisciplinary background and skills necessary for careers directed towards improving the nutritional value of food through product development and production.

SECTION VII: Catalog Text and Format

In the box below, insert the current catalog text which is to be changed, with changes highlighted with the color yellow. Include all proposed changes identified in Section V. Only changes explicitly stated in Section V will be considered for approval by the University Course and Programs Committee, the Graduate Council and the Faculty Senate. If you are proposing a new program, give proposed text with all of the elements listed below. If you are proposing modified text, include these elements as appropriate.

Include the following elements, in order, in the catalog text for proposed undergraduate program(s) or program changes:

- State complete major/program name
- Briefly define or describe the major/program or discipline.
- Identify typical career goals or paths for graduates. (Optional)
- State admission requirements (if any) for entry or entry into upper/advanced level of major/program.
- Identify location in catalog of university, college/school, and department/program requirements which the student must meet in addition to hours in the major, but do not restate these requirements.
- State course requirements in the major and any allied areas, giving number of hours and specific courses; specify electives or elective areas and give numbers of hours and courses in elective pools or categories; identify any other course requirements.
- State any other requirements (required GPA, internship, exit exam, project, thesis, etc.).
- Identify name and requirements for each concentration (if any).
- Specify whether a minor or other program component is allowed or required and provide details.
- State eight-semester plan requirements

For minors, state requirements in terms of hours, required courses, electives, etc.

For graduate program/units, include elements (as needed) parallel to those listed for undergraduate programs above.

For Law School program/units, prepare text consistent with current catalog style.

For centers, prepare text consistent with current catalog style.

FOOD SCIENCE (FDSC)

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FACULTY

- University Professors Hettiarachachy, Siebenmorgen
- Professors Buescher, Crandall, Howard, Meullenet, Proctor, Ricke, Wang
- Assistant Professors Lee, Morawicki
- Research Assistant Professor Lingbeck
- Adjunct Faculty Members Ahn, Apple (N.), Brady, Chalova-Zhekova, Devareddy, Foote, King, Li, Marcy, Morris (M.), Owens-Hanning, Pohlman, Prior

Food science is the application of science and technology to processing, packaging, safety, product invention and distribution of food products. Food science deals with all aspects of food between production and consumption and involves many disciplines, including chemistry, microbiology, nutrition, engineering and sensory science.

Food science prepares students for many interesting, rewarding and challenging professional career opportunities in industry, business, governmental and educational organizations associated with food and food-related products. Due to the diversity and abundance of opportunities available, students graduating with a B.S.A. in food science readily obtain employment or continue studies for graduate school. Additionally, requirements for several pre-professional programs can be fulfilled while meeting requirements for the food science degree.

Students may choose one of two areas of concentration for their degree program: Food Science (FDSC) or Food Technology (FDTN). The FDSC concentration at the University of Arkansas is one of only 36 programs in the United States and the only one in Arkansas that is approved by the Institute of Food Technologists. It provides students with a strong background in basic and applied sciences and food chemistry, microbiology, analysis, quality and engineering.

The FDTN concentration provides students interested in food ~~business and management~~ industry careers with an integrated background in food science and business or nutrition. ~~With proper course selection,~~ Students in the food technology concentration can will complete a minor in agribusiness, ~~or~~ general business or nutrition while completing their core requirements, thus leaving elective hours available for further educational enhancement.

Students in both concentrations are offered opportunities for research, internships, international experiences and selection of a minor.

Requirements for a Major in Food Science (FDSC)

State minimum core and discipline specific general education requirements:

(Course work that meets state minimum core requirements is in **bold**.)

Communications (6-12 hours)

__ Choose from **English Core** courses (6 hours)

__ COMM 1313 Fundamentals of Communication

FDSC Concentration:

__ ENGL 3053 Technical and Report Writing or

AGED 3142/3141L Agri Communications and lab

FDTN Concentration:

__ AGED 3142/3141L Agri Communications and lab

U.S. History and Government (3 hours)

Choose from **U.S. History Core** courses

Mathematics and Statistics (~~12~~9-13 hours)

__ Choose from **MATH Core** course

FDSC Concentration:

__ MATH 1213 Plane Trigonometry

__ MATH 2554 Calculus I

__ STAT 2303 Principles of Statistics or STAT 2023 Biostatistics or PSYC 2013 Intro to Statistics for Psychologists or AGST 4023 Principles of Experimentation

FDTN Concentration:

__ MATH 2043 Survey of Calculus

__ MATH 2053 Finite Mathematics ([for students declaring AGBS and GBUS minors only](#))

__ AGECE 2403 Quantitative Tools for Agribusiness or WCOB 1033 Data Analysis and Interpretation or STAT 2303 Principles of Statistics or AGST 4023 Principles of Experimentation

Sciences (20-27 hours)

__ **BIOL 1543/1541L** Principles of Biology and lab

__ BIOL 2013/2011L General Microbiology and lab

__ **CHEM 1103/1101L** University Chemistry I and lab

__ **CHEM 1123/1121L** University Chemistry II and lab

FDSC Concentration:

__ CHEM 2613/2611L Organic Physiological Chemistry and lab or CHEM 3603/3601L Organic Chemistry I and lab

__ CHEM 3813 Introduction to Biochemistry

__ PHYS 2013/2011L College Physics I and lab

FDTN Concentration:

__ CHEM 2613/2611L Organic Physiological Chemistry and lab

__ [CHEM 3813 Introduction to Biochemistry \(for students declaring GFNU minor only\)](#)

Fine Arts and Humanities (6 hours)

__ Choose **Fine Arts, Humanities Core** courses

Social Sciences (9 hours)

~~FDSC Concentration:~~

__ Choose from **Social Sciences Core** courses (9 hours)

~~FDTN Concentration:~~

~~__ Select **AGECE 1103** Agricultural Microeconomics or **ECON 2143** Basic Economics-Theory & Practice~~

~~__ Choose from **Social Science Core** courses (6 hours)~~

[Students declaring AGBS minor must take AGECE 1103 Agricultural Microeconomics and students declaring GBUS minor must take ECON 2143 Basic Economics-Theory & Practice or both ECON 2013 Macroeconomics and ECON 2023 Microeconomics](#)

FDSC Degree Requirements (21 hours)

__ AFSL 1011 Freshman Orientation

__ FDSC 1011 Food Science Orientation

__ FDSC 1103 Introduction to Food Science

__ FDSC 3103 Principles of Food Processing with lab component

__ FDSC 4203 Quality Evaluation and Control with lab component

__ FDSC 4304 Food Chemistry with lab component

__ FDSC 4413 Sensory Evaluation of Food with lab component

__ FDSC 4713 Food Product & Process Development with lab component

General Electives (~~18~~5-24 hours)

Additional Requirements for Food Science Concentration (15 hours)

__ HESC 1213 Nutrition in Health

__ FDSC 4114 Food Analysis with lab component

__ FDSC 4123/4121L Food Microbiology and lab

__ FDSC 4754 Engineering Principles of Food Processing with lab component

Additional Requirements for Food Technology Concentration (20-23 hours)

- __ FDSC 2503 Food Safety and Sanitation
- __ FDSC 3202 Introduction to Food Law
- __ FDSC 431V (3 hours) Internship in Food Science

Complete one of the following options (students must declare chosen minor with Bumpers College Dean's Office):

Option 1: Agribusiness minor (AGBS-m)

- __ WCOB 1120 Computer Competency Requirement (AGME 2903 may be taken instead, but hours will be counted toward elective hours)
- __ AGEC 2142/2141L Agribusiness Financial Records and lab **or**

~~WCOB 1023 Business Foundations~~

__ AGEC 2303 Introduction to Agribusiness

- __ AGEC 4313 Agricultural Business Management **or**

~~MGMT 3563 Management Concepts & Organizational Behavior~~

- __ AGEC 3303 Food and Agricultural Marketing **or**

~~MKTG 3433 Introduction to Marketing Strategy~~

~~Choose 6 hours of business coursework from the departmental codes: ACCT, AGEC, ECON, FINN, ISYS, MGMT, MKTG, TLOG or WCOB~~

3000-4000 level business course chosen from departmental codes: ACCT, AGEC, ECON, FINN, ISYS, MGMT, MKTG, TLOG or

WCOB

Option 2: General Business minor (GBUS-m)

WCOB 1120 Computer Competency Requirement

WCOB 1023 Business Foundations

MGMT 3563 Management Concepts and Organizational Behavior

MKTG 3433 Introduction to Marketing Strategy

3000-4000 level Walton College course (chosen from departmental codes: ACCT, ECON, FINN, ISYS, MGMT, MKTG, TLOG or

WCOB

3000-4000 level Walton College course (chosen from departmental codes: ACCT, ECON, FINN, ISYS, MGMT, MKTG, TLOG or

WCOB

Option 3: Nutrition minor (GFNU-m)

HESC 1213 Nutrition in Health

HESC 2112 & 2111L Foods I and lab

HESC 3203 Nutrition for Health Professionals and Educators

HESC 4213 Advanced Nutrition

Choose two from the following courses

HESC 2203 Nutrition for Exercise and Sport

HESC 4223 Nutrition During the Life Cycle

HESC 4243 Community Nutrition

124 Total Hours

Food Science B.S.A., Food Science Concentration

Eight-Semester Degree Program

Students wishing to follow the degree plan in Food Science should see page 42 in the Academic Regulations chapter for university requirements of the program.

Fall Semester Year 1

- 4 Science University Core BIOL 1543/1541L Principles of Biology and lab
- 3 University Core MATH 1203 College Algebra
- 3 University Core ENGL 1013 Composition I unless exempt
- 1 AFLS 1011 Freshman Orientation
- 1 FDSC 1011 Food Science Orientation
- 3 University Core in Fine Arts/Humanities or Social Science or History

15 Semester hours
Spring Semester Year 1
3 FDSC 1103 Introduction to Food Science 3 CHEM 1103 University Chemistry I 3 University Core ENGL 1023 Composition II unless exempt 3 University Core in Fine Arts/Humanities or Social Science or History 3 MATH 1213 Plane Trigonometry 15 Semester hours
Fall Semester Year 2
4 Science University Core CHEM 1123/1121L University Chemistry II and lab 1 CHEM 1101L University Chemistry I lab (Credit earned when CHEM 1121L is completed with grade of "C" or better) 4 MATH 2554 Calculus I 3 COMM 1313 Fundamentals of Communication 3 University Core in Fine Arts/Humanities or Social Science or History 15 Semester hours
Spring Semester Year 2
4 CHEM 2613/2611L Organic Physiological Chemistry and lab 3 University Core in Fine Arts/Humanities or Social Science or History 3 Statistics Elective 4 BIOL 2013/2011L General Microbiology and lab 3 HESC 1213 Nutrition in Health 17 Semester hours
Fall Semester Year 3
6-7 FDSC 3103 Principles of Food Processing with lab component and FDSC 4203 Quality Evaluation Control with lab component (even years) or FDSC 4413 Sensory Evaluation of Food with lab component and FDSC 4304 Food Chemistry with lab component (odd years) 3 University Core in Fine Arts/Humanities or Social Science or History 3 General Elective 4 PHYS 2013/2011L College Physics I and lab 16-17 Semester hours
Spring Semester Year 3
6 General Electives 3-4 FDSC 4123/4121L Food Microbiology and lab (even years) OR FDSC 4713 Food Product and Process Development with lab component (odd years) 4 FDSC 4754 Engineering Principles of Food Processing with lab component (odd years) or FDSC 4114 Food Analysis with lab component (even years) 3 AGED 3142/3141L Agri Communications and lab or ENGL 3053 Technical and Report Writing 16-17 Semester hours
Fall Semester Year 4
6-7 FDSC 3103 Principles of Food Processing with lab component and FDSC 4203 Quality Evaluation and Control with lab component (even years) or FDSC 4413 Sensory Evaluation of Food with lab component and FDSC 4304 Food Chemistry with lab component (odd years) 3 General Elective 3 CHEM 3813 Introduction to Biochemistry 3 General Elective 15-16 Semester hours
Spring Semester Year 4
3-4 FDSC 4123/4121L Food Microbiology and lab (even years) OR FDSC 4713 Food

Product and Process Development with lab component (odd years)

3 University Core in Fine Arts/Humanities or Social Science or History

3 General Elective

4 FDSC 4114 Food Analysis with lab component (even years) or FDSC 4754 Engineering Principles of Food Processing with lab component (odd years)

13-14 Semester hours

124 Total hours

Food Science B.S.A., Food Technology Concentration

Nine-Semester Degree Program

Students wishing to follow the degree plan in Food Science should see page 42 in the Academic Regulations chapter for university requirements of the program.

Fall Semester Year 1

4 Science University Core BIOL 1543/1541L Principles of Biology and lab

3 University Core MATH 1203 College Algebra

3 University Core ENGL 1013 Composition I unless exempt

1 AFLS 1011 Freshman Orientation

1 FDSC 1011 Food Science Orientation

3 University Core in Fine Arts/Humanities or Social Science or History

15 Semester hours

Spring Semester Year 1

3 FDSC 1103 Introduction to Food Science

3 CHEM 1103 University Chemistry I

3 University Core ENGL 1023 Composition II unless exempt

3 University Core in ~~Fine Arts/Humanities or Social Science or History~~ [\(business minors must choose AGEC 1103 Ag Microeconomics or ECON 2143 Basic Economics-Theory & Practice](#)

~~3- AGEC 1103 Ag Microeconomics or ECON 2143 Basic Economics-Theory & Practice~~

3 COMM 1313 Fundamentals of Communication

0 WCOB 1120 Computer Competency Requirement [\(business minors only\)](#)

~~18-15~~ **15 Semester hours**

Fall Semester Year 2

4 Science University Core CHEM 1123/1121L University Chemistry II and lab

1 CHEM 1101L University Chemistry I lab (Credit earned when CHEM 1121L is completed with grade of "C" or better)

~~3-6~~ [Business minors only - MATH 2053 Finite Mathematics and \(AGEC 2142/2141L Agribusiness Financial Records and lab or WCOB 1023 Business Foundations\)](#)

[Nutrition minors only – HESC 2112/2111L Foods I and lab and HESC 1213 Nutrition in Health](#)

3 FDSC 2503 Food Safety and Sanitation

~~3~~ [AGEC 2142/2141L Agribusiness Financial Records and lab or WCOB 1023 Business Foundations](#)

14 Semester hours

Spring Semester Year 2

4 CHEM 2613/2611L Organic Physiological Chemistry and lab

3 University Core in Fine Arts/Humanities or Social Science or History

3 Statistics Elective

3 MATH 2043 Survey of Calculus

3 General Elective

16 Semester hours

Fall Semester Year 3

<p>6-7 FDSC 3103 Principles of Food Processing with lab component and FDSC 4203 Quality Evaluation Control with lab component (even years) or FDSC 4413 Sensory Evaluation of Food with lab component and FDSC 4304 Food Chemistry with lab component (odd years)</p> <p>3 University Core in Fine Arts/Humanities or Social Science or History</p> <p>3 General Elective</p> <p>4 BIOL 2013/2011L General Microbiology and lab</p> <p>16-17 Semester hours</p>
<p>Spring Semester Year 3</p>
<p>2-3 FDSC 4713 Food Product and Process Development with lab component (odd years) or FDSC 3202 Introduction to Food Law (even years)</p> <p>6 <u>9</u> Business minors only – (AGEC 2303 Introduction to Agribusiness or Business Elective) and General Electives</p> <p>Nutrition minors only – CHEM 3813 Introduction to Biochemistry and HESC 3203 Nutrition for Health Professionals and Educators and General Electives</p> <p>3 <u>3</u> Business Elective</p> <p>3 University Core in Fine Arts/Humanities or Social Science or History (odd years)</p> <p>14-15 Semester hours</p>
<p>Summer Semester Year 3</p>
<p>3 FDSC 431V Internship in Food Science</p> <p>3 Semester hours</p>
<p>Fall Semester Year 4</p>
<p>6-7 FDSC 3103 Principles of Food Processing with lab component and FDSC 4203 Quality Evaluation and Control with lab component (even years) or FDSC 4413 Sensory Evaluation of Food with lab component and FDSC 4304 Food Chemistry with lab component (odd years)</p> <p>3 General Elective</p> <p>6 <u>6</u> Business minors only – (AGEC 4313 Agricultural Business Management or MGMT 3563 Management Concepts and Organizational Behavior) and (AGEC 3303 Food and Agricultural Marketing or MKTG 3433 Principles of Marketing)</p> <p>Nutrition minors only – HESC 4213 Advanced Nutrition and HESC 4223 Nutrition During the Life Cycle</p> <p>3 <u>3</u> AGEC 3303 Food and Agricultural Marketing or MKTG 3433 Intro to Marketing Strategy</p> <p>15-16 Semester hours</p>
<p>Spring Semester Year 4</p>
<p>2-3 FDSC 4713 Food Product and Process Development with lab component (odd years) or FDSC 3202 Introduction to Food Law (even years)</p> <p>3 University Core in Fine Arts/Humanities or Social Science or History</p> <p>3 General Elective</p> <p>3 AGED 3142/3141L Agri Communications and lab</p> <p>3 Business minors only - Business Electives</p> <p>Nutrition minors only – HESC 2203 Nutrition for Exercise and Sport or HESC 4243 Community Nutrition</p> <p>13-15 Semester hours</p> <p>124 Total hours</p>

Minor in Food Science (FDSC-M)

The Food Science Minor consists of 18 semester hours to include:

- ___ FDSC 3103 Principles of Food Processing with lab component
- ___ FDSC 4123/4121L Food Microbiology and lab
- ___ FDSC 4304 Food Chemistry with lab component

Choose 7 hours from:

- FDSC 2503 Food Safety and Sanitation
- FDSC 3202 Introduction to Food Law
- FDSC 4114 Food Analysis with lab component
- FDSC 4203 Quality Evaluation and Control with lab component
- HESC 1213 Nutrition in Health

A student planning to minor in food science must consult a Department of Food Science adviser.

See Page 345 for Food Science (FDSC) courses.

SECTION VIII: Action Recorded by Registrar's Office

PROGRAM INVENTORY/DARS

PGRM _____ SUBJ _____ CIP _____ CRTS _____
DGRE _____ PGCT _____ OFFC&CRTY VALID _____

REPORTING CODES

PROG. DEF. _____ REQ. DEF. _____
Initials _____ Date _____

Distribution

Notification to:

- (1) College
- (2) Department
- (3) Admissions
- (4) Institutional Research
- (5) Continuing Education
- (6) Graduate School
- (7) Treasurer
- (8) Undergraduate Program Committee

5/12/08