**Food Science - Fermentation Science Major (Plan of Study)**

**Required Major Courses (28 credits)**

- (3) FS 16100 Science of Food
- (3) FS 16300 Introduction to Fermentation Sciences 
- (1) FS 29800 Sophomore Seminar
- (2) FS 34100 Food Processing I
- (1) FS 36100 Food Plant Sanitation
- (3) FS 37200 Fermentation Microbiology
- (1) FS 37300 Fermentation Microbiology Lab
- (2) FS 40100 Fermentation Processing
- (1) FS 40200 Fermentation Processing Lab
- (3) FS 48300 Fermentation Capstone (Capstone)
- (1) FS 44400 Statistical Process Control
- (1) FS 48200 Senior Seminar
- (1) Fermentation Products Selective
- (5) General Fermentation Selectives

**Other Departmental/Program Course Requirements (85-86 credits)**

- (2) ABE 22600 Biotechnology Laboratory I ♦
- (2) ABE 22700 Biotechnology Laboratory II ♦
- (0.5) AGR 10100 Introduction to the College of Agriculture and Purdue University
- (0.5) AGR 11800 Introduction to Food Science Programs
- (3) BCHM 30700 Biochemistry ♦
- (1) BCHM 30900 Biochemistry Lab
- (4) BIOL 11000 Fundamentals of Biology I ♦
- (4) BIOL 11100 Fundamentals of Biology II ♦
- (3) BIOL 23100 Biology III: Cell Structure and Function ♦
- (3) BIOL 24100 Biology IV: Genetics and Molecular Biology ♦
- (3) BIOL 43800 ♦ or FS 36200 ♦ Food Microbiology
- (2) BIOL 43900 ♦ or FS 36300 ♦ Food Microbiology Lab
- (4) CHM 11500 ♦ General Chemistry (Satisfies Science #1 for core)
- (4) CHM 11600 ♦ General Chemistry (Satisfies Science #2 for core)
- (4) CHM 25700 ♦ Organic Chemistry
- (1) CHM 25701 Organic Chemistry Lab
- (4) CHM 32100 Analytical Chemistry I
- (3) COM 11400 Fundamentals of Speech Communication or COM 21700 Scientific Writing and Presentation or EDPS 31500 Collaborative Leadership: Listening or SCLA 10200 Transformative Texts, Critical Thinking and Communication II (satisfies Oral Communication for core)
- (3) Economics selective (satisfies Human Cultural Behavioral/Social Science for core)
- (3-4) First-Year Composition Selective (satisfies Written Communication/Information Literacy Selective for core)
- (3) Humanities Selective
- (3) Humanities or Social Science Selective
- (3) Humanities or Social Science Selective (30000+ level)
- (3) MA 16010 Applied Calculus I (satisfies Quantitative Reasoning for core)
- (3) MA 16020 Applied Calculus II
- (4) PHYS 22000 ♦ General Physics
- (3) Professional Communications Selective
- (3) STAT 30100 Elementary Statistical Methods (satisfies Information Literacy for core)
- (3) UCC Humanities (satisfies Human Cultural Humanities for core)
- (3) Written/oral communications selective 20000+ ♦

**Electives (6-7 credits)**

**University Core Requirements**
- **Human Cultures Humanities**
- **Human Cultures Behavioral/Social Science**
- **Information Literacy**
- **Science Selective**
- **Science Selective**

**College of Agriculture & University Level Requirements**

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<tr>
<th>Requirement</th>
<th>Credits</th>
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<td>3 credits Multicultural Awareness</td>
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<tr>
<td>9 credits International Understanding</td>
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<tr>
<td>9 credits of Hum. And/or Social Sciences outside the College of Agriculture</td>
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<tr>
<td>3 credits of Hum. And/or Social Science at 30000 or higher</td>
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</table>
## Food Science: Fermentation Science Major

### Suggested Arrangement of Courses:

<table>
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<tr>
<th>Credits</th>
<th>Semester 1</th>
<th>Prerequisite</th>
<th>Credits</th>
<th>Semester 2</th>
<th>Prerequisite</th>
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<td>AGR 10100 Introduction to the College of Agriculture and Purdue University</td>
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<td>FS 16300 Introduction to Fermentation Sciences ♦</td>
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<td>0.5</td>
<td>AGR 11800 Introduction to Food Science Programs</td>
<td>4</td>
<td>BIOL 11100 Fundamentals of Biology II ♦</td>
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<td>CHM 11600 General Chemistry ♦</td>
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<td>MA 16020 Applied Calculus II</td>
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<td>3</td>
<td>BIOL 23100 Biology III ♦</td>
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<td>BIOL 24100 Biology IV ♦</td>
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<td>CHM 25700 Organic Chemistry ♦</td>
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<th>Semester 6</th>
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<tr>
<td>2</td>
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<td>PHYS 22000 General Physics ♦</td>
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<td>FS 36100 Food Plant Sanitation CHM, BIOL</td>
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<td>3</td>
<td>BIOL 43800 or FS 36200 Food Microbiology ♦ (BIOL 23100 and 24100 and BCHM 30700); (BIOL 22100 or BIOL 24100 and BCHM 30700)</td>
<td>3</td>
<td>COM 11400 Fundamentals of Speech Communication/ COM 21700 Scientific Writing and Presentation/ EDPS 31500 Collaborative Leadership: Listening or SCLA 10200 Transformative Texts, Critical Thinking &amp; Communication II</td>
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<td>BIOL 43900 or FS 36300 Food Microbiology lab ♦ (co:BIOL 43800); (BCHM 30900 and co: FS 36200)</td>
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<th>Semester 8</th>
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<tr>
<td>1</td>
<td>FS 48200 Senior Seminar</td>
<td>3</td>
<td>FS 48300 Fermentation Capstone (Capstone) FS 37200, FS 37300, FS 40100, FS 40200, FS 44400 and (CHM 32100 or FS 46700)</td>
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<td>FS 44400 Statistical Process Control STAT</td>
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<td>FS 34100 Food processing I CHM, MA, PHYS, co: FS 36200</td>
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<td>FS 40100 Fermentation Processing FS 37200, PHYS 22000, co:FS 34100</td>
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<td>CHM 32100 Analytical Chemistry I CHM 11600</td>
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1) 120 credits listed above are required for a Bachelor of Science degree.
2) 2.5 Graduation GPA required in FS Courses.
3) 4 Years are broken down into 30/60/90/120 credits per year (Financial Aid requirement).
4) Critical courses are identified with ♦ and capstone courses are identified with (Capstone)

See next page for all supplemental Information

**********************************************************************************************************************************************************************

The student is ultimately responsible for knowing and completing all degree requirements.
myPurdue Plan is knowledge source for specific requirements and completion
### University Core Curriculum Humanities Selective (3 credits)
See approved Humanities list at: [http://www.purdue.edu/provost/initiatives/curriculum/course.html](http://www.purdue.edu/provost/initiatives/curriculum/course.html)

### Humanities and Social Sciences Selectives (9 credits)
See approved list at: [https://ag.purdue.edu/oap/Pages/core_social-humanities.aspx](https://ag.purdue.edu/oap/Pages/core_social-humanities.aspx)

### Economics Selective (3 credits)
AGEC 20300 Introductory Microeconomics for Food and Agribusiness

AGEC 20400 Introduction to Resource Economics and Environmental Policy

ECON 25100 Microeconomics

ECON 21000 Principles of Economics

### Written or Oral Communication Selective (3 credits)
AGR 20100

EDPS 31500

ASEC 44000

### Composition Selection (3 - 4 credits)
ENGL 10600 First-Year Composition

ENGL 10800 Accel First-Yr Compos

HONR 19903 Interdisc Approach to Writing

### Professional Communication Selective (3 credits)
COM 21000 Debating Public Issues

COM 31400 Adv Presntatnl Spk

COM 32500 Interview Princ Prac

COM 42400 Com Intl Org

### Fermentation Products Selective (1 credit)
FS 38100 Industrial Fermentation Products

FS 38200 Fermented Food Products

FS 38300 Fermented Beverage Products

### General Fermentation Selectives (5 credits)
ABE 30400 Bioprocess Engineering Laboratory

ABE 51100 Drug Development

ABE 55800 Process Design for Food and Biological Systems

ABE 37000 Biological/Microbial Kinetics and Reaction Engineering

ABE 51200 Good Regulatory Process

ABE 59100 Principles of Systems and Synthetic Biology

ABE 44000 Cell and Molecular Design Principles

ABE 58000 Process Engineering of Renewable Resources

ANTH 25600 Archaeology of Beer

BME 20500 Biomolecular and Cellular Systems Laboratory

FS 49100 Crucial Metabolic Pathways in Food Fermentation

FS/HORT 50600 Commercial Grape and Wine Production

FS 45300 Food Chemistry

FS 45400 Food Chemistry Lab

FS 46700 Food Analysis

IPPH 56200 Introduction to Pharmaceutical Manufacturing Processes