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 (http://www.purdue.edu/provost/initiatives/curriculum/course.html)

Human Cultures Humanities	☐	*Science, Technology & Society Selective*	☐
Human Cultures Behavioral/Social Science	☐	*Written Communication*	☐
Information Literacy	☐	*Oral Communication*	☐
Science Selective	☐	*Quantitative Reasoning*	☐
Science Selective	☐		

College of Agriculture & University Level Requirements (https://ag.purdue.edu/oap/Pages/core_requirements.aspx)

3 credits Multicultural Awareness	☐		
9 credits International Understanding	☐	☐	☐
9 credits of Hum. And/or Social Sciences outside the College of Agriculture	☐	☐	☐
3 credits of Hum. And/or Social Science at 30000 or higher	☐		

Food Science: Fermentation Science Major

Suggested Arrangement of Courses:

Credits	Semester 1	Prerequisite
0.5	AGR 10100 Introduction to the College of Agriculture and Purdue University	
0.5	AGR 11800 Introduction to Food Science Programs	
4	BIOL 11000 Fundamentals of Biology I ♦	
3	FS16100 Science of Food	
4	CHM 11500 General Chemistry♦	
3	MA 16010 Applied Calculus I	
15		

Credits	Semester 2	Prerequisite
3	FS 16300 Introduction to Fermentation Sciences♦	
4	BIOL 11100 Fundamentals of Biology II♦	BIOL 11000
4	CHM 11600 General Chemistry ♦	CHM 11500
3	MA 16020 Applied Calculus II	MA 16010
1-2	Elective	
15-16		

Credits	Semester 3	Prerequisite
1	FS29800 Sophomore Seminar	
3	STAT 30100 Elementary Statistical Methods	
3	BIOL 23100 Biology III ♦	BIOL 11100 and CHM 11600
4	CHM 25700 Organic Chemistry♦	CHM 11600
1	CHM 25701 Organic Chemistry Lab	Co: CHM 25700
2	ABE 22600 Biotechnology Laboratory I♦	
14		

Credits	Semester 4	Prerequisite
3	BCHM 30700 Biochemistry♦	CHM 25700
1	BCHM 30900 Biochemistry Lab	CHM 25700
3	BIOL 24100 Biology IV♦	CHM 116 and BIOL 23100
3-4	First Year Composition Selective	
2	ABE 22700 Biotechnology Laboratory II♦	ABE 22600
3	Economics Selective	
15-16		

Credits	Semester 5	Prerequisite
2	Fermentation Selective	
1	FS 36100 Food Plant Sanitation	CHM, BIOL
3	BIOL 43800 or FS 36200 Food Microbiology♦	(BIOL 23100 and 24100 and BCHM 30700); (BIOL 22100 or BIOL 24100 and BCHM 30700)
2	BIOL 43900 or FS 36300 Food Microbiology lab♦	(co:BIOL 43800); (BCHM 30900 and co: FS 36200)
3	Humanities Selective	
1	Elective	
3	UCC Humanities	
15		

Credits	Semester 6	Prerequisite
4	PHYS 22000 General Physics ♦	
3	Written/Oral Communication Selective	
3	COM 11400 Fundamentals of Speech Communication/ COM 21700 Scientific Writing and Presentation/ EDPS 31500 Collaborative Leadership: Listening or SCLA 10200 Transformative Texts, Critical Thinking & Communication II	
3	FS 37200 Fermentation Microbiology	BIOL 43800 or FS 36200
1	FS 37300 Fermentation Microbiology Lab	co: FS 37200
1	Fermentation Products selective	
15		

Credits	Semester 7	Prerequisite
1	FS 48200 Senior Seminar	
1	FS 44400 Statistical Process Control	STAT
2	FS 34100 Food processing I	CHM, MA, PHYS, co: FS 36200
2	FS 40100 Fermentation Processing	FS 37200, PHYS 22000, co:FS 34100
1	FS 40200 Fermentation Processing Lab	co: FS 40100
4	CHM 32100 Analytical Chemistry I	CHM 11600
3	Professional Communication Selective	
1	Elective	
15		

Credits	Semester 8	Prerequisite
3	FS 48300 Fermentation Capstone (Capstone)	FS 37200, FS 37300, FS 40100, FS 40200, FS 44400 and (CHM 32100 or FS 46700)
3	Humanities or Social Science Selective	
3	Humanities or Social Science Selective (30000+ level)	
3	Fermentation Selective	
3	Electives	
15		

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 ♦ andcapstone courses are identified with (Capstone)

See next page for all supplemental Information

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The student is ultimately responsible for knowing and completing all degree requirements.
myPurdue Plan is knowledge source for specific requirements and completion

Food Science – Fermentation Science Major Supplemental Information

University Core Curriculum Humanities Selective (3 credits)
See approved Humanities list at: 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

Economics Selective (3 credits)

AGEC 20300 Introductory Microeconomics for Food and Agribusiness	AGEC 21700 Economics	ECON 25100 Microeconomics
AGEC 20400 Introduction to Resource Economics and Environmental Policy	ECON 21000 Principles of Economics	ECON 25200 Macroeconomics

Written or Oral Communication Selective (3 credits)

AGR 20100	ASL 10000:59999	COM 20000:59999
EDPS 31500	ENGL 20000:59999	ENTM 201000
ASEC 44000		

Composition Selection (3 - 4 credits)

ENGL 10600 First-Year Composition	ENGL 10800 Accel First-Yr Compos	SCLA 10100 Crit Think & Com I
HONR 19903 Interdisc Approach to Writing		

Professional Communication Selective (3 credits)

COM 21000 Debating Public Issues	COM 22400 Com Global Workplace	COM 25200 Writing For Mass Media
COM 31400 Adv Presntatnl Spk	COM 31500 Spe Commun Tech Info	COM 32000 Small Group Communication
COM 32500 Interview Princ Prac	COM 37400 Soc Int Skls: Asmt/Dev	COM 41500 Discuss Tech Problem
COM 42400 Com Intl Org	ENGL 30400 Advanced Composition	ENGL 41900 Multimedia Writing
ENGL 42000 Business Writing	ENGL 42100 Technical Writing	ENGL 43300 Proposals and Grants
NUTR 42400 Com Tech In Fd & Nutr		

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 47000 Wine Appreciation	FS 53000 Food Ingredient Technology
FS 45400 Food Chemistry Lab	FS 49100 Anaerobic Microbiology	FS 59100 Microbial Genomics and Metabolism
FS 46700 Food Analysis	FS 46900 Food Analysis Lab	GER 28000 Beer and Brewing in Germany
IPPH 56200 Introduction to Pharmaceutical Manufacturing Processes		