

BIOLOGICAL SYSTEMS ENGINEERING: FOOD AND BIOPROCESS ENGINEERING

REQUIREMENTS

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Code	Title	Credits
Major Requirements		
Common Requirements		53
Specialization Technical Electives		43
Capstone		5
Total Credits		101

COMMON REQUIREMENTS

See Major Requirements (<http://guide.wisc.edu/undergraduate/agricultural-life-sciences/biological-systems-engineering/biological-systems-engineering-bs/#requirementstext>).

FOOD & BIOPROCESS ENGINEERING SPECIALIZATION

This is a named option that will appear on the student's transcript upon completion.

Code	Title	Credits
CHEM 341	Elementary Organic Chemistry	3
or CHEM 343	Organic Chemistry I	
M E 361	Thermodynamics ¹	3
or CBE 310	Chemical Process Thermodynamics	
M E 363	Fluid Dynamics ¹	3-4
or CBE 320	Introductory Transport Phenomena	
BSE 464	Heat and Mass Transfer in Biological Systems	3
Select one of the following:		18-20
Food Engineering Track		
Bioprocess Engineering Track		
Total Credits		30-33

¹ Take BSE 249 and M E 361 and M E 363, or take CBE 250 and CBE 310 and CBE 320.

Food Engineering Track

Code	Title	Credits
FOOD SCI 301	Introduction to the Science and Technology of Food	3
FOOD SCI/ MICROBIO 325	Food Microbiology	3
FOOD SCI 532	Integrated Food Manufacturing	4

BSE 364	Engineering Properties of Food and Biological Materials	3
BSE 461	Food and Bioprocessing Operations	3
Select one of the following BSE breadth courses:		2-3
BSE 301	Land Information Management	
BSE/ ENVIR ST 367	Renewable Energy Systems	
BSE/CIV ENGR/ SOIL SCI 372	On-Site Waste Water Treatment and Dispersal	
BSE 405	Artificial Intelligence in Agriculture	
BSE 460	Biorefining: Energy and Products from Renewable Resources	
BSE 472	Sediment and Bio-Nutrient Engineering and Management	
BSE 473	Water Management Systems	
BSE/M E 475	Engineering Principles of Agricultural Machinery	
BSE/M E 476	Engineering Principles of Off-Road Vehicles	
BSE 571	Small Watershed Engineering	

Total Credits **18-19**

Bioprocess Engineering Track

Code	Title	Credits
MICROBIO 102	General Microbiology Laboratory	2
or MICROBIO 304	Biology of Microorganisms Laboratory	
BIOCHEM 501	Introduction to Biochemistry	3
BSE 364	Engineering Properties of Food and Biological Materials	3
BSE/ENVIR ST 367	Renewable Energy Systems	3
BSE 460	Biorefining: Energy and Products from Renewable Resources	3
BSE 461	Food and Bioprocessing Operations	3
Select one of the following BSE breadth courses:		2-3
BSE 301	Land Information Management	
BSE/CIV ENGR/ SOIL SCI 372	On-Site Waste Water Treatment and Dispersal	
BSE 472	Sediment and Bio-Nutrient Engineering and Management	
BSE 473	Water Management Systems	
BSE/M E 475	Engineering Principles of Agricultural Machinery	
BSE/M E 476	Engineering Principles of Off-Road Vehicles	
BSE 571	Small Watershed Engineering	

Total Credits **19-20**

TECHNICAL ELECTIVES

See Major Requirements (<http://guide.wisc.edu/undergraduate/agricultural-life-sciences/biological-systems-engineering/biological-systems-engineering-bs/#requirementstext>).

CAPSTONE

See Major Requirements (<http://guide.wisc.edu/undergraduate/agricultural-life-sciences/biological-systems-engineering/biological-systems-engineering-bs/#requirementstext>).