

Recommended course plan for BSE students interested in careers in
FOOD ENGINEERING
 (128 - 132 credits)

Fall 1st Year 16 cr.	Chem 1035 (3) General Chemistry ⁵	Chem 1045 (1) General Chemistry Lab ⁵	MATH 1225 (4) Calculus for Science ⁵	ENGE 1215 (2) Foundations of Engineering ⁵	ENGL 1105 (3) First-Year Writing ⁵	Pathways (3)		
Spring 1st Year 16 cr.	CHEM 1036 (3) General Chemistry ⁵ Pre: CHEM 1035 Spring, Summer	ENGL 1106 (3) Freshman English ⁵ Pre: ENGL 1105	PHYS 2305 (4) Foundations of Physics ⁵ Pre: MATH 1225 Co: MATH 1226	MATH 1226 (4) Calculus for Science ⁵ Pre: MATH 1225	ENGE 1216 (2) Exploration of Engineering Design ⁵ Pre: ENGE 1215			
Fall 2nd Year 18 cr.	MATH 2114 (3) Intro to Linear Algebra Pre: Math 1225 (min. grade B) or MATH 1226	MATH 2204 (3) Multivariable Calculus Pre: Math 1226	ESM 2104 (3) Statics Pre: MATH 1226	BIOL 1105 (3) Principles of Biology Fall, Summer 1	BSE 2004 (3) Intro to BSE Pre: ENGE 1215 Fall Only	Pathways (3)		
Spring 2nd Year 18 cr.	MATH 2214 (3) Differential Equations ⁵ Pre: MATH 2114 & 1226	Engineering Topics Elective (3)	BIOL 1106 (3) Principles of Biology Spring, Summer	BSE 3144 (2) Engr Analysis for Biol Systems Co: MATH 2214 Spring Only	PHYS 2306 (4) Foundations of Physics Pre: MATH 1226, PHYS 2305	Pathways (3)		
Fall 3rd Year 14 or 16 cr.	ESM 3024 (3) Intro Fluid Mechanics Pre: ESM 2104, PHYS 2305 Fall Only	BSE 3154 (3) Thermodynamics of Biol. Systems Pre: CHEM 1036, PHYS 2305 Fall Only	STAT 3704 (2) Statistics for Engineering Applications Pre: MATH 2204	**BSE 3984 (2) Synthetic Biology CURE Lab ^{1,4}	CHEM 2535 (3) Organic Chemistry ² Fall, Spring, Summer	Pathways (3)		
Spring 3rd Year 18 cr.	BIOL 2604 (3) General Microbiology Pre: BIOL 1105, 1106, CHEM 1035, 1036	BSE 3504 (3) Transport Processes Pre: BSE 3154, ESM 3024 Spring Only	BSE 3524 (3) Unit Operations ¹ Spring Only Co: BSE 3504 & BSE 3534	BSE 3534 (3) Bioprocess Engineering ¹ Pre: BSE 3154 Spring Only	ISE 3034 (3) Technical Communication for Engineers ⁵ Spring Only	BCHM 2024 (3) Concepts Biochem ⁴ Pre: CHEM 2514 or 2535 Fall, Spring, Summer		
Fall 4th Year 16 or 18 cr.	ISE 2014 (2) Engineering Economy	BSE 4125 (2) Comprehensive Design Project Pre: BSE 3524 Fall Only	**BSE 4534 (1): Biological Processing Lab ^{1,4} Pre: BSE 3524	BSE 4544 (3) Protein Separation ¹ Pre: BSE 3504 Fall Only	BSE 4604 (3) Food Process Engineering ¹ Pre: BSE 3524 & 3504 Fall Only	FST 4314 (1): Food Processing Lab	FST 4504 (3) Food Chemistry ⁴ Pre: BCHM 2024 or BCHM 3114 Fall Only	BSE 4524 (3) Bioprocessing Plant Design ¹ Pre: BSE 3524 Fall Only
Spring 4th Year 12 or 16 cr.	BSE 4126 (3) Comprehensive Design Project Pre: BSE 4125 Spring Only	FST 3604 (4) Food Microbiology Pre: BIOL 2604 & 2614 (will need to add the lab to a previous semester) Spring Only		BSE 4564 (3) Metabolic Engineering ³ Pre: BSE 3534 Spring Only **will not need if take both BSE 3984 & 4534 labs		Pathways (3)	Engineering Topics Elective (3)	

¹ BSE Elective ² Chemistry Elective ³ Engineering Elective ⁴ Technical Elective ⁵ Pathways ****You must take EITHER BSE 4534 OR BSE 3984: CURE lab to fulfill degree requirements.**