

# B.S. in Biosystems Engineering

## Four-Year Plan

### Catalog Year 2014-2015

Below is the *advised sequence* of courses for this degree program.  
The official degree requirements can be found in the University General Catalog.

Course Number and Title	Units	Prerequisites
<b>1<sup>ST</sup> SEMESTER</b>		
MATH 122A/B or 125 Calculus I with Applications	5/3	Appropriate Math Placement
CHEM 151 General Chemistry I	4	
ENGL 101 First-Year Composition	3	
ENGR 102 Introduction to Engineering or ENGR102A and ENGR102B	3	Concurrent enrollment or completion of MATH 122B or MATH 125
Tier I General Education	3	
<b>2<sup>ND</sup> SEMESTER</b>		
MATH 129 Calculus II	3	Math 122A/B or 125 with C or better
CHEM 152 General Chemistry II	4	CHEM 151
PHYS 141 Introductory Mechanics	4	MATH 122A/B or 125; Concurrent enrollment MATH 129
ENGL 102 First-Year Composition	3	ENGL 101
Tier I General Education	3	
<b>3<sup>RD</sup> SEMESTER</b>		
CE 214 Statics	3	PHYS 141 or 161H ; MATH 129 or MATH 250A
ABE 284 Biosystems Thermal Engineering	3	MATH 129; PHYS 141
ABE 201 Introduction to Biosystems Engineering	2	MATH 122A/B or 124
MATH 223 Vector Calculus	4	MATH 129 or 250A with C or better
MCB 181R Introductory Biology I or MCB 184 or PLS 240 Plant Bio	3 or 4	Appropriate Math Placement
MCB 181L Introductory Biology Laboratory I	1	Concurrent enrollment or completion of MCB 181R
<b>4<sup>TH</sup> SEMESTER</b>		
ABE 205 Engineering Analytic Computer Skills	3	
MATH 254 Intro to Ordinary Differential Equations	3	MATH 129 with C or higher
PHYS 241 Introductory Electricity and Magnetism	4	PHYS 141
ECOL 182R Introductory Biology II or MIC 205 A General Microbiology or PSIO 201 Human Anatomy and Physiology	3 or 4	
ECOL 182L Introductory Biology II Lab or MIC 205L & Biology of Microorganisms Laboratory	1	ECOL 182R OR completed or concurrent registration MIC 205A
Tier 1 General Education	3	

Course Number and Title	Units	Prerequisites
<b>Advanced Standing is required for 3xx and 4xx courses (See advisor for requirements)</b>		
<b>5<sup>TH</sup> SEMESTER</b>		
CE 218 Mechanics of Fluids or AME 331 Introduction to Fluid Mechanics	3	CE 214
SIE 265 Engineering Management I	3	ENGR 102; MATH 122B or MATH 125
ABE 221 Introduction to Computer Aided Design	3	
ABE 447 Sensors and Controls	3	CHEM 103A and 103B or CHEM 105A and 105B or MSE 110
SIE 305 Engineering Probability and Statistics	3	MATH 129
<b>6<sup>TH</sup> SEMESTER</b>		
ABE 423 Biosystems Analysis and Design	3	
ABE Design Elective	3	
ABE Technical Elective	3	
ENGL 308 Technical Writing or ASM 350	3	
Tier I General Education	3	
<b>7<sup>TH</sup> SEMESTER</b>		
ABE 496A Seminar in Engineering Careers and Professionalism	1	Concurrent enrollment ABE 498A
ABE 498A Senior Capstone: Biosystems Engineering Design I	3	ABE 320, 6 units of ABE 400-level courses, Concurrent enrollment ABE 496A
ABE Technical Elective	3	
ABE Design Elective	3	
ABE 393 Internship	1	
AME 324A Mechanical Behavior of Engineering Materials	3	CE 214
Tier II General Education	3	
<b>8<sup>TH</sup> SEMESTER</b>		
ABE 498B Senior Capstone: Biosystems Engineering Design II	3	Senior status; ABE 498A
ABE 400 Elective	3	
ABE Technical Elective	3	
ABE Design Elective	3	
Tier II General Education	3	

\*Tier I and II General Education Courses must meet University general education requirements. One course must be recognized by the university as meeting the Diversity Requirement.