Biosystems Engineering -Biological & Pre-Health-Plan of Work Checklist, Catalog Year 2018-2019

	Required	Actual
Required Major GPA	2	
Required Advanced Standing GPA	2	
University: General Education	**Units Required**	**Units Completed**
Tier I and Tier II requirements (18 units)	**18**	**0**
General Education Tier I	**12**	
Tier I Individuals & Societies Complete 2 courses		
Tier I Traditions & Cultures Complete 2 Courses		
***General Education Tier II**	**6**	
Option 1: Tier II Arts, Complete 1 **upper divison** course		
Diversity Emphasis Course, Complete 1 **upper division** course		
Or Option 2: Complete 1 **upper division** Tier II Humanities course and complete 1 **upper division** Tier II Individual & Societies course.		
Courses Required to Qualify for Advanced Standing in Biosystems Engineering (57 units)	**Units Required**	**Units Completed**
English Composition (12units)	**6**	**0**
First Year Composition I: ENGL 101 OR 107 OR 109H (3 units)	3	
First Year Composition II: ENGL 102 OR 108 OR 109H (3 units)	3	
Biosystems Engineering Core Lower-division Courses (11 units)	**14**	**0**
Introduction to Engineering ENGR 102 or ENGR 102A & 102B	3	
Statics: CE 214	3	
Intro to Biosystems Engineering: BE 201	2	
Engineering Analytic Computer Skills: BE 205	3	
Biosystems Thermal Engineering: BE 284	3	
Math Core	**13**	**0**
Calculus I: MATH 122A (2 Units) / and MATH 122B (3 units) OR MATH 125 (3 units)	3	
Calculus II: MATH 129	3	
Vector Calculus: MATH 223	4	
Intro to Differential Equations: MATH 254	3	
Science Core	**24**	**0**
General Chemistry I: CHEM 151 OR CHEM 105A/106A	4	
General Chemistry II: CHEM 152 OR CHEM 105B/106B	4	
Introductory Mechanics: PHYS 141 or PHYS 161H	4	
Intro to Electricity & Magnetism: PHYS 241 or PHYS 261H	4	
Intro to Biology MCB 181R/L OR PLS 240	4	
ECOL 182R/L OR MIC 205A/L OR PSIO 201	4	

	Required	Actual
Total # of Units Required to Qualify for Advanced Standing	57	0
Total # of Units Required in Advanced Standing	53	0
Total # of Required Units for the Degree Program	128	0
Courses Required After Obtaining Advanced Standing in Biosystems Engineering (53 units)	**Units Required**	**Units Completed**
Mechanics of Fluids Requirement (3 units)	**3**	**0**
Option I: Complete Introduction to Fluid Mechanics: AME 331 (3 Units) (& pre-req AME 250)	3	
Or Option II: Complete Mechanics of Fluids: CE 218 (3 units)		
Advanced Standing: Lower Division Requirements (6 units)	**6**	**0**
Option I: Engineering Graphics and Design with Auto Cad BE 220 (3 units) OR	3	
Option II: Introduction to Computer Aided Design- BE 221 (3 units)		
Engineering Management I: SIE 265 (3 units)	3	
Advanced Standing: Upper Division Requirements (17 units)	**17**	**0**
Mechanics of Materials: AME 324A	3	
Biosystems Analysis and Design: BE 423	3	
Sensors and Controls: BE 447	3	
Internship: BE 493 (complete 1 to 3 units)	1	
Seminar in Engineering Careers and Professionalism: BE 496A	1	
Engineering Probability & Statistics: SIE 305	3	
Technical Writing Options: AGTM 422 OR ENVS 408 OR ENGL 308	3	
Engineering Capstone Design Courses (6 units)	**6**	**0**
ENGR 498A	3	
ENGR 498B	3	
Biosystems Engineering Electives (21 units)	**Units Required**	**Units Completed**
BE Engineering Design Electives -Complete Three Courses (9 units)	**9**	**0**
Design 1	3	
Design 2	3	
Design 3	3	
Technical Electives - Complete (12 units minimum)	**12**	**0**
CHEM 241 A and CHEM 243 A (Tech 1)	4	
CHEM 241 B and CHEM 243B (Tech 2)	4	
*Tech 3	3	
*Tech 4 (BE 492) or 3 unit Tech course under focus research area	1	

***Students who complete CHEM 241A/CHEM243B and/or CHEM241B/CHEM 243B, must review their SAAR and POS with the Department Academic Advisor prior to enrollment in the Advanced Standing Technical Elective courses.**