BIOSYSTEMS ENGINEERING: MACHINE SYSTEMS & AGRICULTURAL ENGINEERING, BSBE

Requirements for Students Matriculating in or before Academic Year 2026-2027. Learn more about University Academic Regulation 3.1 (https://catalog.okstate.edu/university-academic-regulations/#matriculation).

Minimum Overall Grade Point Average: 2.00
Total Hours: 124

Code	Title	Hours
General Education Requirements		
English Composition		
See Academic Regulation 3.5 (https://catalog.okstate.edu/university-academic-regulations/#english-composition)		
ENGL 1113	Composition I	3
or ENGL 1313	Critical Analysis and Writing I	
Select one of the following:		3
ENGL 1213	Composition II	
ENGL 1413	Critical Analysis and Writing II	
ENGL 3323	Technical Writing	
American History & Government		
Select one of the following:		3
HIST 1103	Survey of American History	
HIST 1483	American History to 1865 (H)	
HIST 1493	American History Since 1865 (DH)	
POLS 1113	American Government	3
Quantitative Thought & Logical Reasoning (Q)		
MATH 2144	Calculus I (Q)	4
MATH 2153	Calculus II (Q)	3
Understanding Humanities-Human Heritage & Cultures (H)		
Courses designated (H)		3
Courses designated (DH)		3
Reasoning in the Natural Sciences (N)		
Must include one Laboratory-Based Inquiry (L) course		
CHEM 1414	General Chemistry for Engineers (LN)	4
PHYS 2014	University Physics I (LN)	4
Select four hours from the following:		4
BIOL 1113 & BIOL 1111	Introductory Biology (N) and Introductory Biology Laboratory (LN)	
BIOL 1114	Introductory Biology (LN)	
PBIO 1404	Plant Biology (LN)	
Exploring Society & Human Behavior (S)		
Any course designated (S)		3
Diversity (D)		
Courses designated (D)		
May be paired with another designated course		
Global Cultural Competency (G)		
Courses designated (G)		3
Additional General Education		
Additional general education credit hours may be required to meet the total 40-hour minimum of general education credit if courses carry more than one general education designation and can be used to meet multiple general education designation hour requirements above.		
Courses designated (Q), (H), (N), (S), (D), (G), or (F).		0
Hours Subtotal		**43**
College/Departmental Requirements		
UNIV 1111	First Year Seminar (or other approved first year seminar course)	1
Mathematics		
MATH 2163	Calculus III	3
MATH 2233	Differential Equations	3
Engineering & Engineering Science		
ENGR 1332	Engineering Design with CAD for MAE	2
ENSC 2113	Statics	3
ENSC 2143	Strength of Materials	3
ENSC 2213	Thermodynamics	3
ENSC 2613	Introduction to Electrical Science	3
ENSC 3233	Fluid Mechanics	3
ENSC 2141	Strength of Materials Lab	1
ENSC 3311	Material Science Lab	1
Select One of the Following:		1
ENSC 2411	Electrical Science Lab	
ENSC 2611	Electrical Fabrication Lab	
ENSC 3231	Fluids and Hydraulics Lab	
ENSC 3431	Thermodynamics and Heat Transfer Lab	
ENGR 2421	Engineering Data Acquisition Controls Lab	
Biosystems Engineering		
BAE 1011	Introduction to Biosystems Engineering	1
BAE 1022	Experimental Methods in Biosystems Engineering	2
BAE 2013	Computational Methods in Biosystems Engineering	3
BAE 3033	Advanced Biology and Material Science of Biomaterials	3
Hours Subtotal		**36**
Major Requirements		
Common Professional School		
STAT 4033	Engineering Statistics	3
or STAT 4073	Engineering Statistics with Design of Experiments	
IEM 3503	Engineering Economic Analysis	3
BAE 3013	Heat and Mass Transfer in Biological Systems	3
BAE 3023	Instruments and Controls	3
BAE 3213	Energy and Power in Biosystems Engineering	3
BAE 4001	Professional Practice in Biosystems Engineering	1
BAE 4012	Senior Engineering Design Project I	2
BAE 4023	Senior Engineering Design Project II	3
Specific Professional School		

BAE 3223	Principles of Agriculture and Off-Road Machinery	3
BAE 4224	Machinery for Production and Processing	4
ENSC 2123	Elementary Dynamics	3
ENSC 3313	Materials Science	3
SOIL 2124	Fundamentals of Soil Science (N)	4
Select One of the Following:		3
PLNT 4123	Plant-Environment Interactions	
PLNT 4543	Cropping Systems	
HORT 4963	Horticulture Physiology	
ENVR 4033	Ecology of Invasive Species	
MICR 2123	Introduction to Microbiology	
BIOL 3204	Physiology	
Hours Subtotal		**41**
Electives		
Select 4 hours of engineering and/or science electives to be selected from an approved list upon consultation with an advisor		4
Hours Subtotal		**4**
Total Hours		**124**

Other Requirements

- A minimum 2.0 Technical GPA. The Technical GPA is calculated from all BAE prefixes or substitutions to BAE courses.
- A grade of "C" or better is required in the following courses: BAE 2013, BAE 3013, BAE 3023, BAE 3033, BAE 3213, ENSC 2113, ENSC 2143, ENSC 2213, ENSC 2613, ENSC 3233.
- Students are required to complete the Fundamentals of Engineering (FE) exam prior to graduation.
- A minimum of 40 semester credit hours and 100 grade points must be earned in courses numbered 3000 or above.
- A 2.00 GPA or higher in upper-division hours.

Additional State/OSU Requirements

- At least: 60 hours at a four-year institution; 30 hours completed at OSU; 15 of the final 30 or 50% of the upper-division hours in the major field completed at OSU.
- Limit of: one-half of major course requirements as transfer work; one-fourth of hours earned by correspondence; 8 transfer correspondence hours.
- Students will be held responsible for degree requirements in effect at the time of matriculation and any changes that are made, so long as these changes do not result in semester credit hours being added or do not delay graduation.
- Degrees that follow this plan must be completed by the end of Summer 2032.