



# BIOSYSTEMS ENGINEERING

## ENVIRONMENT AND NATURAL RESOURCES OPTION

Course Plan  
2025-2026  
125 Hours

### Year 1

16 Credit Hours

**BAE 1011**  
Intro to  
Biosystems  
1 Hour  
Note 1

**UNIV 1111**  
First Yr. Seminar  
1 Hour

Prerequisites:  
C or better in one  
of the following-  
**MATH 1613**  
**MATH 1715**  
**MATH 1813**

**MATH 2144**  
Calculus I  
4 Hours  
Note 2

**MATH 2153**  
**PHYS 2014**  
**BAE 3033**  
**ENSC 2113**  
**ENSC 2213**

**CHEM 1414**  
Gen Chemistry  
4 Hours

**ENSC 2213**  
**CIVE 3833**  
**CIVE 2081**  
**SOIL 2124**  
**BAE 4324**

**ENGL 1113**  
Engl Comp I  
3 Hours  
Notes 3

**ENGL 1213**

**HIST 1103**  
American Hist  
3 Hours  
Note 4

14 Credit Hours

**BAE 1022**  
Exper Methods  
2 Hours  
Note 1

**MATH 2144** **PHYS 2014** **BAE 3033**  
Univ. Physics I **ENSC 2213**  
4 Hours **ENSC 2113**

**MATH 2144** **MATH 2153** **MATH 2163**  
Calculus II **MATH 2233**  
3 Hours **ENSC 3233**  
**IEM 3503**  
**ENSC 2613**

**ENGR 1322**  
Or **ENGR 1332**  
Engr Design  
2 Hours

**ENGL 1113** **ENGL 1213**  
Engl Comp II  
3 Hours  
Note 3

### Year 2

16 Credit Hours

**BAE 2013**  
Comp Methods  
3 Hours  
Note 1

**BIOL 1113 &  
BIOL 1111 or  
BIOL 1114 or  
PBIO 1404** **BAE 3033**  
4 Hours

**MATH 2153** **MATH 2163** **STAT 4033 or  
STAT 4073**  
Calculus III  
3 Hours

**MATH 2144** **ENSC 2213** **BAE 3213**  
**PHYS 2014** Thermodynamics  
**CHEM 1414** 3 Hours

**MATH 2144** **ENSC 2113** **ENSC 2143**  
**PHYS 2014** Statics **ENSC 3233**  
3 Hours **BAE 4323**

16 Credit Hours

**BIOL 1113 &  
BIOL 1111 or  
BIOL 1114 or  
PBIO 1404  
MATH 2144  
PHYS 2014** **BAE 3033** **BAE 4314**  
Biomaterials  
3 Hours

**CHEM 1414** **CIVE 2081**  
Environ. Chem.  
1 Hour

**MATH 2153** **MATH 2233** **BAE 3013**  
Diff Equations **BAE 3213**  
3 Hours **BAE 4324**

**MATH 2153** **ENSC 3233** **BAE 3013**  
**ENSC 2113** Fluid Mech **BAE 3213**  
3 Hours **BAE 4314**  
**CIVE 3833**

**ENSC 2113** **ENSC 2143** **BAE 4012**  
Strength of Mat'l  
3 Hours

**POLS 1113**  
American Gov't  
3 Hours

#### Other Requirements:

- A minimum 2.0 Technical GPA. The Technical GPA is calculated from all BAE prefixes or substitutions to BAE courses.
- 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.

Patterned = General Education Course

Shaded = Course requires a grade of C or above

**Course No.**  
Course Name  
# of Hours  
See Note #

**Subsequent Courses**

Prerequisites

#### NOTES:

- (F)-offered in Fall, (SP)-offered in Spring
- 1) BAE 1011, BAE 1022 and BAE 2013 can often be substituted for students transferring into the department internally or externally from another institution. Please contact the department for more information.
  - 2) The prerequisite for MATH 2144 is to score a minimum of 75 on the Math Placement Test or by earning a minimum grade of "C" in MATH 1813 or MATH 1715 or MATH 1613.
  - 3) See Academic Regulation 3.5 (<http://catalog.okstate.edu/university-academic-regulations/#english-composition>).
  - 4) HIST 1103 can be replaced with HIST 1483 (H) or HIST 1493 (DH).
  - 5) BAE 4001 and BAE 4012 are to be taken concurrently.
  - 6) An engineering and/or science elective to be selected from the following list: AST 2313 (F), AST 4203 (F), CIVE 3714 (F,SP), CIVE 3813 (F), CIVE 4833 (F), PLNT 4033 (SP). Some of these courses may require specific prerequisites.
  - 7) Additional general education credit hours are required to meet the total 40-hour minimum of general education credit. Students must take 3 hours of credit in courses designated "G," 3 hours of credit in courses designated "S," 3 hours of credit in courses designated "D," and 6 hours of credit in courses designated "H." Additionally, students must take a course designated "Q," "H," "N," "S," "D," "G," or "F." There will be courses that can be paired, for example (DH) courses, that can be used to meet multiple general education designation hour requirements.



# BIOSYSTEMS ENGINEERING

## ENVIRONMENT AND NATURAL RESOURCES OPTION

Course Plan  
2025-2026  
125 Hours

### Year 3

17 Credit Hours

MATH 2233  
BAE 2013  
CHEM 1414

**BAE 4324**  
Water Quality  
4 Hours

BIOL 1113 &  
BIOL 1111 or  
BIOL 1114 or  
PBIO 1404

**NREM 3013**  
or **NREM**  
**4033**  
3 Hours

MATH 2163

**STAT 4033 or**  
**STAT 4073**  
Engr Statistics  
3 Hours

BAE 4314

MATH 2153

**ENSC 2613**  
Elec. Science  
3 Hours

BAE 3023  
BAE 3213

CHEM 1414

**SOIL 2124**  
Fund. Of Soil  
Science  
4 Hours

15 Credit Hours

MATH 2233  
ENSC 2613

**BAE 3023**  
Inst. & Ctrls  
3 Hours

BAE 4012

MATH 2233  
ENSC 3233

**BAE 3013**  
Heat/Mass Trans  
3 Hours

BAE 4012

ENSC 2213  
ENSC 2613  
ENSC 3233

**BAE 3213**  
Energy & Power  
3 Hours

BAE 4012

ENSC 2113

**BAE 4323**  
GIS for Wtr Res  
3 Hours

CHEM 1414  
ENSC 3233

**CIVE 3833**  
Appl'd Hydraulics  
3 Hours

### Year 4

16 Credit Hours

**BAE 4001**  
Prof. Practice  
1 Hour  
Note 5

BAE 4023

Completion of  
BAE 3013  
BAE 3023  
BAE 3223  
Completion or  
Concurrent  
Enrollment in  
ENSC 2143  
BAE 4001

**BAE 4012**  
Sr Design I  
2 Hours  
Note 5

BAE 4023

BAE 3033  
ENSC 3233  
STAT 4033 or  
STAT 4073

**BAE 4314**  
Hydrology  
4 Hours

MATH 2153

**IEM 3503**  
Engr Econ  
3 Hours

**ENGR OR SCI**  
**ELECTIVE**  
3 Hours  
Note 6

**Humanities**  
**Course (H)**  
3 Hours  
Note 7

15 Credit Hours

BAE 4001  
BAE 4012

**BAE 4023**  
Sr Design II  
3 Hours

**ENGR OR SCI**  
**ELECTIVE**  
3 Hours  
Note 6

**Humanities**  
**Course (DH)**  
3 Hours  
Note 7

**Global Cultural**  
**Competency**  
**Course (G)**  
3 Hours  
Note 7

**Social and**  
**Behavioral Sciences**  
**Course (S)**  
3 Hours  
Note 7

Patterned = General Education Course

Shaded = Course requires a grade of C or  
above

Prerequisites

**Course No.**  
Course Name  
# of Hours  
See Note #

Subsequent  
Courses

#### 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 2031.