BIOSYSTEMS ENGINEERING
ENVIRONMENT & NATURAL RESOURCES OPTION

Course Plan
2023-2024
125 Hours

Year 1

16 Credit Hours

BAE 1012
Intro Biosystems
2 Hours
→ BAE 1022

Preparatory One of These: MATH 1613, MATH 1715, MATH 1813

MATH 2144
Calculus 1
4 Hours
Note 1
→ MATH 2153, PHYS 2014, BAE 2013, ENSC 2123, ENSC 2213

BIOL 1113 & BIOL 1111 or PBIO 1404
4 Hours
→ BAE 2013, BAE 3033

HIST 1103
American Hist
3 Hours
Note 2

ENGL 1113
Engl Comp 1
3 Hours
Note 3, 4
→ ENGL 1213

18 Credit Hours

BAE 1022
Exper Methods
2 Hours
BAE 1012 →

MATH 2153
Calculus II
3 Hours
MATH 2144 →
→ MATH 2163, IEM 3503

PHYS 2014
Gen. Physics I
4 Hours
MATH 2144 →
→ BAE 3033, PHYS 2114, ENSC 2213, ENSC 2113

CHEM 1414
Gen Chemistry
4 Hours
→ ENSC 2213, CIVE 3833

ENGL 1213
Engl Comp II
3 Hours
Note 5
ENGL 1113 →

ENGR 1332
Engr Design
2 Hours

Year 2

16 Credit Hours

BIOL 1113 & BIOL 1111 or PBIO 1404, MATH 2144

BAE 2013
Modeling
3 Hours

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

PHYS 2114
Gen. Physics II
4 Hours
PHYS 2014 →
→ ENSC 2613

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

ENSC 2113
Statics
3 Hours
MATH 2144, PHYS 2014 →
→ ENSC 2143, ENSC 3233

15 Credit Hours

BIOL 1113 & BIOL 1111 or PBIO 1404, MATH 2144, PHYS 2014

BAE 3033
Biomaterials
3 Hours
→ BAE 4314

MATH 2233
Diff Equations
3 Hours
MATH 2153 →

POLS 1113
American Gov't
3 Hours

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

ENSC 2613
Elec. Science
3 Hours
MATH 2153, PHYS 2114 →
→ BAE 3023, BAE 3213

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

Prerequisites → **Course No.** Course Name, # of Hours, See Note # → Subsequent Courses

NOTES:
1) MATH 2144 needs to be preceded with a minimum score of 75 on the Math Placement Test or with MATH 1513 and MATH 1813, respectively.
2) HIST 1103 can be replaced with HIST 1483 (H) or HIST 1493 (DH)
3) See Academic Regulation 3.5 (http://catalog.okstate.edu/university-academic-regulations/#english-composition)
4) ENGL 1113 can be replaced with ENGL 1313 Critical Analysis and Writing I.
5) ENGL 1213 can be replaced with ENGL 1413 or ENGL 3323.
6) At least 6 hours designated "H", 3 hours designated "S", and 3 hours designated "H", "S", "A" or "N" (A total of 12 hours). Of these, 3 hours need to meet the International Dimension "I" and 3 hours need to meet the Diversity Component "D".
7) BAE 4001 and BAE 4012 are to be taken concurrently

BIOSYSTEMS ENGINEERING
ENVIRONMENT & NATURAL RESOURCES OPTION

Course Plan
2023-2024
125 Hours

Year 3

17 Credit Hours

NREM 3013
Applied Ecology
3 Hours
Prereq: BIOL 1113 & BIOL 1111or PBIO 1404

ENSC 2143
Strength of Mat'l
3 Hours
Prereq: ENSC 2113
Subsequent: BAE 4012

SOIL 2124 or CIVE 3714
4 Hours
Prereq for SOIL 2124 is CHEM 1414
Prereq for CIVE 3714 is ENSC 2143

STAT 4033 or STAT 4073
Engr Statistics
3 Hours
Prereq: MATH 2163
Subsequent: BAE 4314

BAE 4324
Water Quality
4 Hours
Prereq: MATH 2233, BAE 2013, CHEM 1414 or 1515

15 Credit Hours

BAE 3023
Inst. & Ctrls
3 Hours
Prereq: MATH 2233, ENSC 2613
Subsequent: BAE 4012

BAE 3013
Heat/Mass Trans
3 Hours
Prereq: MATH 2233, ENSC 3233
Subsequent: BAE 4012

BAE 3213
Energy & Power
3 Hours
Prereq: ENSC 2213, ENSC 2613, ENSC 3233
Subsequent: BAE 4012

BAE 4323
GIS for Wtr Res
3 Hours
Prereq: ENSC 2113

CIVE 3833
Appl'd Hydraulics
3 Hours
Prereq: CHEM 1414, ENSC 3233

Year 4

16 Credit Hours

BAE 4001
Prof. Practice
1 Hours
Prereq: *Completion or Concurrent Enrollment ENSC 2143, BAE 3013, BAE 3023, BAE 3213, BAE 4001*
Subsequent: BAE 4023

BAE 4012
Engr. Design I
2 Hours
Prereq: *ENSC 2143, BAE 3013, BAE 3023, BAE 3213, BAE 4001*
Subsequent: BAE 4023

BAE 4314
Hydrology
4 Hours
Prereq: BAE 3033, ENSC 3233, STAT 4073

"A", "H", "N", or "S" Course
3 Hours
Note 6

"H", "I", "D" Course
3 Hours
Note 6

IEM 3503
Engr Econ
3 Hours
Prereq: MATH 2153

12 Credit Hours

"S", "I", "D" Course
3 Hours
Note 6

BAE 4023
Engr. Design II
3 Hours
Prereq: BAE 4001, BAE 4012

ENGR OR SCI ELECTIVE
3 Hours

"H", "I", "D" Course
3 Hours
Note 6

Master's Programs:
Criteria for admission to the Graduate College to pursue the Master of Science include:
1. Receive a B.S. degree from an accredited institution
2. Academic performance in undergraduate work at a level that indicates a high probability of success in a graduate program requiring a 3.0/4.0 minimum grade point average

Or further information, contact the School or the Office of the Dean of Engineering.

A flexible study plan is designed to meet each student's individual goals.

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 2029.