# Biological Systems Engineering (Environmental Option)

126 credit hours total

**YEAR 1**

- **FALL**
  - MATH 220 (4) Analytic Geometry and Calculus I
    - PR: MATH 220 ≥ C
  - CHM 210 (4) Chemistry I
    - PR: CHM 210
  - DEN 160 (1) College of Engineering Orientation
  - *ENGL 100 (3) Expository Writing I
    - PR/CD: MATH 150
  - *COMM 106 (3) Public Speaking
    - KSC-2
  - Elective (3)
    - KSC-5
  - BAE 020 (0)

- **SPRING**
  - MATH 221 (4) Analytic Geometry and Calculus II
    - PR: MATH 220 ≥ C
  - CHM 230 (4) Chemistry II
    - PR: CHM 230
  - BIOL 198 (4) Principles of Biology
  - *BAE 460 (3) Computational and Statistical Tools for Engineers
    - PR: MATH 221, SO standing
  - *Elective (3)
    - KSC-2
  - BAE 020 (0)

**YEAR 2**

- **FALL**
  - MATH 222 (4) Analytic Geometry and Calculus III
    - PR: MATH 221 ≥ C
  - CHM 350 (3) General Organic Chemistry
    - PR: CHM 230
  - PHYS 214 (5) Engineering Physics II
    - PR: PHYS 213
  - *CE 530 (3) Statics and Dynamics
    - PR: MATH 222, PHYS 213
  - *BAE 345 (2) Properties of Biological Materials Laboratory
    - PR/CD: BAE 345
  - IMSE 530 (2) Engineering Economic Analysis
    - KSC-6
  - BAE 020 (0)

- **SPRING**
  - MATH 340 (4) Elementary Differential Equations
    - PR: MATH 221 ≥ C
  - CHM 350 (3) General Organic Chemistry
    - PR: CHM 230
  - PHYS 216 (4) Engineering Physics II
    - PR: PHYS 213, PR/CO: MATH 221
  - *BAE 345 (2) Properties of Biological Materials Laboratory
    - PR/CD: BAE 345
  - *Elective (3)
    - KSC-5
  - BAE 020 (0)

**YEAR 3**

- **FALL**
  - ME 513 (3) Thermodynamics I
    - PR: MATH 222, PHYS 213
  - CHM 230 (4) Chemistry II
    - PR: CHM 230
  - PHYS 214 (5) Engineering Physics II
    - PR: PHYS 213
  - *CE 530 (3) Statics and Dynamics
    - PR: MATH 222, PHYS 213
  - *BAE 445 (3) Biological Engineering Fundamentals
    - PR: BIOL 198, BAE 345 or CE 533 or CHE 354,355
  - AGRON 205 (3) Soils
    - PR: CHM 110 or 210
  - BAE 020 (0)

- **SPRING**
  - BAE 331 (1) Professional Practice for Biological Systems Engineering Design
    - PR: BAE 331, PR/CD: ME 533 or BAE 545 or BAE 560
  - CHM 230 (4) Chemistry II
    - PR: CHM 230
  - PHYS 216 (4) Engineering Physics II
    - PR: PHYS 213, PR/CO: MATH 221
  - Biological Process Engineering
    - PR/CO: CHE 530 or ME 571
  - BAE 660 (3) Hydrologic Transport in Biological Systems
    - PR: ME 571 or CHE 530
  - Elective (3)
    - Institutional
    - KSC-7
  - BAE 020 (0)

**YEAR 4**

- **FALL**
  - BAE 536 (3) Biological Systems Engineering Senior Design I
    - PR: BAE 533, PR/CD: ME 533 or BAE 545 or BAE 560
  - CHM 230 (4) Chemistry II
    - PR: CHM 230
  - PHYS 216 (4) Engineering Physics II
    - PR: PHYS 213, PR/CO: MATH 221
  - *BAE 445 (3) Biological Engineering Fundamentals
    - PR: BIOL 198, BAE 345 or CE 533 or CHE 354,355
  - *Elective (3)
    - Institutional
    - KSC-6
  - BAE 020 (0)

- **SPRING**
  - BAE 636 (1) Biological Systems Engineering Senior Design II
    - PR: BAE 536
  - Elective (3)
    - Institutional
    - KSC-7
  - BAE 020 (0)

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**Notes:**

- Degree map is for advising purposes only. Students are responsible for complying with University Catalog requirements.
- Key:
  - = Prerequisite for another course
  - PR = Prerequisite requirement
  - PR/CO = Prerequisite or concurrent requirement
  - * = K-State Core (KSC) course
  - ▲ = See department approved electives
  - = Only offered in the semester shown

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**Kansas State University**

Carl R. Ice

College of Engineering

EFFECTIVE FALL 2024
Students who satisfy all or part of K-State Core Institutional Electives (KSC-7) with courses that satisfy other degree requirements may use additional unrestricted electives to meet the degree requirement of 126 credit hours.

Track Electives
Track electives are to be chosen from an approved departmental list of courses. Three of the 6 credit hours must be engineering courses.

Additional information is available at bae.k-state.edu/academics/undergraduate/bse/bse-track-electives.pdf.

K-State Core
The K-State Core (KSC) is the university’s version of the systemwide general education framework established by the Kansas Board of Regents.

KSC requirement 1 – English (6 hours)
KSC requirement 2 – Communications (3 hours)
KSC requirement 3 – Math and Statistics (3 hours)
KSC requirement 4 – Natural and Physical Sciences (4-5 hours)
KSC requirement 5* – Social and Behavioral Sciences (6 hours)
KSC requirement 6* – Arts and Humanities (6 hours)
KSC requirement 7 – Institutional Electives (6 hours)

To view course lists for each requirement, visit k-state.edu/provost/kstate-core.

*Requires two courses from two different subject areas.