

**Undergraduate Curriculum in Biological Systems Engineering  
Ecological Engineering Option**

2024-2025 Catalog

Total Credits 127

**First Year (32 cr.)**

| <b>Semester 1 (16 cr.)</b> |            | <b>Semester 2 (16 cr.)</b>    |              |                                       |
|----------------------------|------------|-------------------------------|--------------|---------------------------------------|
| R                          | Engr 1010  | Orientation (FS)              | 1 ABE 1100   | Experiencing BSE (S)                  |
| 3                          | ABE 1700   | Graphics and Design (FS)      | 3 ABE 1600   | Engineering Problems (S)              |
| 4                          | Chem 1670  | General Chemistry (FS)        | 4 Math 1660  | Calculus II (FSSS)                    |
| 1                          | Chem 1670L | General Chemistry Lab (FS)    | 4 Phys 2310  | Classical Physics I (FSSS)            |
| 4                          | Math 1650  | Calculus I (FSSS)             | 1 Phys 2310L | Classical Physics I Lab (FS)          |
| 3                          | Engl 1500  | Crit. Think. and Comm. (FSSS) | 3 Engl 2500  | Writ/Oral/Vis/Elec Composition (FSSS) |
| 1                          | Lib 1600   | Information Literacy (FSSS)   |              |                                       |

**Second Year (31 cr.)**

| <b>Semester 3 (16 cr.)</b> |            | <b>Semester 4 (15 cr.)</b>          |              |   |
|----------------------------|------------|-------------------------------------|--------------|---|
| 3                          | ABE 2160   | Fund. Ag. and Biol. Engineering (F) | 2 ABE 2180   | Project Mgmt/Design Ag & Bio Engr (S)   |
| 3                          | CE 2740    | Statics of Engineering (FSSS)       | 1 ABE 2010   | Preparing for the Workplace (FS)        |
| 3                          | Biol 2120  | Principles of Biology II (FSSS)     | 1 ABE 2730   | 2D Auto CAD (FS)                        |
| 2                          | Chem 2110  | Quant. & Environ. Analysis (FS)     | 3 ME 2310    | Thermodynamics (FSSS)                   |
| 2                          | Chem 2110L | Quant. & Environ. Analysis Lab (FS) | 4 Math 2670  | Differential Equations (FSSS)           |
| 3                          | →          | US Cultures & Communities Elective  | 3 Chem 2310  | Elementary Organic Chemistry (FSSS)     |
|                            |            |                                     | 1 Chem 2310L | Elementary Organic Chemistry Lab (FSSS) |

**Third Year (32 cr.)**

| <b>Semester 5 (17 cr.)</b> |             | <b>Semester 6 (16 cr.)</b>                  |            |   |
|----------------------------|-------------|---|------------|---|
| 3                          | ABE 3160    | Applications and Systems Modeling (FS)      | 4 ABE 3630 | Electric Power and Electronics (FS)       |
| 3                          | ABE 3780    | Mechanics of Fluids (FS)                    | 3 ABE 3800 | Principles of BSE (S)                     |
| 3                          | Micro 3020  | Biology of Microorganisms (FSSS)            | 3 CE 3720  | Engineering Hydrology and Hydraulics (FS) |
| 1                          | Micro 3020L | Microbiology lab (FSSS)                     | 3 EM 3240  | Mechanics of Materials (FSSS)             |
| 3                          | STAT 3050   | Engineering Statistics (FSSS)               | 3 IE 3050  | Engineering Economic Analysis (FSSS)      |
| 1                          | →           | Lab Elective ( <i>ABE 3780L preferred</i> ) |            |   |
| 3                          | →           | Communication Elective.                     |            |   |

**Fourth Year (32 cr.)**

| <b>Semester 7 (17 cr.)</b> |          | <b>Semester 8 (14cr.)</b>               |            |                                      |
|----------------------------|----------|---|------------|--------------------------------------|
| 2                          | ABE 4150 | Ag & Biosystems Engr. Design I (FS)     | 2 ABE 4160 | Ag & Biosystems Engr. Design II (FS) |
| 3                          | ABE 4040 | Instrumentation for Ag and Bio Engr (F) | 3 ABE 4340 | Ecosystem Restoration (S)            |
| 3                          | ABE 4310 | Des. & Eval. of Soil & Water Cons. (F)  | 3 →        | Ecological Elective I                |
| 3                          | ABE 4800 | Engineering Analysis of Bio Systems (F) | 3 →        | Ecological Elective II               |
| 3                          | →        | International Perspectives Elective     | 3 →        | SS/H Elective                        |
| 3                          | →        | SS/H Elective                           |            |                                      |

*\*Please check the current catalog and Schedule of Classes for most recent offerings*