

# Biological Systems Engineering (BSE) – Students Graduating in 2019

132 credits required

|  |   |  |  |   |  |  |   |
|--|---|--|--|---|--|--|---|
| <b>Fall<br/>1<sup>st</sup> Year<br/>16 credits</b>   | <b>Chem 1035 (3)</b><br>General Chemistry   | <b>Chem 1045 (1)</b><br>General Chemistry Lab  | <b>MATH 1225 (4)</b><br>Calculus for Science   | <b>ENGE 1215 (2)</b><br>Foundations of Engineering                                    | <b>ENGL 1105 (3)</b><br>First-Year Writing   | <b>CLE (Area 2,3 or 7) (3)</b>             |   |
| <b>Spring<br/>1<sup>st</sup> Year<br/>17 credits</b> | <b>CHEM 1036 (3)</b><br>General Chemistry<br>Pre: CHEM 1035   | <b>PHYS 2305 (4)</b><br>Foundations of Physics<br>Pre: MATH 1225<br>Co: MATH 1226                              | <b>MATH 1226 (4)</b><br>Calculus for Science<br>Pre: MATH 1225                                 | <b>ENGL 1106 (3)</b><br>First-Year Writing<br>Pre: ENGL 1105                          | <b>ENGE 1216 (2)</b><br>Exploration of Engineering Design<br>Pre: ENGE 1215                          | <b>CLE (Area 6) (1)</b>                    |   |
| <b>Fall<br/>2<sup>nd</sup> Year<br/>17 credits</b>   | <b>MATH 2114 (3)</b><br>Intro to Linear<br>Algebra  | <b>MATH 2204 or 2224 (3)</b><br>Multivariable Calculus<br>Pre: Math 1225 & 1226<br>(Old sequence: 1205 & 1206) | <b>ESM 2104 (3)</b><br>Statics<br>Co: MATH 2114, MATH<br>2224                                  | <b>BIOL 1105 (3)</b><br>Principles of Biology<br>Fall, Summer 1                       | <b>CHEM elective (3)</b>   |  | <b>BSE 2004 (2)</b><br>Intro to BSE<br>Pre: ENGE 1215<br>Fall, Spring |
| <b>Spring<br/>2<sup>nd</sup> Year<br/>18 credits</b> | <b>MATH 2214 (3)</b><br>Differential Equations<br>Pre: MATH 2114 & 1226<br>(Old sequence: 1206)                 | <b>ESM 2304 (3)</b><br>Dynamics<br>Pre: ESM 2104, MATH 2224<br>Co: MATH 2214                                   | <b>BIOL 1106 (3)</b><br>Principles of Biology<br>Spring, Summer 2                              | <b>BSE 3144 (2)</b><br>Engr Analysis for Biol Systems<br>Co: MATH 2214<br>Spring Only | <b>PHYS 2306 (4)</b><br>Foundations of Physics<br>Pre: MATH 1225,<br>PHYS 2305                       | <b>CLE (Area 2,3 or 7)<br/>(3)</b>         |   |
| <b>Fall<br/>3<sup>rd</sup> Year<br/>15 credits</b>   | <b>ESM 3024 (3)</b><br>Intro Fluid Mechanics<br>Pre: ESM 2304, MATH 2224<br>Fall, Summer 2, Winter              |  | <b>STAT 3704 (2)</b><br>Statistics for Engineering<br>Applications<br>Pre: MATH 2224/2204      | <b>BSE 3134 (1)</b><br>BSE Seminar<br>Pre: BSE 2004<br>Fall Only                      | <b>BSE 3154 (3)</b><br>Thermodynamics of Biol. Systems<br>Pre: MATH 2204/2224, ESM 2304<br>Fall Only | <b>Technical<br/>Elective<br/>(3)</b>      | <b>CHEM<br/>elective<br/>(3)</b>                                      |
| <b>Spring<br/>3<sup>rd</sup> Year<br/>18 credits</b> | <b>BIOL 2604 (3)</b><br>General Microbiology<br>Pre: BIOL 1105, 1106, CHEM 1035, 1036<br>Fall, Spring, Summer 1 |  | <b>BSE 3504 (3)</b><br>Transport Processes in BSE<br>Pre: BSE 3154, ESM 3024<br>Spring Only    | <b>BSE Elective (3)</b>   | <b>Technical Elective<br/>(3)</b>  | <b>Technical<br/>Elective (3)</b>          | <b>CLE (Area 2,3 or 7) (3)</b>  |
| <b>Fall<br/>4<sup>th</sup> Year<br/>16 credits</b>   | <b>ISE 2014 (2)</b><br>Engineering Economy<br>Pre: ENGE 1215  | <b>BSE 4125 (2)</b><br>Comprehensive Design Project<br>Pre: BSE 3334 or 3524<br>Fall Only                      | <b>BSE 4204 (3)</b><br>Instrumentation for Biosystems<br>Pre: PHYS 2306, ESM 3024<br>Fall Only | <b>BSE Elective (3)</b>   | <b>BSE Elective (3)</b>  | <b>Engineering Topics<br/>Elective (3)</b> |   |
| <b>Spring<br/>4<sup>th</sup> Year<br/>15 credits</b> | <b>BSE 4126 (3)</b><br>Comprehensive Design Project<br>Pre: BSE 4125<br>Spring Only                             |  | <b>BSE Elective (3)</b>  | <b>Engineering Topics Elective (3)</b>  | <b>CLE (Area 2,3 or 7) (3)</b>   | <b>CLE (Area 2,3 or 7) (3)</b>             |   |

<sup>1</sup> BSE Elective; <sup>2</sup> Chemistry Elective; <sup>3</sup> Engineering Elective; <sup>4</sup> Technical Elective; <sup>5</sup> CLE