#### BIOSYSTEMS ENGINEERING, PHD

**Requirements for Students Matriculating in or before Academic Year 2019-2020.** Learn more about Graduate College Academic Regulation 7.0 (http://catalog.okstate.edu/graduate-college).

**Total Hours:** 60 Hours

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAE 5501</td>
<td>Seminar</td>
<td>1</td>
</tr>
<tr>
<td>BAE 6101</td>
<td>Teaching Practicum in Biosystems Engineering</td>
<td>1</td>
</tr>
<tr>
<td>Advanced Math (if the student didn’t take any advanced math in the Master’s program)</td>
<td>3</td>
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</tbody>
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**Specialization and Dissertation**

Combination of Dissertation and Specialization to total 55 hours. 55

**Core Courses (By Specialty Area)**

- **Biomechanical Systems**
  - BAE 5413: Advanced Instrumentation and Control Systems for Biological Applications
  - BAE 6540: Prob Farm Power & Mach

- **Environment and Natural Resources**
  - BAE 6313: Stochastic Methods in Hydrology
  - BAE 6333: Fluvial Hydraulics
  - BAE 6343: Ground Water Contaminant Transport
  - BAE 6520: Problems in Soil and Water Engineering

- **Bioprocessing and Biotechnology**
  - BAE 5213: Renewable Energy Engineering
  - BAE 5283: Advanced Bioprocess Engineering
  - BAE 5413: Advanced Instrumentation and Control Systems for Biological Applications

- **CHE 5123**: Advanced Chemical Reaction Engineering
- **CHE 5373**: Process Simulation
- **CHE 5743**: Chemical Engineering Process Modeling
- **STAT 5303**: Experimental Designs

**Research and Additional Requirements**

- **BAE 6000**: Offered for variable credit, 1-10 credit hours, maximum of 42 credit hours.

**Hours Subtotal**: 55

**Total Hours**: 60

1. Prerequisites: BAE 4313 or CIVEN 5843 and STAT 4053.
2. Prerequisites: ENGSC 3233 or equivalent.
3. Prerequisites: AGRON 5583 or CIVEN 5913.
4. Prerequisites: CHEM 1515, BAE 4313 or equivalent.

**General Graduate College Requirements**

- A minimum Grade-Point-Average of 3.00 is required
- A minimum Grade of “C” is required in all degree applicable courses
- No courses utilizing the Pass-No Pass grading system are permitted
- GRAD 5082 or GRAD 5092 may not be used to meet degree requirements

**Additional Doctor of Philosophy (PhD.) Requirements**

- 90 credits beyond the Bachelor’s degree, 60 credits beyond the Master’s degree are required
- At least seventy-five percent of coursework on the Plan of Study must include 5000 and 6000 level courses
- A minimum of 15 hours at the 6000 level with a grade of SR for the doctoral dissertation must be complete. The maximum number of dissertation hours (6000 with a grade of SR) permissible on a Plan of Study must not exceed three-fourths of the total credit hours in the approved graduate degree program
- Credit for all courses on a graduate Plan of Study must have been awarded within 10 years of completion of all degree requirements
- A minimum of 30 in-residence credit hours are required
- Non-Course requirements:
  - Doctoral Candidacy
  - Dissertation Defense
  - Dissertation Submission/Approval