## Entomology: Insect Biology and Ecology, BSAG

### Requirements for Students Matriculating in or before Academic Year 2021-2022
Learn more about University Academic Regulation 3.1 ([http://catalog.okstate.edu/university-academic-regulations/#matriculation](http://catalog.okstate.edu/university-academic-regulations/#matriculation)).

**Minimum Overall Grade Point Average:** 2.00
**Total Hours:** 120

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td><strong>General Education Requirements</strong></td>
<td></td>
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<tr>
<td><strong>English Composition</strong></td>
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<tr>
<td>See Academic Regulation 3.5 (<a href="http://catalog.okstate.edu/university-academic-regulations/#english-composition/">http://catalog.okstate.edu/university-academic-regulations/#english-composition/</a>)</td>
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<tr>
<td>ENGL 1113 or ENGL 1313</td>
<td>Composition I or Critical Analysis and Writing I</td>
<td>3</td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>ENGL 1213</td>
<td>Composition II</td>
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<tr>
<td>ENGL 1413</td>
<td>Critical Analysis and Writing II</td>
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<tr>
<td>ENGL 3323</td>
<td>Technical Writing</td>
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<tr>
<td><strong>American History &amp; Government</strong></td>
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<td>Select one of the following:</td>
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<tr>
<td>HIST 1103</td>
<td>Survey of American History</td>
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<tr>
<td>HIST 1483</td>
<td>American History to 1865 (H)</td>
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<tr>
<td>HIST 1493</td>
<td>American History Since 1865 (DH)</td>
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<tr>
<td>POLS 1113</td>
<td>American Government</td>
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<tr>
<td><strong>Analytical &amp; Quantitative Thought (A)</strong></td>
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<tr>
<td>Select one of the following:</td>
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<tr>
<td>MATH 1483</td>
<td>Mathematical Functions and Their Uses (A)</td>
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<tr>
<td>MATH 1513</td>
<td>College Algebra (A)</td>
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<tr>
<td>MATH 1613</td>
<td>Trigonometry (A)</td>
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<tr>
<td>MATH 2103</td>
<td>Business Calculus (A)</td>
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<tr>
<td><strong>Humanities (H)</strong></td>
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<td>6</td>
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<tr>
<td>Courses designated (H)</td>
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<tr>
<td><strong>Natural Sciences (N)</strong></td>
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<tr>
<td>Must include one Laboratory Science (L) course</td>
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<tr>
<td>BIOL 1114</td>
<td>Introductory Biology (LN)</td>
<td>4</td>
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<tr>
<td>CHEM 1314 or CHEM 1215</td>
<td>Chemistry I (LN) or Chemical Principles I (LN)</td>
<td>4</td>
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<tr>
<td><strong>Social &amp; Behavioral Sciences (S)</strong></td>
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<tr>
<td>Course designated (S)</td>
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<td></td>
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<tr>
<td><strong>Additional General Education</strong></td>
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<tr>
<td>Courses designated (A), (H), (N), or (S)</td>
<td>8</td>
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<tr>
<td><strong>Hours Subtotal</strong></td>
<td></td>
<td>40</td>
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<tr>
<td><strong>Diversity (D) &amp; International Dimension (I)</strong></td>
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<tr>
<td>May be completed in any part of the degree plan</td>
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<tr>
<td>Select at least one Diversity (D) course</td>
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<tr>
<td>Select at least one International Dimension (I) course</td>
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### College/Departmental Requirements

**Agricultural Sciences and Natural Resources**

- Ferguson College of Agriculture course cannot be used here and as an (N)
- AG 1011  First Year Seminar  1
- AGEC 1113  Introduction to Agricultural Economics (S)  3
- ENTO 2993  Introduction to Entomology (LN)  3
- STAT 2013  Elementary Statistics (A)  3
- Select one of the following:  3
  - ANSI 1124  Introduction to the Animal Sciences  
  - BIOC 2344  Chemistry and Applications of Biomolecules  
  - ENVR 1113  Elements of Environmental Science (N)  
  - FDSC 1133  Fundamentals of Food Science  
  - HORT 1013  Principles of Horticultural Science (LN)  
  - LA 1013  Introduction to Landscape Architecture and Landscape Management  
  - NREM 1014  Introduction to Natural History (LN)  
  - NREM 1113  Elements of Forestry  
  - NREM 2013  Ecology of Natural Resources  
  - PLNT 1213  Introduction to Plant and Soil Systems  
  - SOIL 2124  Fundamentals of Soil Science (N)  

**Written and Oral Communications**

- Select one of the following:  3
  - AGCM 3103  Written Communications in Agricultural Sciences and Natural Resources  
  - BCOM 3113  Written Communication  
  - BCOM 3443  Business Communication for International Students  
  - ENGL 3323  Technical Writing  
- Select one of the following:  3
  - AGCM 3203  Oral Communications in Agricultural Sciences & Natural Resources (S)  
  - SPCH 2713  Introduction to Speech Communication (S)  
  - SPCH 3733  Elements of Persuasion (S)  

### Hours Subtotal

19

### Major Requirements

With approval from the advisor and the department head, a maximum of 30 hours of science courses from an accredited doctoral health program may be substituted for major requirements other than the ENTO core courses of eight hours.

**Core Courses**

- Select 8 hours of the following:  8
  - ENTO 3044  Insect Morphology and Physiology  
  - ENTO 4464  Insect Biology and Classification  

**Additional Entomology**

- ENTO 4800  Entomology Practicum  3
- Any entomology or plant pathology course not taken as a core course  12

**Related Courses**

**Genetics:**

- Select one of the following:  3
  - BIOL 3023  General Genetics  
  - PLNT 3554  Plant Genetics and Biotechnology  
  - ANSI 3423  Animal Genetics  

Ecology.
Select one of the following:  
BIOL 3034 General Ecology  
NREM 4033 Ecology Of Invasive Species

Chemistry:  
CHEM 1225 Chemical Principles II (LN)  
or CHEM 1515 Chemistry II (LN)

Select one of the following:  
BIOC 3653 Survey of Biochemistry  
CHEM 3053 Organic Chemistry I

Select 24 hours of the following:  
BIOL 2344 Chemistry and Applications of Biomolecules  
BIOL 3653 Survey of Biochemistry  
ENTO 1604 Animal Biology  
ENTO 2003 Insects and Society (N)  
ENTO 2223 Insects in Global Public Health (N)  
ENTO 3003 Livestock Entomology  
ENTO 3021 Postharvest, Structural, and Urban Arthropod Pests  
ENTO 3331 Insect Pests of Agronomic Crops  
ENTO 3421 Horticultural Insects  
ENTO 3461 Insects in Forest Ecosystems  
ENTO 3501 Entomology for Educators  
ENTO 3663 Turfgrass Integrated Pest Management  
ENTO 4223 Ecological Methodology  
ENTO 4400 Special Topics  
ENTO 4484 Aquatic Entomology  
ENTO 4733 Insect Behavior and Chemical Ecology  
ENTO 4854 Medical and Veterinary Entomology  
ENTO 4923 Applications of Biotechnology in Pest Management  
HORT 3153 Turf Management  
HORT 3084 Plant Propagation  
NREM 2013 Ecology of Natural Resources  
NREM 3063 Natural Resource Biometrics  
NREM 3101 Forest Resource Field Studies  
NREM 3613 Principles of Rangeland Management  
PBI 1404 Plant Biology (LN)  
PBI 4453 Plant Physiology  
PLNT 2013 Applied Plant Science  
PLNT 3554 Plant Genetics and Biotechnology  
PLNT 4113 Advanced Weed Science  
PLNT 4123 Plant-Environment Interactions  
PLNT 4353 Plant Breeding  
PLP 3343 Principles of Plant Pathology  
MICR 2123 Introduction to Microbiology  
& MICR 2132 and Introduction to Microbiology Laboratory  
SOIL 4213 Precision Agriculture  
SOIL 4363 Environmental Soil Science  
SOIL 4893 Environmental Soil Chemistry  
BIOL 1604 Animal Biology  
BIOL 3104 Invertebrate Zoology  
BIOL 4104 General Parasitology  
BIOL 4133 Evolution  
MATH 2103 Business Calculus (A)  
MATH 2144 Calculus I (A)  
MATH 2153 Calculus II (A)  
CHEM 3153 Organic Chemistry II  
& CHEM 3112 and Organic Chemistry Laboratory  
PHYS 1114 College Physics I (LN)  
PHYS 1214 College Physics II (LN)  
STAT 2331 SAS Programming  
STAT 4013 Statistical Methods I (A)  
STAT 4023 Statistical Methods II  
STAT 4043 Applied Regression Analysis  
BIOL 4133 Evolution

Foreign Language: Up to 10 credit hours of upper division foreign language may be substituted

Hours Subtotal  61

Electives

Select 0 hours or hours to complete required total for degree  0

Total Hours  120

1 College & Departmental requirements that may be used to meet General Education requirements.
2 If ENGL 3323 Technical Writing is substituted for ENGL 1213 Composition II above; hours in this block are reduced by 3.
3 If used as (S) course above, hours in this block reduced by 3.

Other Requirements

- 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.

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 2027.