BIOCHEMISTRY AND MOLECULAR BIOLOGY: PRE-MEDICAL OR PRE-VETERINARY SCIENCE, BSAG

Requirements for Students Matriculating in or before Academic Year 2019-2020. Learn more about University Academic Regulation 3.1 (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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<tbody>
<tr>
<td></td>
<td><strong>General Education Requirements</strong></td>
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<tr>
<td></td>
<td><strong>English Composition</strong></td>
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<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</td>
<td>Composition I</td>
<td>3</td>
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<tr>
<td>or ENGL 1313</td>
<td>Critical Analysis and Writing I</td>
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<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>
<td></td>
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<tr>
<td>ENGL 3323</td>
<td>Technical Writing</td>
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<tr>
<td></td>
<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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<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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<td><strong>Analytical &amp; Quantitative Thought (A)</strong></td>
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<tr>
<td>MATH 2144</td>
<td>Calculus I (A)</td>
<td>4</td>
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<td></td>
<td><strong>Humanities (H)</strong></td>
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<tr>
<td>Courses designated (H)</td>
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<td></td>
<td><strong>Natural Sciences (N)</strong></td>
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<td>Must include one Laboratory Science (L) course</td>
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<tr>
<td>CHEM 1314</td>
<td>Chemistry I (LN)</td>
<td>4</td>
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<td>5 hours courses designated N</td>
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<td><strong>Social &amp; Behavioral Sciences (S)</strong></td>
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<tr>
<td>AGEC 1113</td>
<td>Introduction to Agricultural Economics (S)</td>
<td>3</td>
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<td><strong>Additional General Education</strong></td>
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<tr>
<td>Courses designated (A), (H), (N), or (S)</td>
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<td>6</td>
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<td><strong>Hours Subtotal</strong></td>
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<td><strong>Diversity (D) &amp; International Dimension (I)</strong></td>
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MICR 2132 Introduction to Microbiology Laboratory 2
PHYS 1114 College Physics I (LN) 4
or PHYS 2014 University Physics I (LN)
PHYS 1214 College Physics II (LN) 4
or PHYS 2114 University Physics II (LN)

Related Courses
Option:
Select an option (p. 2) 20
Hours Subtotal 63

Electives
Select 4 hours or hours to complete required total for degree. 4
Hours Subtotal 4
Total Hours 120

1 College & Departmental requirements that may be used to meet GE 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.

Options
Option 1
With the approval of the advisor, department head, and dean, hours of basic sciences from an accredited chiropractic, dental medial, optometry, osteopathic, pharmacy, podiatry, or veterinary medical school to total 57 hours.

Option 2
Code Title Hours
BIOL 3023 General Genetics 3
ANSI 3423 Animal Genetics
PLNT 3554 Plant Genetics and Biotechnology
Select one of the following: 3

BIOL 3204 Physiology
ENTO 3044 Insect Morphology and Physiology
PBIO 4463 Plant Physiology
Select a minimum of 6 hours of BIOC or courses related to BIOC, subject to Advisor approval, of the following: 7

MICR 3433 Animal Breeding
ANSI 3443 Animal Reproduction
ANSI 3543 Principles of Animal Nutrition
BIOC 1990 Freshman Research in Biochemistry and Molecular Biology (up to 2 hours) 1
BIOC 2202 Medicine and Molecules
BIOC 2352 Fundamental Biochemistry
BIOC 3003 Hypothesis-Driven Undergraduate Research
BIOC 4113 Molecular Biology
BIOC 4523 Biochemistry of the Cell
BIOC 4723 Introduction to Bioinformatics

MICR 3143 Medical Mycology
MICR 3154 Food Microbiology
MICR 3223 Advanced Microbiology
MICR 3253 Immunology
MICR 4012 Molecular Microbiology Laboratory I
MICR 4013 Microbial Physiology & Ecology
MICR 4112 Molecular Microbiology Capstone
MICR 4123 Virology
MICR 4203 Bioinformatics
MICR 4053 Pathogenic Microbiology
MICR 4052 Pathogenic Microbiology Lab
MICR 4233 Advanced Cell and Molecular Biology
MICR 4253 Concepts in Medical Genetics
MICR 4263 Microbial Genetics: from Genes to Genomes
MICR 4323 Biological Energy Transduction
MICR 4423 Antibiotics and Antibiotic Resistance
NSCI 4023 Nutrition in the Pathophysiology of Chronic Disease
NSCI 4123 Human Nutrition and Metabolism I
NSCI 4143 Human Nutrition and Metabolism II
PBIO 4233 Plant Anatomy
PBIO 4462 Plant Physiology Laboratory
PBIO 4423 Plant Mineral Nutrition
PHYS 4313 Molecular Biophysics

1 Undergraduate Research
### PLNT 4353
Plant Breeding

### STAT 4013
Statistical Methods I (A) (if not used as (A) above)

| Total Hours | 20 |

1. Total hours of BIOC 1990 Freshman Research in Biochemistry and Molecular Biology and BIOC 4990 Undergraduate Research may not exceed 10 hours.

### 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 2025.