# Biology Major Requirements

**Catalog Year:** 2013-14  
**Degree:** Bachelor of Arts  
**Credit Hours:** 39+

“PR” indicates a pre-requisite. “CO” indicates a co-requisite.

Courses within this major may also satisfy general education requirements. Please consult [http://registrar.cofc.edu/general-edu](http://registrar.cofc.edu/general-edu) for more information.

## Required Courses

<table>
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<tr>
<th>Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Co-Requisites</th>
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<tbody>
<tr>
<td>BIOL 111</td>
<td>Introduction to Cell and Molecular Biology (3)</td>
<td>PR: None; CO: BIOL 111L</td>
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<tr>
<td>BIOL 111L</td>
<td>Introduction to Cell and Molecular Biology Lab (1)</td>
<td>CO: BIOL 111</td>
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<td>OR</td>
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<tr>
<td>HONS 151</td>
<td>Honors Biology I (3)</td>
<td>PR: None; CO: HONS 151L</td>
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<tr>
<td>HONS 151L</td>
<td>Honors Biology I Lab (1)</td>
<td>CO: HONS 151</td>
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<tr>
<td>BIOL 112</td>
<td>Evolution, Form, and Function of Organisms (3)</td>
<td>PR: BIOL 111 and 111L; CO: BIOL 112L</td>
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<tr>
<td>BIOL 112L</td>
<td>Evolution, Form, and Function of Organisms Lab (1)</td>
<td>CO: BIOL 112</td>
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<td>OR</td>
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<tr>
<td>HONS 152</td>
<td>Honors Biology II (3)</td>
<td>PR: HONS 151 and 151L</td>
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<tr>
<td>HONS 152L</td>
<td>Honors Biology II Lab (1)</td>
<td>CO: HONS 152</td>
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<tr>
<td>BIOL 211</td>
<td>Biodiversity, Ecology, and Conservation Biology (4)</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; CO: BIOL 211D</td>
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<tr>
<td>BIOL 211D</td>
<td>Biodiversity, Ecology, and Conservation Biology Discussion (0)</td>
<td>CO: BIOL 211</td>
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<td>OR</td>
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<tr>
<td>BIOL 305</td>
<td>Genetics (3)</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; PR or CO: BIOL 211 and 211D and MATH 250 or instructor permission</td>
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Complete 13 credit hours of BIOL courses from the following, including 9 credit hours at the 300-level or above; three courses must be taken with labs; two of the courses with labs must be at the 300-level or above. Labs may carry separate credit or be part of a 4 credit course. (Independent study, tutorial, Bachelor’s Essay, or BIOL 450 and 451 with labs do not fulfill the lab requirement).

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<thead>
<tr>
<th>Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Co-Requisites</th>
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<tbody>
<tr>
<td>BIOL 201</td>
<td>Human Physiology (4)</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L</td>
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<tr>
<td>BIOL 202</td>
<td>Human Anatomy (4)</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L</td>
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<td>BIOL 204</td>
<td>Man and the Environment (3)</td>
<td>PR: None</td>
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<td>BIOL 209</td>
<td>Marine Biology (4)</td>
<td>PR: None</td>
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<td>BIOL 250</td>
<td>Special Topics in Biology (1-4)</td>
<td>PR: One year of biology or instructor permission</td>
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<td>BIOL 300</td>
<td>Botany (4)</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 211D; PR or CO: BIOL 305 and MATH 250</td>
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<tr>
<td>BIOL 301</td>
<td>Plant Taxonomy (4)</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 211D; PR or CO: BIOL 305 and MATH 250</td>
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<tr>
<td>BIOL 302</td>
<td>Plant Anatomy (4)</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 211D; PR or CO: BIOL 305 and MATH 250</td>
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<tr>
<td>BIOL 303</td>
<td>Phycology (4)</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 211D; PR or CO: BIOL 305 and MATH 250</td>
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<tr>
<td>BIOL 304</td>
<td>Plant Physiology (4)</td>
<td>PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 211D and one year of chemistry; PR or CO: BIOL 305 and MATH 250</td>
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BIOL 305L  Genetics Lab (1)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; PR or CO: BIOL 211 and 211D, BIOL 305 and MATH 250

BIOL 310  General Microbiology (4)  PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; and BIOL 211 and 211D or CHEM 232 and 232L; PR or CO: MATH 250; BIOL 305 or CHEM 232 and 232L

BIOL 312  Molecular Biology (3)  PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250

BIOL 312L  Molecular Biology Laboratory (1)  PR or CO: BIOL 312 and MATH 250.  Students cannot use both BIOL 412 and BIOL 312L towards their major requirements.

BIOL 313  Cell Biology (3)  PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L; and BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250

BIOL 313L  Cell Biology Laboratory (1)  PR or CO: BIOL 313 and MATH 250

BIOL 314  Immunology (3)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and one year of Chemistry; PR or CO: MATH 250

BIOL 320  Histology (4)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 321  General and Comparative Physiology (4)  PR: One year of Chemistry and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 or CHEM 232 and 232L; PR or CO: MATH 250 or equivalent course in statistics or instructor permission

BIOL 322  Developmental Biology (4)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 323  Comparative Anatomy of Vertebrates (4)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 332  Vertebrate Zoology (4)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 333  Ornithology (4)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 334  Herpetology (4)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 335  Biology of Fishes (4)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 336  Parasitology (4)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 337  Invertebrate Zoology (4)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 338  Entomology (4)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 339  Dinosaur Biology (3)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 340  Zoogeography (3)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 341  General Ecology (4)  PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250
BIOL 342  Oceanography (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250; one year of college-level Math and one year of college-level Chemistry

BIOL 343  Animal Behavior (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 350  Evolution (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; PR or CO: MATH 250

BIOL 351  Principles of Neurobiology (3) PR: PSYC 103 and BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D or PSYC 214; PR or CO: MATH 250

BIOL 352  Neurobiology and Behavior (3) PR: BIOL 351 or PSYC 351 or PSYC 214; PR or CO: MATH 250

BIOL 353  Hormones and Behavior (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 354  Techniques in Neuroscience (4) PR: BIOL 351 or PSYC 351; MATH 250 or PSYC 211 and PSYC 220 or PSYC 250; and instructor permission

BIOL 357  Oceanographic Research (4) PR: BIOL 342 and instructor permission; PR or CO: MATH 250

BIOL 360  Introduction to Biometry (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250

BIOL 396  Biophysical Modeling of Excitable Cells (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and PHYS 111 and 111L and PHYS 112 and 112L or HONS 158 and 158L or BIOL 211 and 211D and BIOL 305 and PHYS 101 and 101L and PHYS 102 and 102L; PR or CO: MATH 250

BIOL 399  Tutorial (1-3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and MATH 305; 3.000 GPA or higher in BIOL; junior standing and tutor and department chair permission; PR or CO: MATH 250

BIOL 406  Conservation Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and BIOL 341 or permission of instructor; PR or CO: MATH 250

BIOL 410  Applied and Environmental Microbiology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 310 and one year of Chemistry; PR or CO: BIOL 305 and MATH 250

BIOL 411  Microtechnique and Cytochemistry (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of Chemistry; PR or CO: BIOL 305 and MATH 250

BIOL 412  Capstone in Molecular Biology (3) PR: BIOL 111/111L or HONS 151/151L, BIOL 112/112L or HONS 152/152L, BIOL 312, MATH 111 PR or CO: CHEM 351, MATH 250. Students cannot use both BIOL 412 and BIOL 312L towards their major requirements.

BIOL 414  Environmental Immunology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and one year of Chemistry; PR or CO: BIOL 305 and BIOL 312 or BIOL 313 or CHEM 351 and MATH 250

BIOL 420  General and Comparative Endocrinology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; PR or CO: BIOL 305 and MATH 250 and a course in physiology or instructor permission

BIOL 421  Topics in Physiology, Cell, and Molecular Biology of Marine Organisms (3) PR: BIOL 312 or 313; BIOL 321 and instructor permission; PR or CO: MATH 250

BIOL 444  Plant Ecology (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 341 or instructor permission; PR or CO: BIOL 305 and MATH 250

BIOL 445  Systematic Biology (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; junior standing and at least one upper division course in organismal Biology; PR or CO: MATH 250

BIOL 446  Special Topics in Neuroscience (3) PR: Junior or senior standing and instructor permission; PR or CO: MATH 250

BIOL 447  Seminar in Neuroscience (3) PR: BIOL 351 or PSYC 351 and BIOL 352 or PSYC 352; CO: BIOL 448 or PSYC 448; PR or CO: MATH 250
BIOL 448 Bachelor's Essay in Neuroscience (6) PR: BIOL 351 or PSYC 351 and BIOL 352 or PSYC 352 and permission of student's major department and the neuroscience program director; PR or CO: MATH 250

BIOL 449 Biology of Coral Reefs (3) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 341; 3.000 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

BIOL 450 Problems in Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.000 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250

BIOL 451 Problems in Marine Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.000 GPA or higher in science courses; junior standing and instructor and department chair permission; PR or CO: MATH 250

BIOL 452 Seminar (1) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D; 2.500 GPA or higher in BIOL; junior standing and 15 credit hours of BIOL completed; PR or CO: BIOL 305 and MATH 250

BIOL 453 Special Topics (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and instructor permission; PR or CO: BIOL 305 and MATH 250

BIOL 455 Seminar in Molecular Biology (2) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305, 312 and 313; PR or CO: MATH 250

BIOL 499 Bachelor's Essay (6) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.000 GPA or higher in BIOL; instructor and department chair permission; PR or CO: MATH 250

BIOL 501 Biology of the Crustacea (4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 337; 3.000 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

BIOL 502 Special Topics in Marine Biology (1-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305; 3.000 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

BIOL 503 Special Topics in Ecology (3-4) PR: BIOL 111 and 111L or HONS 151 and 151L and BIOL 112 and 112L or HONS 152 and 152L and BIOL 211 and 211D and BIOL 305 and 341; 3.000 GPA or higher in BIOL and junior standing and 15 credit hours of BIOL completed or instructor and department chair permission; PR or CO: MATH 250

Chemistry Requirement

☐ CHEM 101 General Chemistry (3) PR: None; CO: CHEM 101L
☐ CHEM 101L General Chemistry Lab (1) CO: CHEM 101
AND
☐ CHEM 102 Organic and Biological Chemistry (3) PR: CHEM 101 and 101L or CHEM 111 and 111L; CO: CHEM 102L
☐ CHEM 102L Organic and Biological Chemistry Lab (1) CO: CHEM 102

OR

☐ CHEM 111 Principles of Chemistry (3) PR or CO: unless students exempt MATH 111 (via diagnostic testing) or have completed this course as a prerequisite, they are required to take MATH 111 as a co-requisite; CO: CHEM 111L
☐ CHEM 111L Principles of Chemistry Lab (1) CO: CHEM 111
AND
☐ CHEM 112 Principles of Chemistry (3) PR: CHEM 111 and 111L or HONS 153 and 153L; CO: CHEM 112L (MATH 120 strongly recommended)
☐ CHEM 112L Principles of Chemistry Lab (1) CO: CHEM 112

Mathematics Requirement

☐ MATH 250 Statistical Methods I (3) PR: Either MATH 111, 120 or instructor permission

Notes:
• MATH 250 is a prerequisite for all 300-level BIOL courses.

• CHEM 221 is a recommended course.

• Honors students can take the alternative sequence of HONS191/HONS191L, HONS 192/HONS192L, HONS293/HONS293L, and HONS294/HONS294L in lieu of CHEM 111/111L, CHEM 112/112L, CHEM 231/231L, and CHEM 232/CHEM 232L

• Honors students can take the alternative sequence of HONS157/HONS157L and HONS 158/HONS158L in lieu of PHYS 111/111L and PHYS112/112L