

# Biology Curriculum Checklist

## Fall 2018 – Spring 2019 (updated 1/8/19)

<u>Completed</u>	<u>Course Number &amp; Title</u>	<u>Credits</u>
<input type="checkbox"/>	<b>BIOL 2000 Molecules &amp; Cells</b> (fall/spring)	_____
<input type="checkbox"/>	<b>BIOL 2010 Ecology &amp; Evolution</b> (fall/spring) <i>NOTE: there is no AP substitution for BIOL 2010 (Ecology &amp; Evolution)</i>	_____
<input type="checkbox"/>	<b>BIOL 2040 Investigations in Molecular Cell Biology Lab</b> (fall/spring) <i>NOTE: Taken after BIOL 2000</i>	_____
<input type="checkbox"/>	<b>Category A: Genes &amp; Genomes</b> <i>One from the following:</i> <ul style="list-style-type: none"> <li>• BIOL 3150 Introduction to Genomics (fall/spring)</li> <li>• BIOL 3190 Modern and Classical Genetics (spring)</li> <li>• BIOL 3050 Genetics (Summer only)</li> </ul>	_____
<input type="checkbox"/>	<b>Category B: Organismal &amp; Systems Biology</b> <i>One from the following:</i> <ul style="list-style-type: none"> <li>• BIOL 3030 Introduction to Physiology (fall/spring/summer)</li> <li>• BIOL 3210 Plant Biology (spring)</li> <li>• BIOL 4320 Developmental Biology (fall)</li> <li>• BIOL 4330 Human Physiology with Lab (spring) – <b>4 credits</b></li> <li>• BIOL 4450 Behavioral Ecology (spring)</li> <li>• BIOL 4590 Introduction to Neuroscience (fall)</li> </ul>	_____
<input type="checkbox"/>	<b>One Advanced Experience Course</b> (see listing on reverse side) <i>NOTE: Undergraduate Research can be used to satisfy the Advanced Experience requirement only if the student completes two semesters.</i>	_____
<input type="checkbox"/>	<b>Additional Biology Electives</b> (numbered 3000 and above – see listing on reverse)	_____
<b>BS Majors</b> – Total of <b>30 credits</b> for all biology courses.		Total: _____
<b>BA Majors</b> – Total of <b>33 credits</b> for all biology courses (9 credits can be from BA Elective List)		Total: _____

### CO-REQUISITES

<b>BS MAJORS</b>	<b>BA MAJORS</b>
<p><b>Chemistry</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> General Chemistry 1 &amp; 2 with Labs (CHEM 1109-1110; 1111-1112)</li> <li><input type="checkbox"/> Organic Chemistry 1 with Lab (CHEM 2231-2232)</li> <li><input type="checkbox"/> Organic Chemistry 2 with Lab (CHEM 2233-2234) or Biological Chemistry (BIOL 4350) or Biochemistry 1 (CHEM 4461)</li> </ul> <p><i>NOTE: Biochemistry courses (BIOL 4350 or CHEM 4461) used to replace Organic Chemistry 2 cannot be applied as a biology elective.</i></p> <p><b>Quantitative</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Calculus 1 (MATH 1100) or AP</li> <li><input type="checkbox"/> Calculus 2 (MATH 1101) or AP or Statistics (BIOL 2300 ,ECON 1151, MATH 3353)</li> <li><input type="checkbox"/> TWO Additional Courses from this list:           <ul style="list-style-type: none"> <li>• Intro Physics 1 (calculus-based) with Lab (PHYS 2100)</li> <li>• Intro Physics 2 (calculus-based) with Lab (PHYS 2101)</li> <li>• Statistics (BIOL 2300, ECON 1151, MATH 3353)</li> <li>• Econometrics Methods (ECON 2228)</li> <li>• Computer Science 1 (CSCI 1101)</li> <li>• Computer Science 2 (CSCI 1102)</li> <li>• Database Systems and Application (CSCI2257)</li> <li>• Calculus 2 (MATH 1101)</li> <li>• MATH courses numbered 2000 or higher</li> </ul> </li> </ul>	<p><b>Chemistry</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> General Chemistry 1 &amp; 2 with Labs (CHEM 1109-1110; 1111-1112)</li> </ul> <p><b>Quantitative</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Calculus 1 (MATH 1100) or AP credit</li> </ul> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p style="text-align: center;"><b>Calculus Placement &amp; Sequencing Notes</b></p> <p>Calculus 1 requirement is satisfied by MATH 1100 or an AP score of 4 or 5 on the AB exam.</p> <p>Calculus 1 &amp; 2 can be satisfied by completing MATH 1101 or an AP score of 4 or 5 on the BC exam.</p> </div>

## BIOLOGY ELECTIVES

*Biology Electives are 3 credits each unless otherwise noted.*

Fall	Spring
<p>Introduction to Physiology (BIOL 3030) **                      Cell Biology (BIOL 3040)                      Introduction to Genomics (BIOL 3150) – <b>4 credits</b>                      Modern and Classical Genetics (BIOL 3190) – <b>4 credits</b>                      Virology (BIOL 4090)                      Human Anatomy with Lab (BIOL 4260) – <b>4 credits</b>                      Developmental Biology (BIOL 4320)                      Molecular Biology (BIOL 4400)                      Molecular &amp; Cell Physiology of Exercise (BIOL 4520)                      Introduction to Neuroscience (BIOL 4590)                      Biochemistry 1 (CHEM 4461)                      Behavioral Neuroscience (PSYC 2285)*</p> <p>NOTE: Biological Chemistry will ONLY be offered                      SPRING term 2018-2019 year</p>	<p>Introduction to Physiology (BIOL 3030) **                      Cell Biology (BIOL 3040)                      Introduction to Genomics (BIOL 3150) – <b>4 credits</b>                      Modern and Classical Genetics (BIOL 3190)                      Plant Biology (BIOL 3210)                      Advanced Cell Biology (BIOL 4020)                      Deep Sea Biology (BIOL 4030)                      Microbiology (BIOL 4140) – <b>4 credits if taken with BIOL 4150 Lab</b>                      Introduction to Bioinformatics (BIOL 4200)                      Human Physiology with Lab (BIOL 4330) – <b>4 credits</b>                      Biological Chemistry (BIOL 4350)                      Behavioral Ecology (BIOL 4450)                      Cancer Biology (BIOL 4510)                      Principles of Immunology (BIOL 4570)                      Behavioral Neuroscience (PSYC 2285)*                      Sustainable Agriculture (ENVS 3315) *                      Introduction to Mass Spectrometry (CHEM3356)                      Biochemistry 2 (CHEM 4462)                      Introduction to Computational Chemistry (CHEM 5522)</p>

**\*Only two of these electives outside the department may be counted toward the Biology B.S. major.**

**\*\*Also offered in Summer 2019**

## ADVANCED EXPERIENCE COURSES

Fall	Spring
<p><b>Seminars (3 credits)</b>                      Topics in Developmental Biology (BIOL 5040) – <b>2 credits</b>                      The Microbiome (BIOL 5050)                      Environmental Disruptors of Development (BIOL 5130)                      Vaccine Development &amp; Public Health (BIOL 5150)                      Cancer as a Metabolic Disease (BIOL 5420)</p>	<p><b>Seminars (3 credits)</b>                      Nobel Winning Res in Medicine or Physio (BIOL 5010) – <b>2 credits</b>                      Recombinant DNA Technology (BIOL 5060)                      Phages: Viruses that rule the Planet (BIOL 5065)                      Microbial Community Ecology (BIOL 5071) – <b>2 credits</b>                      Immunity &amp; Infectious Disease (BIOL 5230)                      Literature for Neurological Diseases (BIOL 5370)                      Topics in Biomechanics (BIOL 5380)                      Cancer as a Metabolic Disease (BIOL 5420)                      Genomics and Personalized Medicine (BIOL5430)</p>
<p><b>Advanced Labs (3 credits)</b>                      Research in Evolutionary Genomics (BIOL 4802)                      Research in Molecular Microbiology Lab (BIOL 4810)                      Research in Molecular Biology Lab (BIOL 4830)                      Investigations in Cellular Re-Programming (BIOL4890)                      Advanced Lab in Cell Imaging (BIOL 5450) – <b>2 credits</b></p>	<p><b>Advanced Labs (3 credits)</b>                      Research in Molecular Biology Lab (BIOL 4830)                      Research in Molecular Genetics Lab (BIOL 4870)                      Advanced Lab in Cell Imaging (BIOL 5450) – <b>2 credits</b></p>

## Approved Biology BA Electives

Fall	Spring
<p>Philosophy of Science (PHIL 5593)                      Neurobiology of Eating &amp; Eating Disorders (PSYC3388)                      HIV, AIDS &amp; Ethics (THEO 5498)                      Metaphysics (PHIL 5529)</p>	<p>Cognitive Neuroscience: Exploring Mind &amp; Brain (PSYC 3371)                      Environmental Law &amp; Policy (ENVS 2256)                      Animals (HIST 4222)                      Science and Religion in American History (HIST 4891)</p>