

**BACHELOR OF SCIENCE in BIOLOGY**  
**Pre-medical Sciences Option**

Revised 10/18 GPC

*Concepts in Biology 1* (BIOL 114) and *Concepts in Biology 2* (BIOL 115) should be taken during the freshman year; *Microbiology* (BIOL 242) and *Cell Biology* (BIOL 271) should be taken during the sophomore year. *Anatomy and Physiology 1 and 2* (BIOL 173 and 174) should be taken before the junior year. A minimum of thirty-nine (39) credit hours in biology is required. In addition to the 27 credit hours of required, specified courses listed on this page, the student selects 12 credit hours of elective courses in biology.

Chemistry and mathematics courses should be scheduled as early as possible in the program of study.

<p><b>Biology Core Requirements</b> <input type="checkbox"/>                      (27 cr hrs)</p> <p>BIOL 114 Concepts in Biology 1 4 <input type="checkbox"/>                      BIOL 115 Concepts in Biology 2 4 <input type="checkbox"/>                      BIOL 242 Microbiology 4 <input type="checkbox"/>                      BIOL 271 Cell Biology 4 <input type="checkbox"/>                      BIOL 332 Genetics 3 <input type="checkbox"/>                      BIOL 351 Ecology 4 <input type="checkbox"/></p>	<p><b>Chemistry Requirement</b> (16 cr hrs) <input type="checkbox"/></p> <p>CHEM 115 Chem for the Sciences 1 4 <input type="checkbox"/>                      CHEM 116 Chem for the Sciences 2 4 <input type="checkbox"/>                      CHEM 230 Fund of Organic Chem* 4 <input type="checkbox"/>                      CHEM 341 Biochemistry 4 <input type="checkbox"/>  <b>*Due to professional school requirements, CHEM 231 and CHEM 232 should be substituted.</b></p>
<p><b>Physiology Requirement</b> (Select BIOL 479 AND one lecture course from among BIOL 472, 474, and 480)</p> <p>BIOL 479 Integrated Physiol Lab 1 <input type="checkbox"/>                      With one of the following:                      BIOL 472 Animal Cell Physiology 3 <input type="checkbox"/>                      BIOL 474 Human Physiology 3 <input type="checkbox"/>                      BIOL 480 Comp Animal Physiology 3 <input type="checkbox"/></p>	<p><b>Physics Requirement</b> (8 cr hrs; select one pair) <input type="checkbox"/></p> <p>PHYS 201 Introductory Physics 1 4 <input type="checkbox"/>                      PHYS 202 Introductory Physics 2 4 <input type="checkbox"/>  <b>OR</b>                      PHYS 211 General Physics 1                      PHYS 212 General Physics 2 4 <input type="checkbox"/>                      4 <input type="checkbox"/></p>
<p><b>Biology Elective Requirement</b> (12 cr hrs) Select 12 cr hrs of biology electives listed on p. 2, and list them below</p> <p>BIOL ____ _____ 3 <input type="checkbox"/>                      BIOL ____ _____ 3 <input type="checkbox"/>                      BIOL ____ _____ 3 <input type="checkbox"/>                      BIOL ____ _____ 3 <input type="checkbox"/></p>	<p><b>Mathematics Requirement</b> (6 cr hrs: select one pair) <input type="checkbox"/></p> <p>MATH 123 Essentials of Calculus 3 <input type="checkbox"/>                      MATH 141 Introduction to Statistics 3 <input type="checkbox"/>  <b>OR</b>                      MATH 125 Calculus 1 3 <input type="checkbox"/>                      MATH 126 Calculus 2 3 <input type="checkbox"/></p>

### Biology Elective Courses\*

\*Other approved biology courses may be substituted with written consent of pre-medical sciences advisor.

BIOL 174 Anatomy and Physiology 2	4	<input type="checkbox"/>
BIOL 212 Vertebrate Zoology	3	<input type="checkbox"/>
BIOL 233 Human Genetics	3	<input type="checkbox"/>
BIOL 333 Molecular Biology	3	<input type="checkbox"/>
BIOL 334 Molecular Biology Lab	1	<input type="checkbox"/>
BIOL 342 Medical Microbiology	3	<input type="checkbox"/>
BIOL 343 Immunology	3	<input type="checkbox"/>
BIOL 361 Comp Vert Anatomy	3	<input type="checkbox"/>
BIOL 364 Vertebrate Histology	3	<input type="checkbox"/>
BIOL 390 UG Research in Biol 1	3	<input type="checkbox"/>
BIOL 391 UG Research in Biol 2	3	<input type="checkbox"/>
BIOL 411 Radiation Biology	3	<input type="checkbox"/>
BIOL 430 Evolution	3	<input type="checkbox"/>
BIOL 431 Developmental Biology	3	<input type="checkbox"/>
BIOL 432 Microbial & Molec Genetics	3	<input type="checkbox"/>
BIOL 435 Bioinformatics	3	<input type="checkbox"/>
BIOL 442 Virology	3	<input type="checkbox"/>
BIOL 443 Advanced Immunology	3	<input type="checkbox"/>
BIOL 444 Plant Animal Tissue Cult	3	<input type="checkbox"/>
BIOL 445 Pharm for Health Sciences	3	<input type="checkbox"/>
BIOL 450 Mycology	3	<input type="checkbox"/>
BIOL 455 Environ Microbiology	3	<input type="checkbox"/>
BIOL 460 Population Biology	3	<input type="checkbox"/>
BIOL 470 Medical Parasitology	3	<input type="checkbox"/>
BIOL 476 Neurophysiology	3	<input type="checkbox"/>
BIOL 489 Current Topics in Biol	3	<input type="checkbox"/>
BIOL 490 Internship Biol/AHS	3	<input type="checkbox"/>
BIOL 493 Honors Indep Study 1	3	<input type="checkbox"/>
BIOL 494 Honors Indep Study 2	3	<input type="checkbox"/>

### Restrictions on Courses

1. A maximum of 3 cr hrs of BIOL 490 may be applied as biology elective credit toward the degree.

2. A maximum of 6 cr hrs from among BIOL 390, 391, 490, 493 and 494 may be applied as biology elective credit.

3. A limit of 6 cr hrs of Current Topics courses (BIOL 489) can be applied as elective biology credit.

4. Due to professional school requirements, BIOL 174 should be taken at BU or another four-year college or university. BIOL 173 is a prerequisite for BIOL 174.

## General Education Requirements

<p><b>Goal 1: Communication*</b> ( 7 points; 3 departments)</p> <p><u>ENG 101 Foundations of Coll Writ</u>      <u>3</u></p> <p><u>CHEM 341 Biochemistry 1</u>                <u>1</u></p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>Goal 6: Social Sciences**</b> (5 points; 2 departments)</p> <p><u>PSYH 101 General Psych</u>                <u>3</u></p> <p><u>SOC 211 Principles of Sociology</u>        <u>3</u></p> <p>_____</p> <p>_____</p> <p>_____</p>
<p><b>Goal 2: Information Literacy</b> ( 2 points; 1 department)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>Goal 7: Arts and Humanities</b> (5 points; 2 departments)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
<p><b>Goal 3: Analytical and Quantitative Skills</b> (5 points; 2 departments)</p> <p><u>BIOL 114 Concepts in Biology 1</u>        <u>1</u></p> <p><u>CHEM 115 Chem for the Sci 1</u>            <u>1</u></p> <p><u>MATH 141 Intro Stats*</u>                    <u>3</u></p> <p><u>MATH 123 Essentials of Calc*</u>            <u>3</u></p> <p>_____</p> <p>(*May substitute Calc 1 and 2 for 5 points)</p>	<p><b>Goal 8: Second Language</b> (2 points; 1 department)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
<p><b>Goal 4: Cultures and Diversity</b> (5 points; 2 departments)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>Goal 9: Healthy Living</b> (2 points; 1 department)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>
<p><b>Goal 5: Natural Sciences</b> (5 points; 2 departments)</p> <p><u>BIOL 114 Concepts in Biology 1</u>        <u>3</u></p> <p><u>CHEM 115 Chem for the Sci 1</u>            <u>3</u></p> <p>_____</p> <p>_____</p> <p>_____</p>	<p><b>Goal 10: Citizenship</b> (2 points; 1 department)</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

\* A second course in English writing course must be used for communication to satisfy the requirements of professional school admission.

\*\* Courses in Psychology and Sociology are needed to satisfy the requirements of professional school admission.

## Credit Counting Worksheet\*

Course	Name	Credits	Course	Name	Credits
Credits from page 1		_____			
<b>Below list all courses not listed on page 1</b>					
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

\*Sum total of all courses must add up to 120 cr hrs or more.

The courses listed below are either required or recommended for entrance into medical science programs and should be taken as elective credit:

Anatomy & Physiology 1 (BIOL 173), Anatomy & Physiology 2 (BIOL 174), General Psychology (PYSCH 101), Principles of Sociology (SOC 211), and one of Medical Ethics (PHIL 290), Social Implications of Biology (BIOL 254), or Human Sexuality (BIOL 230).