



**California State Polytechnic University, Pomona  
Degree Curriculum Sheet**

Plan (Major) **Biology**  
Subplan/Option **Microbiology**

Catalog Year **2016 - 2017**  
Minimum Units Required **180**

Name \_\_\_\_\_  
Student ID \_\_\_\_\_

<b>Required Core Courses</b>
BIO 122/122L - Foundations of Biology: Reproduction and Development (3/2) BIO 123/123L - Foundations of Biology: Biodiversity (3/2) BIO 211/211L - Biometrics (3/1) BIO 303 - Genetics (4) BIO 490 - Scientific Communication (1)
<b>Total Units 19</b>

<b>Required Subplan/Option Core Courses</b>
BIO 310 - Cell and Molecular Biology (4) MIC 201/201L - Basic Microbiology (3/1) MIC 428/428L - Microbial Physiology (4/1)
<b>Total Units 13</b>

<b>Elective Subplan/Option Core Courses</b>
Select 4 out of 6 courses listed below
MIC 310/310L - Applied Microbiology (3/2) MIC 320/320L - Food Microbiology (3/1) MIC 410/410L - Medical Bacteriology (3/2) MIC 415/415L - Immunology-Serology (3/2) MIC 425/425L - Medical Mycology (3/2) MIC 430/430L - General Virology (3/2)
<b>Total Units 19-20</b>

<b>Required Support Courses</b>
The following major support courses should be used to satisfy the indicated GE requirements. If these courses are not used to satisfy GE, the total units to degree may be more than 180 units. BIO 121/121L - Foundations of Biology: Energy and Matter - Cycles and Flows (3/2) (B2, B3)  CHM 121 - General Chemistry (3) (B1) and CHM 121L - General Chemistry Laboratory (1) (B3)  CHM 122 - General Chemistry (3) and CHM 122L - General Chemistry Laboratory (1)  CHM 123 - General Chemistry (3) and CHM 123L - General Chemistry Laboratory (1)  CHM 314 - Organic Chemistry (3) and CHM 317L - Organic Chemistry Laboratory (1) <b>Continue next column</b>

<b>Required Support Courses Con't.</b>
CHM 315 - Organic Chemistry (3) CHM 316 - Organic Chemistry (3)  CHM 327 - Biochemistry (3) and CHM 327L - Biochemistry Laboratory (1)  CHM 328 - Biochemistry (3) and CHM 328L - Biochemistry Laboratory (1)  CHM 329 - Biochemistry (3) and CHM 329L - Biochemistry Laboratory (1)  ENG 130 - Freshman English II (4) (A3) or PHL 202 - Critical Thinking (4) (A3)  ENG 107 - Stretch Composition III (4) (A2) or ENG 109 - Advanced Stretch Composition II (4) (A2) or ENG 110 - First-Year Composition (4) (A2)  MAT 120 - Calculus for the Life Sciences (4) (B4)  PHY 121 - College Physics (3) and PHY 121L - College Physics Laboratory (1)  PHY 122 - College Physics (3) and PHY 122L - College Physics Laboratory (1)  PHY 123 - College Physics (3) PHY 123L - College Physics Laboratory (1)  FN 203 - Health, Nutrition and the Integrated Being (4) (E) or PSY 201 - General Psychology (4) (E) or PSY 210 - Mind, Brain, and Behavior: An Integrated View (4) (E) or SCI 101/101A - Science and Mathematics: Freshman Experience I (1/1) (E) and SCI 102/102A - Science and Mathematics: Freshman Experience II (1/1) (E)
<b>Total Units 67</b>

<b>Elective Support Courses</b>
Select 17 or 18 units from the list of approved elective courses on the back of this curriculum sheet.
<b>Total Units 17-18</b>

<b>General Education Requirements</b>
<b>Area A Communication &amp; Critical Thinking (12 units)</b> 1. Oral Communication 2. Written Communication 3. Critical Thinking
<b>Area B Mathematics &amp; Natural Sciences (16 units)</b> 1. Physical Science 2. Biological Science 3. Laboratory Activity 4. Math/Quantitative Reasoning 5. Science & Technology Synthesis
<b>Area C Humanities (16 units)</b> 1. Visual and Performing Arts 2. Philosophy and Civilization 3. Literature and Foreign Language 4. Humanities Synthesis
<b>Area D Social Sciences (20 units)</b> 1. U.S. History, Constitution, American Ideals a. United States History b. Introduction to American Government 2. History, Economics and Political Science 3. Sociology, Anthropology, Ethnic & Gender Studies 4. Social Science Synthesis
<b>Area E Lifelong Understanding &amp; Self Development (4 units)</b>
<b>Total Units 68</b>

<b>American Institutions</b> Courses that satisfy this requirement may also satisfy GE Area D1	<b>8</b>
---	----------

<b>American Cultural Perspectives Requirement</b> Refer to the University Catalog General Education Program section for a list of courses that satisfy this requirement. Course may also satisfy major, minor, GE, or unrestricted elective requirements.	<b>4</b>
--	----------

All persons who receive undergraduate degrees from Cal Poly Pomona must pass the Graduation Writing Test (GWT). The test must be taken by the quarter following completion of 120 units for undergraduates.

## Elective Support Courses: 17-18 units

MIC 310/310L - Applied Microbiology (3/2)  
MIC 320/320L - Food Microbiology (3/1)  
MIC 330 - General Epidemiology (4)  
MIC 410/410L - Medical Bacteriology (3/2) \*  
MIC 415/415L - Immunology-Serology (3/2) \*  
MIC 425/425L - Medical Mycology (3/2) \*\*  
MIC 430/430L - General Virology (3/2) \*\*  
MIC 435/435L - Microbial Ecology (2/2)  
MIC 436/436L - Plant-Microbe Interactions (2/2)  
MIC 444 - Hematology (3) \*  
MIC 444L - Hematology Lab (1) \*  
MIC 445 - Immunohematology (3) \*\*  
MIC 445L - Immunohematology Lab (1) \*\*

BIO 200 - Special Study for Lower Division Students (1-2) or  
BIO 400 - Special Study for Upper Division Students (1-2)

BIO 235/235L - Human Physiology (4/1) \*\*  
BIO 420 - Water Pollution Biology (3)  
BIO 421 - Advanced Genetics (4)  
BIO 428/428L - Cellular Physiology (4/1)

BIO 441 - Internship in Biology (1-2) or  
BIO 461 - Undergraduate Research (2)

BIO 450 - Concepts of Molecular Biology (4) \*\*  
BIO 451 - Molecular Biology Techniques (3)  
BIO 451L - Molecular Biology Techniques Laboratory (2)  
BIO 455/455L - Molecular Biology of Recombinant DNA (2/2)  
BIO 459/459L - Bioinformatics (3/2)  
BIO 462 - Senior Thesis (2)  
BIO 465 - Stem Cell Biology (3)  
BIO 465L - Stem Cell Biology Lab (1)  
ZOO 234/234L - Human Anatomy (3/2) \*\*  
ZOO 422/422L - Histology (2/3)  
ZOO 425/425L - Medical Parasitology (3/2) \*\*  
CHM 221/221L - Quantitative Analysis (2/2) \* #  
CHM 301/301A - Fundamentals of Physical Chemistry (3/1) #  
CHM 304/304A - Elements of Physical Chemistry (3/1) #  
CHM 311 - Physical Chemistry (3) #  
CHM 318L - Organic Chemistry Laboratory (1) #  
CHM 319L - Organic Chemistry Laboratory (1) #  
CHM 331/331L - Clinical Chemistry (2/2) \*\*  
FST 325 - Food Safety and Current Issues (4)  
FST 430/430A - Principles of HACCP (3/1)

\* Required course for the admission to CLS programs

\*\* Recommended course for the admission to CLS programs

# Required course for chemistry minor (CHM 301/301AA or CHM 304/304A or CHM 311)

Note: Courses not listed may be acceptable following consultation with advisor.