

NOTE: This document can be used as a compact display of courses and other curricular requirements at the time of publication of the 2019-2020 catalog. The Degree Progress Report must be used to track students' progress in all degree requirements, throughout their Cal Poly Career.

Note: No major, support or concentration courses may be selected as credit/no credit.

<b>MAJOR COURSES (78)</b>	<i>Units</i>
BIO 160 Diversity and History of Life	4
BIO 161 Cell & Molecular Bio (B2&B4) <sup>1</sup>	4
BIO 162 Organismal Form & Function	4
BIO 263 Intro Ecology & Evolution	4
BIO 351 Principles of Genetics	5
BIO 413 <i>or</i> BIO 414	4
BIO 461 <i>or</i> BIO 462	2
<b>Ecology</b> <sup>3</sup> BIO 327, 363, 442; BOT 326; MCRO 436; MSCI 300	4
<b>Physiology</b> <sup>2,3</sup> BIO 361, 434, 435	4
<b>Conc. or General Curriculum in Biology</b> <sup>3</sup> (see reverse)	43

**SUPPORT COURSES (41)**

CHEM 127 Gen Chem for Ag & Life Sci I (B3&B4) <sup>1</sup>	4
CHEM 128 Gen Chem for Ag & Life Sci II	4
CHEM 129 Gen Chem for Ag & Life Sci III	4
CHEM 216 Organic Chem I <sup>4</sup> or CHEM 312 Survey of Organic Chem	5
MATH 161 Calculus for Life Sciences I (B1) <sup>1</sup>	4
MATH 162 Calculus for Life Sciences II (B1) <sup>1</sup>	4
PHYS 121 College Physics I	4
PHYS 122 College Physics II	4
PHYS 123 College Physics III	4
STAT 218 Applied Statistics for the Life Sciences	4

**GENERAL EDUCATION (GE)** **56**

72 units required, 16 of which are specified in Major and/or Support.

Minimum of 12 units required at the 300 level.

**Area A Communication** **12**

A1 Expository Writing .....	4
A2 Oral Communication .....	4
A3 Reasoning, Argumentation & Writing .....	4

**Area B Math, Science, & Quantitative Reasoning** **4**

B1 Math/Statistics (8 units in Support) <sup>1</sup> .....	
B2 Life Science (4 units in Major) <sup>1</sup> .....	
B3 Physical Science (4 units in Support) <sup>1</sup> .....	
B4 One lab taken with B2 or B3 (in Major) <sup>1</sup> .....	
B7 Upper-division elective .....	4

(formerly Area F)

**Area C Arts and Humanities** **20**

C1 Literature .....	4
C2 Philosophy .....	4
C3 Fine/Performing Arts .....	4
C4 Upper-division elective .....	4
C1-C5 Elective .....	4

**Area D Society and the Individual** **16**

D1 The American Experience (40404) .....	4
D2 Political Economy.....	4
D3 Comparative Social Institutions .....	4
D5 Upper-division elective .....	4

**Area E Lifelong Learning and Self-Development** **4**

(formerly Area D4)

**FREE ELECTIVES** ..... **5**

<sup>1</sup> Required in Major/Support; also satisfies GE.

<sup>2</sup> Students planning to take Anatomy and Physiology courses should take BIO 361 to fulfill this requirement.

<sup>3</sup> Courses taken to meet a major or support requirement cannot be double-counted in the concentration or general curriculum.

<sup>4</sup> Students in the Molecular and Cellular Biology concentration should take CHEM 216 to fulfill this requirement.

**OTHER DEGREE REQUIREMENTS:**

- **Cal Poly, Higher Ed, and Major GPA must all be at least 2.00**
- **For students admitted Fall 2016 and after, a grade of C- or higher is required in GE A1, A2, A3, and one GE B1 course**

**All students must complete:**

- **United States Cultural Pluralism Requirement**
- **Graduation Writing Requirement**
- **60 units Upper Division (any 300-400 level classes)**
- **Upper Division units in the Major: 27**
- **Residency Requirements: See Degree Progress Report for details**

**GENERAL CURRICULUM** (default if no concentration declared)

<b>General Biodiversity</b> <sup>5,7</sup> BIO 321, 322, 323, 324 329, 335, 336, 429; BOT 313; MCRO 224 <sup>9</sup> , 402; MSCI 324	4
<b>400-Level Electives</b> <sup>5,6</sup> Select from any 400 level BIO/BOT/MCRO/MSCI course, except BIO 400, 450, 461, 462, 463.	12
<b>300-400 Level Electives</b> <sup>5,7,12</sup> Select any 300-400 level BIO/BOT/MCRO/MSCI course, except BIO 300, 330, 400, 450, 461 <sup>12</sup> , 462 <sup>12</sup> , 463	8
<b>APPROVED ELECTIVES</b> <sup>3,5,8</sup> At least 12 units must be upper division. At least 4 units must be BIO/BOT/MCRO/ MSCI courses.	
<b>General Electives</b> <sup>10,12</sup> Any BIO/BOT/MCRO/MSCI course.	4
<b>Additional Electives</b> Select from the following <sup>11</sup> : AG/EDES/ENGR/ISLA/SCM/UNIV 350; ANT 401, ASCI 239, 351, 403; ASCI 405 or BIO 407; ASCI 406, 438; CHEM 217, 218, 220, 223, 313 or 371, 331, 341, 372, 377, 418, 428, 474; COMS 418; CSC 101; DATA 301; ENGR 322/SCM 302 <sup>11</sup> ; ERSC/GEOG 250; ES/WGS 350; FSN 310; GEOG 440; KINE 406, 445, 446; LA/NR 218 or GEOG 318; NR 141, 142, 404, 416, 418, 425; PHIL 323 or PHIL 339 or PHIL 341; PSC 201; PSY 320, 340; SS 120, 321, 322, 422; STAT 313, 324 or 334, 330, 416, 419, 421	15
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**ANATOMY AND PHYSIOLOGY CONCENTRATION**

BIO 452 Cell Biology	4
CHEM 371 or CHEM 313	5
<b>A&amp;P Biodiversity</b> <sup>5,7</sup> AEPS/BOT 323, BIO 321, 322, 323, 324, 329, 335, 336, 415; BOT 313; MCRO 224 <sup>9</sup> ; MSCI 324, 437	4
<b>Core Anatomy and Physiology</b> <sup>5,7</sup> BIO 406, 407 or ASCI 405, BIO 408, 409, 410, 426.	16
<b>Department Electives</b> <sup>5,7</sup> BIO 321, 322, 323, 324, 329, 335, 336, 405, 406, 407 or ASCI 405, 408, 409, 410, 415, 426, 428, 429, 434, 435, 470; BIO/CHEM 475; MCRO 224 <sup>9</sup> , 225, 320, 342, 402, 423, 424	3
<b>Approved Electives</b> <sup>5,8,10</sup> (At least 4 units must be upper div) AEPS/BOT 323; ANT 401; ASCI 351, 406, 438; BIO 300 <sup>10</sup> , 321, 322, 323, 324, 329, 335, 336, 400 <sup>10</sup> , 405, 406, 407 or ASCI 405, 408, 409, 410, 415, 426, 428, 429, 434, 435, 461 <sup>12</sup> , 462 <sup>12</sup> , 463, 470; BIO/CHEM 475; BOT 313; CHEM 217, 218, 220, 221, 223, 372, 418, 428; COMS 418; CSC 101, DATA 301; ENGR 322/SCM 302 <sup>11</sup> ; FSN 310; KINE 406, 445, 446; MCRO 225, 320, 342, 402, 423, 424; MSCI 324, 437; PHIL 323 or PHIL 339 or PHIL 341; PSY 320, 340; STAT 313; WGS/ES 350.	11
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**MOLECULAR AND CELLULAR BIOLOGY CONCENTRATION**

BIO 452 Cell Biology	4
BIO/CHEM 475 Molecular Biology Laboratory	3
CHEM 217 Organic Chemistry II	3
CHEM 220 Organic Chem Lab II	1
CHEM 371 Biochemical Principles	5
MCRO 224 General Microbiology I	5
<b>Advanced Cell and Molecular Applications</b> <sup>5,7</sup> Select from the following: ASCI 403; BIO 405, 426, 428; BIO/CHEM 441, 476; CHEM 372, 418, 474; MCRO 402, 433	10
<b>Approved Electives</b> <sup>3,5,8,13,14</sup> Select from any 300-400 level BIO/BOT/MCRO/ MSCI courses (including Advanced Cell and Molecular Applications from the list above); or select from the following (at least 5 units must be upper division): ASCI 403, 406; BIO/CHEM 202; CHEM 218, 223, 331, 372, 377, 418, 428, 474; CSC 101; DATA 301; ENGR 322/SCM 302 <sup>11</sup> ; ES/WGS 350; PHIL 323 or PHIL 339 or PHIL 341; STAT 313	12
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**ECOLOGY, EVOLUTION, BIODIVERSITY, AND CONSERVATION**

BIO 363 Principles of Conservation Biology	4
LA/NR 218 or GEOG 318 Applications in GIS <sup>7</sup>	3
<b>Biodiversity</b> <sup>7,15</sup> BIO 321, 322, 323, 324, 335, 336; BOT 313, 433; MCRO 224; MSCI 437	12
<b>Ecology &amp; Evolution</b> <sup>7</sup> BIO 415, 442, 444, 445, 446; BOT 326; MCRO 436; MSCI 300	4
<b>Conservation</b> <sup>7,15</sup> BIO 427; MSCI 428, 439; NR 416	4
<b>Approved Electives</b> <sup>3,5</sup> ASCI 239; BIO 300 <sup>10</sup> , 321, 322, 323, 324, 327, 329, 330, 335, 336, 400 <sup>10</sup> , 415, 419, 427, 429, 434, 435, 442, 444, 445, 446, 450 <sup>10</sup> , 461 <sup>12</sup> , 462 <sup>12</sup> , 463; BOT 311, 323, 326; GEOG 440; MCRO 224, 436; MSCI 300, 324, 428, 437, 439; NR 141, 142, 404, 416, 418, 425; ENGR 322/SCM 302 <sup>11</sup> ; STAT 313, 324 or 334, 330, 331, 416, 419, 421	16
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<sup>5</sup> Consultation with advisor is recommended prior to selecting electives; bear in mind your selection may impact pursuit of post-baccalaureate studies and/or goals.

<sup>6</sup> Excess units will be applied to 300-400 level Electives.

<sup>7</sup> Excess units will be applied to Approved Electives.

<sup>8</sup> Selecting a GE course that double counts as an elective may increase free electives needed. It may also cause an upper-division unit shortage. Take care to ensure that you have selected enough 300 and 400-level courses to meet the 60-unit Upper-Division Requirement, and that you meet the 180 units required for the degree.

<sup>9</sup> Recommended for students interested in health science careers.

<sup>10</sup> Maximum of 6 units may be applied toward Approved Electives from: BIO 200, 300, 400, 450.

<sup>11</sup> Maximum of 2 units may be applied towards Approved Electives from ENGR 322/SCM 302.

<sup>12</sup> If BIO 461 or BIO 462 is used to meet the senior project requirement, it cannot also be counted as an elective.

<sup>13</sup> Consultation with your faculty advisor for approval to use other relevant upper-division coursework in other departments.

<sup>14</sup> Maximum of 6 units may be applied towards Approved Electives: BIO 300, 400, 450, 485, 495.

<sup>15</sup> Students seeking certification (i.e. as an Associate Wildlife Biologist from the Wildlife Society) should see their faculty advisor for guidance.