



# Bachelor of Science

## BIOLOGY: Cell and Molecular Biology Emphasis

**Advisement Form 2010-2011**

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

Lower Division Major Requirements (8 units)	Un.	Instit.	Course	Units	Grade	Term	Prerequisites, GE & Comments
BIOL 200 Principles of Organismal and Population Biology	4						GE: B2
BIOL 201 Principles of Cell and Molecular Biology	4						Prereq: CHEM 105 or 121; GE: B2
<b>Required Supporting Courses</b>							
<b>Chemistry (15 units)</b>							
<i>A year-long organic chemistry sequence with laboratory taken at a community college may be accepted in lieu of CHEM 311, 312, 314, 315.</i>							
CHEM 121 General Chemistry I	4						Prereq: Passing score on CHEM placement exam or CHEM 105; GE: B1
CHEM 122 General Chemistry II	4						Prereq: CHEM 121 with a C or better; GE: B1
CHEM 311 Organic Chemistry I	3						Prereq: CHEM 122 with a C or better
CHEM 312 Organic Chemistry I Lab	1						Prereq: CHEM 311 (or taken concurrently) with a C or better
<i>Select <u>one</u> of the following chemistry options (3-4 units):</i>							
CHEM 318 Biological Chemistry	3						Prereq: CHEM 311 with a C or better
CHEM 314 Organic Chemistry II <i>and</i>	3						Prereq: CHEM 311 with a C or better
CHEM 315 Organic Chemistry II Lab	1						Prereq: CHEM 311, 312, & 314 (or taken concurrently) with C's or better
<b>Physics (8 units) Select <u>one</u> of the following series:</b>							
PHYS 100 Introduction to Physics I <i>and</i>	4						GE: B1
PHYS 101 Introduction to Physics II	4						Prereq: PHYS 100; GE: B1
PHYS 200 General Physics I <i>and</i>	4						Prereq: MATH 150; GE: B1
PHYS 201 General Physics II	4						Prereq: PHYS 200; GE: B1
<b>Statistics and Mathematics (7 units)</b>							
BIOL 203 Quantitative Methods for Biology	3						Prereq: Passing score on the ELM or MATH 105 or equivalent; GE: B3, B4
MATH 150 Calculus I	4						Prereq: Passing score on the Calculus Placement Exam or MATH 105; GE: B3
<b>Upper Division Major Requirements in the Major (40 units)</b>							
<b>Required Biology Courses (31 Units)</b>							
BIOL 300 Cell Biology	4						Prereq: BIOL 201 with a C or better & CHEM 122
BIOL 301 Microbiology	4						Prereq: BIOL 201 with a C or better & CHEM 122
BIOL 302 Genetics	4						Prereq: BIOL 201 with a C or better & CHEM 122
BIOL 303 Evolutionary Biology	3						Prereq: BIOL 200 & 201
BIOL 400 Molecular Biology	4						Prereq: BIOL 300 or 302 with a C or better
BIOL 401 Biotechnology and Recombinant DNA Techniques	5						Prereq: BIOL 400 with a C or better

Biology Requirements continued...	Un.	Instit.	Course	Units	Grade	Term	Prerequisites, GE & Comments
BIOL 431 Bioinformatics	4						Prereq: BIOL 302 with a C or better; GE: B2, B4, UDIGE
BIOL 499 Senior Capstone in Biology	3						Prereq: Consent of instructor
<b>Biology Electives (9 units)</b> <i>Select a minimum of <u>nine</u> units from the following:</i>							
BIOL 402 Toxicology	3						Prereq: BIOL 201 with a C or better & CHEM 122
BIOL 403 Foundations of Structural Biology	4						Prereq: BIOL 300
BIOL 404 Plant and Animal Tissue Culture	3						
BIOL 405 Biochemical Engineering	4						Prereq: CHEM 318
BIOL 408 Nanobiotechnology	3						Prereq: BIOL 400
BIOL/PHYS 416 Radiobiology and Radionuclides	3						Prereq: BIOL 300, PHYS 201, & BIOL/PHYS/HLTH 434
BIOL 420 Cellular and Molecular Immunology	4						Prereq: BIOL 300 with a C or better & CHEM 122
BIOL 421 Virology	3						Prereq: BIOL 301 with a C or better & CHEM 122
BIOL 422 Molecular Plant Physiology	4						Prereq: BIOL 300 with a C or better
BIOL 423 Cellular and Molecular Neurobiology	3						Prereq: BIOL 300 with a C or better & CHEM 122
BIOL 424 Human Physiology	3						Prereq: BIOL 300 with a C or better & CHEM 122
BIOL 425 Human Genetics	3						Prereq: BIOL 300 & 302 with C's or better & CHEM 122
BIOL 426 Hematology	4						Prereq: BIOL 300
BIOL 427 Developmental Biology	4						Prereq: BIOL 300 with a C or better & CHEM 122
BIOL 428 Biology of Cancer	3						Prereq: BIOL 300 with a C or better & CHEM 122
BIOL 432 Principles of Epidemiology and Environmental Health	3						Prereq: BIOL 201 with a C or better & CHEM 122; GE: B2, D, UDIGE
BIOL 433 Ecology and the Environment	4						Prereq: BIOL 200; GE: B2, UDIGE
<i>No more than <u>two</u> units from the following may count towards the nine units of Biology electives:</i>							
BIOL 492 Internship	2-3						Prereq: Consent of instructor & program approval
BIOL 494 Independent Research	1-3						Prereq: Consent of instructor & program approval
BIOL 497 Directed Study	1-3						Prereq: Consent of instructor & program approval

### Additional University Graduation Requirements

<b>9 Units Upper Division Interdisciplinary GE (UDIGE) at CSUCI (courses numbered 330-349 or 430-449)</b> <i>Upper division standing or instructor consent required for these courses</i>		
Course 1 (in major) <u>BIOL 431</u>	Course 2 _____ (may choose BIOL 432 or 433)	Course 3 _____ (outside major)
<b>American Institutions Requirements:</b> US History _____ (Choose from HIST 270, 271, 272, 275 or 350)		State and Local Gov't _____ (choose POLS 150)
<i>Students must receive a grade of C or better in the Language and Multicultural Requirements</i>		
<b>Language Requirement:</b> GE C3a _____ (one semester of college level language)		
<b>Multicultural Requirement:</b> GE C3b _____		
<i>Minimum total units to graduate: 120 of which 40 must be upper division. Please see catalog for a complete list of graduation requirements.</i>		
Advisor Comments: _____		