

BIOLOGY ADT TO CSU EAST BAY BIOLOGY B.S. – CELL AND MOLECULAR BIOLOGY CONCENTRATION

ADT BIOLOGY – 60 Sem. Units	Sem. Units	Community College Courses
CSUGE or IGETC	39	<i>CSU general education certification requires completion of all requirements in Areas A through E, approximately 39 units</i>
AREA D REQUIREMENT: US History, Constitution & American Ideals Code Requirement	3-9	US-1: US-2: US-3:
Diversity/Social Justice/Sustainability <i>Can be fulfilled in area C or D</i>	3-9	DIV: SJ: SUS:
Second Composition (Comp II) Can be fulfilled with A3 Any Composition course with ENGL 100 as a prerequisite	3	
<i>The following areas are for the CID TMC/Courses and matching Community College Courses</i>		
Major Core (C-ID)	8	Community College Courses
BIOL 190 - Cell and Molecular Biology (4)	4	
BIOL 140 - Organismal Biology (4)	4	
LIST A	22	
CHEM 120S - General Chemistry for Science Majors (10)	10	
MATH 210 - Single Variable Calculus I – Early Transcendentals (4)	4	
PHYS 105 - Physics: Algebra/Trigonometry-Based Physics A (4)	4	
PHYS 110 - Physics: Algebra/Trigonometry-Based Physics B (4)	4	
LIST B: Choose 1 course	0-4	
Any course articulated as lower division preparation in the Biology major at a CSU.		
Total Units ADT *BIOLOGY *	60	

PLEASE NOTE: This page assumes Semester Units.

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CSUEB: BIOLOGICAL SCIENCES B.S. <i>Complete Degree in 60 Semester Units</i>	Semester UNITS	NOTES
GRADUATION REQUIREMENTS <i>These should be fulfilled at the Community College, however if not taken at the Community College, they must be completed at CSU East Bay</i>		
US History, Constitution & American Ideals	0-9	
1) First Category US-1	0-3	
2) Second Category US-2	0-3	
3) Third Category US-3	0-3	
These courses must be taken at CSU East Bay		
Upper Division GE <i>See catalog</i>	9	CSUEB COURSES
Please note: A minimum of three courses in the Upper Division General Education pattern must have a topic/learning outcome oriented toward one of the following topic areas (overlays): Diversity, Social Justice, or Sustainability.		
Area B6 Upper Division Science course	3	Course: OVERLAY:
Area C4 Upper Division Humanities course	3	Course: OVERLAY:
Area D4 Upper Division Social Sciences course	3	Course: OVERLAY:
Upper Division Core	7	
BIOL 310 - Genetic Analysis I Units: 4		
BIOL 320 - Evolutionary Biology Units: 3		
Concentrations: 36 units		
Cell and Molecular Biology Concentration		
Upper Division Coursework	29	
BIOL 410 - Genetic Analysis II Units: 3	3	
BIOL 424 - Bioinformatics Units: 3	3	
BIOL 426 - Advanced Molecular and Cell Biology Units: 3	3	
BIOL 427 - Molecular and Cell Biology Lab Units: 3	3	
BIOL 428 - Genomics Units: 3	3	
CHEM 331 - Organic Chemistry I Units: 5	5	
CHEM 332 - Organic Chemistry II Units: 5	5	
CHEM 441 - Biochemistry I Units: 4	4	
Electives	7+	Choose a minimum of 7 units of electives from the following list of courses. Note: BIOL 398 Co-operative Education and/or BIOL 490 Independent Study may be used for a maximum total of 3 units elective credit. Enrollment in these courses requires approval by a faculty member and the Department Chair.
BIOL 330 - General Microbiology Units: 5		
BIOL 398 - Internship Units: 1-4		
BIOL 415 - PCR, Sequencing and Fragment Analysis Units: 3		
BIOL 420 - Cell and Molecular Biology Undergraduate Seminar Units: 2		
BIOL 425 - Techniques in Mammalian Cell Culture Units: 3		

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BIOL 431 - Medical Microbiology Units: 5		
BIOL 434 - Molecular Microbiology Units: 3		
BIOL 440 - Molecular Virology Units: 3		
BIOL 443 - Hematology Units: 4		
BIOL 445 - Immunology Units: 3		
BIOL 466 - Population Biology Units: 4		
BIOL 468 - Molecular Ecology Units: 4		
BIOL 490 - Independent Study Units: 1-4		
BIOL 498 - Internship Units: 1-4		
CHEM 442 - Biochemistry II Units: 4		
ADDITIONAL COURSE to reach 60 Units	8	<i>These courses may be additional Major Courses or prerequisites not taken at the Community College</i>
<i>If needed</i>		
Total Semester Units at CSUEB	60	60

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FIRST SEMESTER JUNIOR YEAR			
Register to take the University Writing Skills Requirement			
UDGE B6	COURSE:	OVERLAY:	3
UD CORE	BIOL 310	GENETIC ANALYSIS I	4
CONCENTRATION	CHEM 331	ORGANIC CHEMISTRY I	5
ELECTIVE			3
		TOTAL:	15
SECOND SEMESTER JUNIOR YEAR			
TAKE THE UNIVERSITY WRITING SKILLS TEST			
UD CORE	BIOL 320	EVOLUTIONARY BIOLOGY	3
CONCENTRATION	BIOL 410	GENETIC ANALYSIS II	3
CONCENTRATION	BIOL 428		3
CONCENTRATION	CHEM 332	ORGANIC CHEMISTRY II	5
		TOTAL:	14
THIRD SEMESTER SENIOR YEAR			
Verify that you have completed the University Writing Skills Requirement. Check your MyCSUEB "Degree Audit Report" (DAR) and email any discrepancies to The ADT ADVISER.			
UDGE C4	COURSE:	OVERLAY:	3
UDGE D4	COURSE:	OVERLAY:	3
CONCENTRATION	BIOL 424	BIOINFORMATICS	3
ELECTIVE	CHOOSE FROM BIOL LIST	MUST BE 4 UNITS	4
ELECTIVE			3
		TOTAL:	16
FOURTH SEMESTER SENIOR YEAR			
See the ADT ADVISER and apply for graduation through MyCSUEB by the posted deadline, available at Important Dates			
CONCENTRATION	CHEM 441	BIOCHEMISTRY I	4
CONCENTRATION	BIOL 426	ADVANCED MOLECULAR & CELL BIOLOGY	3
CONCENTRATION	BIOL 427	MOLECULAR & CELL BIOLOGY LAB	3
ELECTIVE	CHOOSE FROM BIOL LIST		3
ELECTIVE			2
		TOTAL:	15
GRAND TOTAL:			60