Degree: BS + MS Biological Sciences (Microbiology concentration) - thesis				
Requirement Area	**Course**	**Course Title**	**Prerequisites**	**Units**
First Semester (FALL)				
GE elective	BIOL 130	Connecting to Biology		2
1C		Oral Communication		3
1A		English Composition		3
2/LD major	MATH 130	Calculus I		4
LD major	PHYS 125	Principles of Physics I		4
			Total:	16
Second Semester (SPRING)				
5B/LD major	BIOL 140 A	Principles of Cell & Mol. Biology		5
LD major	PHYS 126	Principles of Physics II	PHYS 125	4
1B		Critical Thinking and Composition		3
3A		Arts		3
			Total:	15
Third Semester (FALL)				
5A/LD major	CHEM 111	General Chemistry I		3
5C/LD major	CHEM 111L	General Chemistry I Lab		2
LD major	BIOL 140B	Principles of Organismal Biology	BIOL 140A	5
6/Social Justice Overlay		Ethnic Studies		3
4/Code 1		Social Science and Behavioral Sciences and U.S. Code (US 1,2)		3
			Total:	16
Fourth Semester (SPRING)				
LD major	CHEM 112	General Chemistry II	CHEM 111 and CHEM 111L	3
LD major	CHEM 112L	General Chemistry II Lab	CHEM 111 and CHEM 111L	2
UD major	BIOL 310	Genetic Analysis I	BIOL 140B	4
3B		Humanities		3
4/Code 2		Social Science and Behavioral Sciences and U.S. Code (US 1,3)		3
			Total:	15
Fifth Semester (FALL)				
UD major	CHEM 331	Organic Chemistry I	CHEM 112 and CHEM 112L	5
UD major	BIOL 330	General Microbiology	BIOL 140B	5
UD major	BIOL 320	Evolutionary Biology	BIOL 310	3
UWR		University Writing Req		3
			Total:	16
Sixth Semester (SPRING)				
UD major	CHEM 332	Organic Chemistry II	CHEM 331	5
UD3		UD Arts OR Humanities	Completion of 1A, 1B, 1C and 2	3
UD5/Sustainability overlay		Upper division Physical or Biological Science	Completion of 1A, 1B, 1C and 2	3
GE elective/Diversity Overlay		Student choice		3
			Total:	14
Seventh Semester (FALL)				
UD major	BIOL 340	Survey of Biochemistry	CHEM 230 or CHEM 332	3
Major elective		Student choice		4
UD4		UD Social Science and Behavioral Sciences	Completion of 1A, 1B, 1C and 2	3
Core requirement	BIOL 601A	Foundations of Scientific Research		1
Elective		Student-advisor choice		3
			Total:	14
Eighth Semester (SPRING)				
Major elective		Student choice		4
Major/Capstone	BIOL 430	Microbioal Physiology and Metabolism	BIOL 330	3
Core requirement	BIOL 601B	Foundations of Scientific	BIOL 601A	1
Elective		Elective (student-advisor choice)		3
Elective		Elective (student-advisor choice)		3
			Total:	14
Ninth Semester (FALL)				
Research Specialization	BIOL 616 or BIOL 618 or BIOL 652 or BIOL 671	Elective (student-advisor choice)		3
Research Specialization	BIOL 616 or BIOL 618 or BIOL 652 or BIOL 671	Elective (student-advisor choice)		3
Elective	BIOL	Elective (student-advisor choice)		3
			Total:	9
Ten Semester (SPRING)				
Elective	BIOL	Elective (student-advisor choice)		3
Communicating the research specialization	BIOL 610 or 630 or 650 or 670	Seminar (student-adviosr choice)		2
Capstone	BIOL 691	University Thesis		5
			Total:	10
			Total Units:	139

Note: All courses counting towards major must be complete with grade "C-" or better.

Note: No changes to, or from, the credit/no credit pattern are permitted after the Grade Type Change period. There are no exceptions to this rule. Courses in a student's major department, regardless of course prefix, may not be taken "CR/NC," unless that is the only grading pattern in the course.

CSUEB General Breadth and Graduation Requirement Checklist
Area 1 (9 units): Communication in the English Language & Critical Thinking (Must earn passing grade of C-/CR or better)
☐ 1A. Lower-Division English Composition
☐ 1B. Lower-Division Critical Thinking
☐ 1C. Lower-Division Oral Communication
Area 2 (3 units) : Mathematical Concepts and Quantitative Reasoning
☐ Area 2. Lower-Division Mathematical Concepts and Quantitative
Area 3 (6 units): Arts & Humanities - Minimum of two different disciplines
☐3A. Lower-Division Arts
☐3B. Lower-Division Humanities
Area 4 (6 units) : Social Sciences and Behavioral - Minimum of two different
☐ Area 4. Lower-Division Social and Behavioral Sciences
☐ Area 4. Lower-Division Social and Behavioral Sciences
Area 5: Physical and Biological Sciences
☐ 5A. Lower-Division Physical Sciences
☐ 5B. Lower-Division Biological Sciences
☐ 5C. Laboratory Activity (may be part of 5A or 5B course, as long as 7 units
Area 6 (3 units): Ethnic Studies
☐ Area 6. Lower-Division Ethnic Studies
Second Composition : Requires completion of GE 1A with a C-/CR or better. Must be completed before attaining junior standing.
☐ Second Composition (Required as part of 1B for 2025-26 or later catalog)
U.S. Code (American Institutions Requirement) - Two courses (6 units)
☐ Code 1.
☐ Code 2.
Upper Division GE Requirements (9 units): Should be taken after
☐ GE-UD-3: Upper-division Arts or Humanities (3 units)
☐ GE-UD-4: Upper-division Social and Behavioral Sciences (3 units)
☐ GE-UD-5 Upper-division Science or Mathematical Concepts/Quantitative
Overlay Requirements (9 units): Courses may be upper or lower division,
☐ Diversity (Div)
☐ Social Justice (SJ)
☐ Sustainability (S)
GE/breadth courses:
List any potential double-counting with major requirements.
4+1 Blended Program
List all Blended double-counting (maximum 12 units)
11 units of elective credit

Undergraduate Requirements

Graduate Courses taken at Undergrad level/Double Counting Courses

Graduate Courses taken Ninth and Tenth Semester