Degree: BS + MS Biological Sciences (Molecular and Biomedical Sciences concentration) - thesis				
Requirement Area	**Course**	**Course Title**	**Prerequisites**	**Units**
First Semester (FALL)				
GE elective	BIOL 130	Connecting to Biology		2
1C	COMM 100	Oral Communication		3
2/LD major	MATH 130	Calculus I		4
LD major	PHYS 125	Principles of Physics I		4
4/Code 1		Social and Behavioral Sciences and U. S. Code (1,2)		3
			Total:	16
Second Semester (SPRING)				
5B/LD major	BIOL 140A	Principles of Cell and Mol. Biol.		5
1B		Critical Thinking and composition		3
LD major	PHYS 126	Principles of Physics II	PHYS 125	4
1A		English composition		3
			Total:	15
Third Semester (FALL)				
LD major	BIOL 140B	Principles of Organismal Biol.	BIOL140 A	5
5A/LD major	CHEM 111	General Chemistry I		3
5C/LD major	CHEM 111L	General Chemistry I Lab		2
3A		Arts		3
6/social Justice Overlay		Ethnic studies		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	BIOL140B	4
3B		Humanities		3
4/Code 2		Social and Behavioral Sciences and U. S. Code (1,3)		3
			Total:	15
Fifth Semester (FALL)				
UWR		University Writing Req		3
UD major	CHEM 331	Organic Chemistry I	CHEM 112 and CHEM 112L	5
UD major	BIOL320	Evolutionary Biology	BIOL 310	3
GE/Sustainability Overlay		Elective (student choice)		3
GE/Diversity Overlay		Elective (student choice)		4
			Total:	18
Sixth Semester (SPRING)				
UD3		UD Arts OR Humanities	Completion of 1A, 1B, 1C and 2	3
UD major	CHEM 332	Organic Chemistry II	CHEM 331	5
Major Elective		Student choice		3
Major Elective		Student choice		3
			Total:	14
Seventh Semester (FALL)				
UD4		UD Social and Behavioral Sciences	Completion of 1A, 1B, 1C and 2	3
UD major	CHEM 441	General Biochemistry I	CHEM 332	4
UD major	BIOL 424	Bioinformatics		3
Core requirement	BIOL 601A	Foundations of Scientific Research		1
UD major/Graduate Elective	BIOL 426	Adv. Molecular and Cell Biology	BIOL 320	3
			Total:	14
Eighth Semester (SPRING)				
UD major elective		Student choice		2
UD5		Upper division Physical or Biological Science	Completion of 1A, 1B, 1C and 2	3
Core requirement	BIOL 601B	Foundations of Scientific Communication	BIOL 601A	1
UD major/Graduate Elective	BIOL 427	Molecular and Cell Biology Lab.	BIOL 310	3
UD major	BIOL 410	Genetic Analysis II	BIOL 310	3
			Total:	12
Ninth Semester (FALL)				
Research Specialization	BIOL 616 or BIOL 618 or BIOL 652 or BIOL 671	Student-advisor choice		3
Research Specialization	BIOL 616 or BIOL 618 or BIOL 652 or BIOL 671	Student-advisor choice		3
Elective	BIOL	Elective (student-advisor choice)		3
			Total:	9
Ten Semester (SPRING)				
Communicating the research specialization	BIOL 610 or 630 or 650 or 670	Seminar (student-adviosr choice)		2
Elective	BIOL	Elective (student-advisor choice)		3
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
☐ 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 Reasoning (Must earn passing grade of C-/CR or better.)
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)
BIOL 601A - Foundations of Scientific Research (1 unit)
BIOL 601B - Foundations of Scientific Communication (1 unit)
BIOL 410 - Genetic Analysis II (3 units)
BIOL 426 - Adv. Molecular and Cell Biology (3 units)
BIOL 427 - Molecular and Cell Biology Lab (3 units)

Undergraduate Requirements
Graduate Courses taken at Undergrad level/Double Counting Courses
Graduate Courses taken Ninth and Tenth Semester