

# BACHELOR OF SCIENCE IN BIOCHEMISTRY (IMPACTED)

## Major Requirements Worksheet

2016-2017 Catalog

Name: \_\_\_\_\_

Student ID: \_\_\_\_\_

*NOTE: This checklist is not intended to replace advising from the major department. Students should consult with the major advisor to determine the appropriate sequence of courses. This checklist is to inform students of major requirements and course prerequisites only. CSULB Enrollment Services prepares the Academic Requirements Report, which is the official graduation verification. **Pre-Biochemistry majors must complete their GE Foundation courses, and the highlighted areas below all with a "C" or better and a cumulative GPA of 2.5, by 60 units to be considered for the major.***

### Degree Progress

*Freshman need to complete Math 122 and CHEM 111A within one calendar year. CHEM 111B and CHEM 220A within two calendar years, all with a grade of "C" or better. Transfer students need to complete CHEM 220A and PHYS 151 within one calendar year, all with a grade of "C" or better.*

Semester	Grade	Course #	Course Title	Prerequisites
		MATH 122	Calculus I (4)	MDPT placement or MATH 111 and 113
		MATH 123	Calculus II (4)	MATH 122
		CHEM 220A	Organic Chemistry I (3)	CHEM 111B
		CHEM 220B	Organic Chemistry II (3)	CHEM 220A. <i>Corequisite:</i> CHEM 320L
		BIOL 211	Intro. to Evolution and Diversity (4)	<i>Pre/Corequisite:</i> CHEM 111A
		BIOL 212	Intro. to Cell and Molecular Biology (4)	BIOL 211, CHEM 111A. <i>Pre/Corequisite:</i> CHEM 111B
		PHYS 151	Mechanics and Heat (4)	<i>Pre/Corequisite:</i> MATH 122
		PHYS 152	Electricity and Magnetism (4)	PHYS 151. <i>Pre/Corequisite:</i> MATH 123

### Choose ONE of the following groups:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 111A	General Chemistry (5) <i>AND</i>	A passing score on the CPT; <i>Corequisite:</i> MATH 109 or higher
		CHEM 111B	General Chemistry (5)	CHEM 111A and MATH 113 or 115 or 119A or 122

**OR**

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 112A	Advanced General Chemistry (5) <i>AND</i>	Department Consent
		CHEM 112B	Advanced General Chemistry (5)	CHEM 112A

### Choose ONE of the following groups:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 251	Quantitative Analysis (4)	CHEM 111B

**OR 4 units of elective chosen in consultation with an advisor**

Semester	Grade	Course #	Course Title	Prerequisites

## UPPER DIVISION COURSES (See major faculty advisor)

Take ALL of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		BIOL 340	Molecular Cell Biology (3)	BIOL 211, 212
		CHEM 320L	Organic Chemistry Laboratory (2)	CHEM 220A; <i>Corequisite:</i> CHEM 220B
		CHEM 361	Chemical Communications (3)	GE Foundation requirement. 11 or higher on GWAR. <i>Pre/Corequisite:</i> CHEM 220A
		CHEM 441A	Biological Chemistry (3)	Either CHEM 320L or <i>both</i> CHEM 220B and 223B. Recommended: a BIOL or MICR course.
		CHEM 441B	Biological Chemistry (3)	CHEM 441A
		CHEM 443	Biological Chemistry Laboratory (4)	<i>Prerequisites:</i> CHEM 441A; and <i>either</i> CHEM 361 <i>or</i> 466
		CHEM 461	Chemistry Capstone (1)	Department Consent

Choose ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 371A	Thermodynamics and Kinetics (3) <b>OR</b>	CHEM 111B, MATH 123, PHYS 152 <i>Pre/corequisite:</i> MATH 224
		CHEM 377A	Fundamentals of Physical Chemistry (3)	CHEM 111B, MATH 123, PHYS 152

Choose ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 371B	Quantum Mechanics and Spectroscopy (3) <b>OR</b>	CHEM 111B, MATH 123, PHYS 152 <i>Pre/corequisite:</i> MATH 224
		CHEM 377B	Fundamentals of Physical Chemistry (3)	CHEM 111B, MATH 122, PHYS 152

Choose ONE of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 420	Advanced Organic Chemistry Lab (3) <b>OR</b>	CHEM 220B or 320L and either CHEM 361 or 466
		CHEM 451	Instrumental Methods of Analysis (5)	PHYS 152, CHEM 361; 371B or 377B

Choose 7 additional units of elective, at least 3 of which must be upper division, chosen from:

BIOL 342/342L, 370, 416, 430, 431, 432, 433, 443, 445, 473;

CHEM 251, 331, 332, 373, 420, 421, 431, 451, 466, 480, 496, 498; 498H, 499.

Semester	Grade	Course #	Course Title	Prerequisites

NOTE: See the catalog for courses that do not meet any specific or elective requirements for the major.