

# BACHELOR OF SCIENCE IN CHEMISTRY (IMPACTED)

## Major Requirements Worksheet

### 2017-2018 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-Chemistry 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 <sup>†</sup>	Calculus I (4)	MDPT placement or MATH 111 and 113
		MATH 123 <sup>†</sup>	Calculus II (4)	MATH 122
		MATH 224	Calculus III (4)	MATH 123 or 222
		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
		CHEM 220A	Organic Chemistry I (3)	CHEM 111B
		CHEM 220B	Organic Chemistry II (3)	CHEM 220A. <i>Corequisite:</i> CHEM 320L

#### Choose ONE of the following groups:

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

*OR*

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

#### Choose either ALL of the following courses:

Semester	Grade	Course #	Course Title	Prerequisites
		BIOL 211	Intro. to Evolution and Diversity (4) <i>AND</i>	<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

#### *OR ONE of the following courses:*

Semester	Grade	Course #	Course Title	Prerequisites
		BIOL 200	General Biology (4)	GE Foundation
		BIOL 205	Human Biology (4)	GE Foundation
		BIOL 207	Human Physiology (4)	GE Foundation

#### 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
		CHEM 320L	Organic Chemistry Laboratory (2)	CHEM 220A; <i>Corequisite</i> : CHEM 220B
		CHEM 331	Inorganic Chemistry (3)	CHEM 111B
		CHEM 332	Inorganic Chemistry Laboratory (2)	<i>Pre/corequisite</i> : CHEM 331
		CHEM 361	Chemical Communications (3)	GE Foundation requirement. 11 or higher on GWAR. <i>Pre/Corequisite</i> : CHEM 220A
		CHEM 371A	Physical Chemistry: Thermodynamics and Kinetics (3)	CHEM 111B, MATH 123, PHYS 152. <i>Pre/corequisite</i> : MATH 224
		CHEM 371B	Physical Chemistry: Quantum Mechanics and Spectroscopy (3)	CHEM 111B, MATH 123, PHYS 152. <i>Pre/corequisite</i> : MATH 224
		CHEM 373	Physical and Inorganic Chemistry Laboratory (3)	CHEM 111B; CHEM 371A or 377A or 377B. <i>Corequisite</i> : CHEM 371B
		CHEM 431	Advanced Inorganic Chemistry (3)	CHEM 331 and 371B
		CHEM 451	Instrumental Methods of Analysis (5)	PHYS 152, CHEM 361; 371B or 377B
		CHEM 461	Chemistry Capstone (1)	Department Consent

**Choose ONE of the following courses:**

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 361	Chemical Communications (3) <b>OR</b>	GE Foundation requirement. 11 or higher on GWAR. <i>Pre/Corequisite</i> : CHEM 220A
		NSCI 361	Scientific Research Communication (3)	GE Foundation requirement. 11 or higher on GWAR.

**Choose ONE of the following courses:**

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 420	Advanced Organic Chemistry Laboratory (3) <b>OR</b>	CHEM 220B or CHEM 320L and <i>either</i> CHEM 361 or 466
		CHEM 498	Senior Thesis	Major GPA 3.0 or >, 3 units of CHEM 496 with a grade of "A", consent of instructor

**Choose ONE of the following courses:**

Semester	Grade	Course #	Course Title	Prerequisites
		CHEM 441A	Biological Chemistry (3) <b>OR</b>	Either CHEM 320L or <i>both</i> CHEM 220B & 223B. Recommended: BIOL or MICR course.
		CHEM 448	Fundamentals of Biological Chemistry (3)	CHEM 220B

**Choose an additional 3 units of upper division chemistry electives:**

Including at least one unit of CHEM 496, NSCI 496, CH E 330, CH E 430, or CH E 475 may be used as chemistry electives. Students are also advised to take one or more additional courses in mathematics, such as MATH 247, 364A, 370A, 380.

Semester	Grade	Course #	Course Title	Prerequisites