California State Polytechnic University, Pomona
Degree Curriculum Sheet

Plan (Major) **CHEMISTRY** Catalog Year **2014 - 2015** Name _____

Subplan/Option **Molecular Modeling and Simulation** Minimum Units Required **180** Student ID _____

Required Core Courses

Course		Units
Required of all students. A 2.0 cumulative GPA is required in core courses, including subplan courses, in order to receive a degree in the major.		
General Chemistry & Lab	CHM 121/121L	3/1
General Chemistry & Lab	CHM 122/122L	3/1
General Chemistry & Lab	CHM 123/123L	3/1
Quantitative Analysis & Lab	CHM 221/221L	2/2
Organic Chemistry	CHM 314	3
Organic Chemistry	CHM 315	3
Organic Chemistry	CHM 316	3
Organic Chemistry Lab	CHM 317L	1
Organic Chemistry Lab	CHM 318L	1
Organic Chemistry Lab	CHM 319L	1
Spectroscopic Methods & Lab	CHM 342/342L	2/2
Separations Methods & Lab	CHM 343/343L	2/2
Electroanalytical Methods & Lab	CHM 344/344L	2/2
Physical Chemistry & Lab	CHM 352/352L	1/2
Organic Synthesis & Lab	CHM 422/422L	2/2
or Organic Analysis & Lab	CHM 424/424L	(2/2)
Senior Research Project	CHM 491	3
Senior Research Project	CHM 492	3
Undergraduate Seminar	CHM 493	2
	Total Units	**55**

Required Subplan/Option Core Courses

Course		Units
Molecular Modeling in Chemistry	CHM 260	4
Physical Chemistry	CHM 311	3
Physical Chemistry	CHM 312	3
Physical Chemistry	CHM 313	3
Methods of Data Acquisition	CHM 418	4
Select at least two courses from the following:		*8*
Intro to Molecular Simulations	CHM 360	(4)
Macromolecular Modeling	CHM 416	(4)
Computational Biochemistry	CHM 417	(4)
Computational Chemistry	CHM 420	(4)
Two elective courses, approved 300, 400-level or higher, excluding: CHM 400, CHM 491, CHM 492, CHM 493 & CHM 499/499A/499L		*(6-8)*
	Total Units	**31-33**

Required Support Courses

Course		Units
The following required support courses should be taken to satisfy the indicated GE Requirements to achieve the minimum units to degree listed at the top of this sheet.		
Basic Biology (B2, B3)	BIO 115/115A/115L	3/1/1
Introduction to C++	CS 128	4
Analytic Geometry and Calculus I (B4)	MAT 114	4
Analytic Geometry and Calculus II	MAT 115	4
Analytic Geometry and Calculus III	MAT 116	4
General Physics & Lab (B1,B3)	PHY 131/131L	3/1
General Physics & Lab	PHY 132/132L	3/1
General Physics & Lab	PHY 133/133L	3/1
	Total Units	**33**

Elective Support Courses

Course		Units
Select a minimum of 4 units from the following courses:		*4*
Biophysics	PHY 410	(4)
or Biophysics	BIO 410	(4)
Chemical Engineering Analysis & Lab	CHE 132/142L	(2/1)
Intro to Numerical Methods	MAT 201	(4)
Laplace Transforms and Fourier Series	MAT 317	(3)
Materials Science and Engineering	MTE 207	(3)
Sampling Theory and Applications	STA 310	(4)
	Total Units	**4**

Unrestricted Electives

Course	Units
Select a sufficient number of courses so that the total from "Required Subplan/Option", "Required Support", "GE", and "Unrestricted Electives" is at least 121 units.	0-1
Total Units	**0-1**

General Education Requirements

Area	Units
Area A Communication & Critical Thinking	12
1. Oral Communication	
2. Written Communication	
3. Critical Thinking	
Area B Mathematics & Natural Sciences	16
Select at least one lab course from subarea 1 or 2.	
1. Physical Science	
2. Biological Science	
3. Laboratory Activity	
4. Math/Quantitative Reasoning	
5. Science & Technology Synthesis	
Area C Humanities	16
1. Visual and Performing Arts	
2. Philosophy and Civilization	
3. Literature and Foreign Language	
4. Humanities Synthesis	
Area D Social Sciences	20
1. U.S. History, Constitution, American Ideals	
a. United States History	
b. Introduction to American Government	
2. History, Economics and Political Science	
3. Sociology, Anthropology, Ethnic & Gender Studies	
4. Social Science Synthesis	
Area E Lifelong Understanding & Self Development	4
Total Units	**68**

American Institutions — 8
Courses that satisfy this requirement may also satisfy GE Area D1

American Cultural Perspectives Requirement — 4
Refer to catalog for list of courses that satisfy this requirement. Course may also satisfy major, minor, GE, or unrestricted elective requirements.

All persons who receive undergraduate degrees from Cal Poly Pomona must pass the Graduation Writing Test (GWT). The test must be taken by the quarter following completion of 120 units for undergraduates.