



# Chemistry A.S. Degree

The Chemistry Program consists of courses designed to meet transfer requirements for chemical, physical, and biological science majors.

Total Units: 72

## First Year

### Semester 1

15 Units

COURSE	UNITS	PRE-REQS <sup>^</sup>	SEMESTERS OFFERED*	GE AREA
<b>CHEM 300</b> <sup>1</sup> <b>Z</b> Beginning Chemistry	4	Elementary Algebra or higher	F, S, Su	CRC Area IV
<b>MATH 370</b> <sup>2</sup> <b>Z</b> Pre-Calculus Mathematics	5	MATH 335	F, S	CRC Area II(b)
<b>CRC Area II(a)-Writing Competency</b> <sup>3</sup> <b>Z</b>	3	Recommend meeting with a counselor	F, S, Su	CRC Area II(a)
<b>CRC Area V(b)-Social &amp; Behavioral Sciences and VI-Ethnic/Multicultural Studies</b> <sup>3</sup> <b>Z</b>	3		F, S, Su	CRC Area V(b) & VI

**Z** At least one section of this course is offered with free textbooks and is labeled as zero textbook costs (ZTC). If it is a GE area class or elective, there may be several ZTC offerings to fulfill the GE requirement. Use the Free Textbook filter to find these courses. Learn more on the [ZTC page of the college website](#).

<sup>1</sup> not necessary if taken 1 year of high school chemistry with lab; if so, enroll in CHEM 400

<sup>2</sup> not necessary if placed in MATH 400

<sup>3</sup> select course that will meet the requirements for Area V(b) and VI

### Semester 2

13 Units

COURSE	UNITS	PRE-REQS <sup>^</sup>	SEMESTERS OFFERED*	GE AREA
<b>MATH 400</b> <b>Z</b> Calculus I	5	MATH 370	F, S	CRC Area II(b)
<b>CHEM 400</b> <b>Z</b> General Chemistry I	5	Elementary Algebra and CHEM 300, 305, 309 or 1 yr of HS Chem with Lab	F, S, Su	CRC Area IV
<b>CRC Area V(a)-American Institutions</b> <sup>3</sup> <b>Z</b>	3		F, S, Su	CRC Area V(a)

## Career

### Options/Outlook:

Chemists conduct qualitative and quantitative chemical analyses or experiments in laboratories for quality or process control or to develop new products or knowledge. **Career opportunities require more than an associate degree.**

### A sample of reported job titles:

Air Quality Chemist, Analytical Chemist, Chemical Laboratory Scientist, Chemist, Forensic Chemist, Forensic Scientist, Quality Control Chemist (QC Chemist), Research Chemist, Scientist, Senior Chemist

### Projected job openings in California (2020-2030):

1,050

### Projected growth in California (2020-2030):

17%

### Median Salary in California with advanced degree (2021):

\$78,920/yr

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## Semester 3 (Summer)

4 Units

COURSE	UNITS	PRE-REQS <sup>^</sup>	SEMESTERS OFFERED*	GE AREA
<b>PHYS 411</b> <b>Z</b> Mechanics of Solids and Fluids	4	MATH 400	F, S, Su	CRC Area IV

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## Source:

<https://www.onetonline.org/link/summary/19-2031.00>

## Honors option:

The CRC Honors Program is designed specifically for academically accomplished students and for students with the potential for high achievement. Students who complete 15 units or more in honors-designated courses will earn special recognition as an Honors Scholar, a distinction that may entitle the student to guaranteed transfer and scholarship opportunities at select transfer colleges and universities.

## Transfer notes:

Please meet with a counselor for specific transfer course evaluation or transferring to a specific 4-year institution.

## Year 2

### Semester 4

14 Units

COURSE	UNITS	PRE-REQS <sup>^</sup>	SEMESTERS OFFERED*	GE AREA
<b>MATH 401</b> <b>Z</b> Calculus II	5	MATH 400	F, S	CRC Area II(b)
<b>CHEM 401</b> <b>Z</b> General Chemistry II	5	CHEM 400	F, S	
<b>CRC Area III(b)-Life Development Skills</b> <b>Z</b>	3		F, S, Su	CRC Area III(b)
<b>CRC Area III(a)-Physical Edu Activity</b> <b>Z</b>	1		F, S, Su	CRC Area III(a)

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## General Education (GE):

Non-specified GE courses identified by CRC Area, CSU Area or IGETC Area without pre- or co-requisite can be taken at any semester.

## About this map:

This program map represents one possible pathway to complete the program. Please see a counselor to create an education plan that is customized to meet your needs. This map is not a guarantee of course availability or financial aid applicability.

### Semester 5

14 Units

COURSE	UNITS	PRE-REQS <sup>^</sup>	SEMESTERS OFFERED*	GE AREA
<b>MATH 402</b> <b>Z</b> Calculus III	5	MATH 401	F, S	CRC Area II(b)
<b>CHEM 420</b> <b>Z</b> Organic Chemistry I	5	CHEM 401	F, S	
<b>PHYS 421</b> <b>Z</b> Electricity and Magnetism	4	MATH 401 & PHYS 411	F, S	

## Zero Textbook Costs (ZTC):

The Zero Textbook Costs designation and logo are added to any course that provides free access to all required instructional materials. These are typically shared with students through Canvas. Courses that are designated as ZTC may still require students to purchase supplemental materials such as lab coats, a calculator, art supplies, etc. See full definitions and searching tips on the [Zero Textbook Costs page](#) of the college website.

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## Year 3

### Semester 6

12 Units

COURSE	UNITS	PRE-REQS <sup>^</sup>	SEMESTERS OFFERED*	GE AREA
<b>CHEM 421</b> <b>Z</b> Organic Chemistry II	5	CHEM 420	F, S	
<b>PHYS 431</b> <b>Z</b> Heat, Waves, Light and Modern Physics	4	MATH 401 & PHYS 411	F, S	
<b>CRC Area I-Humanities</b> <b>Z</b>	3		F, S, Su	CRC Area I

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<sup>^</sup>You must have passed the prerequisite course(s) with a "C" or better; Corequisite must be taken during the same semester; Advisory means it is recommended but not required to enroll in the course.

\*(O) = online available (P) = partially online