

# Chemistry

## Major Courses

2022 - 2026 Catalog Requirements

To be used only for students completing quarter requirements in the 2026-27 year.

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Do you need to fulfill a quarter course? Check the semester equivalency!

MAJOR COURSES

QUARTER COURSE		SEMESTER COURSE	NOTES
<b>CHEM 124</b> Gen Chem/Phys Sci & Engr I	←	<b>CHEM 1120</b> Fundamentals of Chemical Structure & Properties	
<b>CHEM 125</b> Gen Chem/Phys Sci & Engr II	←	<b>CHEM 1122</b> Fundamentals of Chemical Reactivity	
<b>CHEM 126</b> Gen Chem/Phys Sci & Engr III	✗	<b>DISCONTINUED</b>	Term last offered: Summer 2026. Studentys can take CHEM 128C in Fall if they need CHEM 126.
<b>CHEM 203</b> Undergraduate Seminar I	←	<b>CHEM 3302</b> Undergraduate Seminar II	Students should take CHEM 3302 to fulfill requirement for CHEM 203 and 303
<b>CHEM 216</b> Organic Chemistry I	←	<b>CHEM 2242</b> Organic Chemistry I	Pre-req for CHEM 2242 is CHEM128C, or 126, or (semester-long 1120 AND 1122)
<b>CHEM 217</b> Organic Chemistry II	✗	<b>DISCONTINUED</b>	Credit in CHEM 2244 fulfills requirement for CHEM 217
<b>CHEM 218</b> Organic Chemistry III	←	<b>CHEM 2244</b> Organic Chemistry II	Students can take CHEM 217C or CHEM 2244 to fulfill requirement for CHEM 218; pre-req for 2244 is 216B, 217 or 2242
<b>CHEM 221</b> Organic Chemistry Lab II	✗	<b>DISCONTINUED</b>	
<b>CHEM 303</b> Undergraduate Seminar II	←	<b>CHEM 3302</b> Undergraduate Seminar II	
<b>CHEM 324</b> Organic Chemistry Lab III	✗	<b>DISCONTINUED</b>	credit in CHEM 2244 will fulfill requirement for CHEM 324
<b>CHEM 331</b> Quantitative Analysis	←	<b>CHEM 3330</b> Foundations of Chemical Analysis	
<b>CHEM 351</b> Physical Chemistry I	✗	<b>DISCONTINUED</b>	Credit in CHEM 3394 will fulfill requirement for CHEM 351
<b>CHEM 352</b> Physical Chemistry II	←	<b>CHEM 3394</b> Physical Chemistry II	
<b>CHEM 353</b> Physical Chemistry III	←	<b>CHEM 3392</b> Physical Chemistry I	
<b>CHEM 356</b> Physical Chemistry Lab	←	<b>CHEM 3395</b> Physical Chemistry Lab II	
<b>CHEM 357</b> Physical Chemistry III Lab	←	<b>CHEM 3393</b> Physical Chemistry Lab I	



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# Chemistry

## Major Courses & Support Courses

2022 - 2026 Catalog Requirements

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MAJOR COURSES		QUARTER REQUIREMENT	←	SEMESTER COURSE	ADVISING NOTES
		<b>CHEM 369</b> Biochem. Principles		<b>CHEM 3352</b> Biochemistry	
		<b>CHEM 403</b> Undergrad Sem III: Sr. Project		<b>CHEM 4462</b> Senior Project II	
		<b>CHEM 439</b> Instrumental Analysis		<b>CHEM 4430</b> Instrumental Analysis	
		<b>CHEM 481</b> Inorganic Chemistry		<b>CHEM 3320</b> Inorganic Chemistry II	CHEM 2220 is pre-req for CHEM 3320; students graduating 2026-27 can take 3320 in the Fall'26 without pre-req.
		<b>CHEM 484</b> Inorganic Chemistry Lab		<b>CHEM 3321</b> Inorganic Chemistry II lab	
SUPPORT COURSES		QUARTER COURSE	←	SEMESTER COURSE	NOTES
		<b>BIO 161</b> Intro to Cell/Molecular Bio		<b>BIO 1151</b> Life: Molecules and Cells	
		<b>MATH 141</b> Calculus I		<b>MATH 1261</b> Calculus I	
		<b>MATH 142</b> Calculus II		<b>DISCONTINUED</b>	
		<b>MATH 143</b> Calculus III		<b>MATH 1262</b> Calculus II	
		<b>MATH 241</b> Calculus IV		<b>MATH 2263</b> Calculus III	
		<b>Select from the following:</b> <b>CSC 232</b> Computer Pgrm for Scientists & Engineers <b>CSC 234</b> C and Unix <b>MATH 206</b> Linear Algebra I <b>MATH 244</b> Linear Analysis I <b>STAT 218</b> Applied STATS for Life Science <b>STAT 312</b> Statistical Methods for Engineers		<b>Select from the following:</b> <b>CSC 1032</b> Programming for Scientists & Engineers <b>CSC 234- DISCONTINUED</b> <b>MATH 1151</b> Linear Algebra <b>MATH 2341</b> Linear Analysis <b>STAT 1110:</b> Applied Statistical Concepts & Methods <b>STAT 3210</b> Engineering Statistics	
		<b>PHYS 141</b> General Physics I		<b>PHYS 1141</b> General Physics I	
		<b>PHYS 142</b> General Physics II		<b>DISCONTINUED</b>	Students need to take cap course
		<b>PHYS 143</b> General Physics III		<b>PHYS 1143</b> General Physics II	
		<b>PHYS Elective (200 level and above)</b>		<b>PHYS Elective (2000 and above)</b>	



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## Advanced Chemistry Electives Non Polymers & Coatings

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	QUARTER COURSE	SEMESTER COURSE	NOTES
	<b>BIO/CHEM 308</b> Genetic Engineering Technology OR <b>CHEM 349</b> Chemical and Biological Warfare OR <b>ENVE 324</b> Introduction to Air Pollution OR <b>SCM 360</b> Select Env. Issues of Calif's Central Coast	<b>BIO/CHEM 3318</b> Genetic Engineering Technology OR <b>CHEM 3374</b> Chemical and Biological Warfare OR <b>ENVE 3324</b> Introduction to Air Pollution OR <b>SCM 3360</b> Select Env. Issues of Calif's Central Coast	
CONCENTRATION	<b>BIO/CHEM 441</b> Bioinformatics Applications →	<b>BIO/CHEM 4451</b> Bioinformatics Applications	
	<b>BIO/CHEM 475</b> Molecular Biology Laboratory →	<b>BIO 4457</b> Molecular Biology Laboratory OR <b>CHEM 4453</b> Molecular Biology Techniques	Prerequisites differ per course.
	<b>CHEM 302</b> Marine Chemistry →	<b>CHEM 3370</b> Marine Chemistry	
	<b>CHEM 341</b> Environmental Chemistry: Water Pollution →	<b>CHEM 3372</b> Environmental Chemistry	
	<b>CHEM 372</b> Metabolism →	<b>CHEM 3354</b> Metabolism	
	<b>CHEM 373</b> Molecular Biology →	<b>CHEM 3356</b> Genetic Information Processing	
	<b>CHEM 377</b> Chemistry of Drugs & Poisons →	<b>CHEM 4457</b> Chemistry of Drugs & Poisons	
	<b>CHEM 401</b> Advanced Undergraduate Research →	<b>CHEM 4401</b> Advanced Undergraduate Research	
	<b>CHEM 405</b> Advanced Physical Chemistry ✗	<b>DISCONTINUED</b>	



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	QUARTER COURSE	SEMESTER COURSE	NOTES
<b>CONCENTRATION</b>	<b>CHEM 414</b> Advanced Organic Chemistry	← <b>CHEM 4440</b> Advanced Organic Chemistry- Mechanisms	
	<b>CHEM 420</b> Advanced Organic Chemistry- Synthesis	← <b>CHEM 4442</b> Advanced Organic Chemistry- Synthesis	
	<b>CHEM 428</b> Nutritional Biochemistry	← <b>CHEM 4450</b> Nutritional Biochemistry	
	<b>CHEM 432</b> Physical Biochemistry	← <b>CHEM 4452</b> Physical Biochemistry Methods & Applications	
	<b>CHEM 444</b> Polymers & Coatings I	← <b>CHEM 4480</b> Polymer Synthesis and Characterization	
	<b>CHEM 445</b> Polymers & Coatings II	✗ <b>DISCONTINUED</b>	
	<b>CHEM/MATE 446</b> Surface Chemistry of Materials	← <b>CHEM 4486</b> Surface Chemistry of Materials	
	<b>CHEM 447</b> Polymers & Coatings Laboratory I	← <b>CHEM 4481</b> Polymers & Coatings Laboratory	
	<b>CHEM 448</b> Polymers & Coatings Laboratory II	✗ <b>DISCONTINUED</b>	
	<b>CHEM 449</b> Polymers & Coatings Internship	← <b>CHEM 4487</b> Polymers & Coatings Internship	
	<b>CHEM 450</b> Polymers & Coatings III	← <b>CHEM 4482</b> Coatings & Formulations	
	<b>CHEM 451</b> Polymers & Coatings Laboratory III	← <b>CHEM 4483</b> Coatings & Formulations Laboratory	
	<b>CHEM 454</b> Functional Polymeric Materials	← <b>CHEM 4484</b> Functional Polymeric Materials	
	<b>CHEM 458</b> Adv. Organic Chemistry - Spectroscopy	← <b>CHEM 4444</b> Advanced Organic Chemistry Laboratory	
	<b>CHEM 463</b> Honors Research	✗ <b>DISCONTINUED</b>	



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	QUARTER COURSE		SEMESTER COURSE	NOTES
<b>CONCENTRATION</b>	<b>CHEM 465</b> College Teaching Practicum	➔	<b>CHEM 4415</b> College Teaching Practicum	
	<b>CHEM 466</b> Learning Assistant Seminar	➔	<b>CHEM 4404</b> Learning Assistant Seminar	
	<b>CHEM 470</b> Selected Advanced Topics	➔	<b>CHEM 4470</b> Special Advanced Topics	
	<b>CHEM 471</b> Selected Advanced Laboratory	➔	<b>CHEM 4471</b> Special Advanced Laboratory	
	<b>CHEM 474</b> Protein Techniques Laboratory	➔	<b>CHEM 4454</b> Protein Techniques	
	<b>CHEM 477</b> Biochemical Pharmacology	✗	<b>DISCONTINUED</b>	
	<b>CHEM 485</b> Cooperative Education Experience	➔	<b>CHEM 4485</b> Cooperative Education Experience- Part Time	
	<b>CHEM 495</b> Cooperative Education Experience	➔	<b>CHEM 4495</b> Cooperative Education Experience- Full Time	
	<b>SCM 302/ENGR 322</b> Learn by Doing Lab Teaching Practicum			<b>SCM 302/ENGR 3302</b> The Learn by Doing Lab Teaching Practicum



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	QUARTER COURSE		SEMESTER COURSE	NOTES
<b>CONCENTRATION</b>	<b>CHEM 444</b> Polymers & Coatings 1	➔	<b>CHEM 4480</b> Polymer Synthesis and Characterization	
	<b>CHEM 445</b> Polymers & Coatings II	✗	<b>DISCONTINUED</b>	
	<b>CHEM 446</b> Surface Chemistry of Materials	➔	<b>CHEM 4486</b> Surface Chemistry of Materials	
	<b>CHEM 447</b> Polymers & Coatings Laboratory I	➔	<b>CHEM 4481</b> Polymer Synthesis and Characterization Laboratory	
	<b>CHEM 448</b> Polymers & Coatings Laboratory II	✗	<b>DISCONTINUED</b>	Content merged into <b>CHEM 4481</b> Polymer Synthesis & Characterization Laboratory
	<b>CHEM 450</b> Polymers & Coatings III	➔	<b>CHEM 4482</b> Coatings and Formulations	
	<b>Select One</b> <b>CHEM 449</b> Polymers & Coatings Internship OR <b>CHEM 451</b> Polymers & Coatings Laboratory III	➔	<b>CHEM 4487</b> Polymers & Coatings Internship OR <b>CHEM 4483</b> Coatings and Formulations Laboratory	



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