Biochemistry

Major Courses

2026-28 Course Mappings
To be used to show how previously taken quarter courses will count towards the 2026-28 Semester Catalog Requirement.
Note: Not all 26-28 degree requirements are reflected on mappings. Check curriculum sheet for all requirements.

MAJOR COURSES

QUARTER REQUIREMENT		SEMESTER COURSE or MAPPING	NOTES
CHEM 124 Gen Chem/Phys Sci & Engr I	→	**CHEM 1120** Fundamentals of Chemical Structure & Properties	
CHEM 125 Gen Chem/Phys Sci & Engr II	→	**CHEM 1122** Fundamentals of Chemical Reactivity	Students need to take CHEM 128C to enroll in CHEM 2242 or CHEM 3330
CHEM 126 Gen Chem/Phys Sci & Engr III	✗	No semester equivalent course	Units applied to overall unit shortage; meets pre-reqs for CHEM 2242 and CHEM 3330
CHEM 203 Undergraduate Seminar I	→	**CHEM 2202** Undergrad seminar I	CHEM 2202 is not required; units applied to overall unit shortage
CHEM 216 Organic Chemistry I	→	**CHEM 2240** Organic Chem: Fund. & Application	Students need to take CHEM 216B to receive credit in CHEM 2242 and enroll in CHEM 3352.
CHEM 217 Organic Chemistry II	→	**CHEM 2242** Organic Chemistry I	
CHEM 218 Organic Chemistry III	→	**CHEM 2244** Organic Chemistry II	
CHEM 221 Organic Chemistry Lab II	✗	No semester equivalent	Units applied to overall unit shortage
CHEM 303 Undergraduate Seminar II	→	**CHEM 3302** Undergraduate Seminar II	
CHEM 324 Organic Chemistry Lab III	✗	No semester equivalent	Units applied to Advanced Electives
CHEM 331 Quantitative Analysis	→	**CHEM 3330** Foundations of Chemical Analysis	
CHEM 351 Physical Chemistry I	✗	No semester equivalent	Credit applied to Advanced Electives
CHEM 352 Physical Chemistry II	→	**CHEM 3394** Physical Chemistry II	**Not required,** credit applied to Advanced Electives
CHEM 353 Physical Chemistry III	→	**CHEM 3392** Physical Chemistry I	Fulfills requirement for CHEM3390
CHEM 356 Physical Chemistry Lab	→	**CHEM 3395** Physical Chemistry Laboratory II	**Not required,** credit applied to Advanced Electives
CHEM 357 Physical Chemistry III Lab	→	**CHEM 3393** Physical Chemistry Lab I	Fulfills requirement for CHEM3391

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Biochemistry
Major Courses

2026-28 Course Mappings
To be used to show how previously taken quarter courses will count towards the 2026-28 Semester Catalog Requirements

	QUARTER COURSE	SEMESTER COURSE or MAPPING	NOTES
MAJOR COURSES	**CHEM 369** Biochem. Principles →	**CHEM 3352** Biochemistry	
	CHEM 372 Metabolism →	**CHEM 3354** Metabolism	
	CHEM 373 Molecular Biology →	**CHEM 3356** Genetic Information Processing	
	CHEM 403 Undergrad Sem III: Sr. Project →	**CHEM 4462** Senior Project II	
	BIO 475 Molecular Biology laboratory or **CHEM 475** Molecular Biology Laboratory →	**BIO 4457** Molecular Biology Laboratory OR **CHEM 4453** Molecular Biology Techniques	Credit applied to Advanced Electives. On semesters, students should take CHEM 4453
	Select One: **BIO 476** OR **CHEM 474** →	**DISCONTINUED** **or** **CHEM 4454** Protein Techniques	Credit applied to Advanced Electives

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Biochemistry
Major Support Courses

2026-28 Course Mappings
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	QUARTER COURSE		SEMESTER COURSE or MAPPING	NOTES
SUPPORT COURSES	**BIO 161** Intro to Cell/Molecular Bio	→	**BIO 1151** Life: Molecules and Cells	
	Choose One: **BIO 452** Cell Biology OR **CHEM 432** Physical Biochemistry OR **MCRO 224** General Microbiology I	→	**Choose One:** **BIO 4452** Cell Biology **Credit applied to Advanced Electives** **CHEM 432** Physical Biochemistry Methods & Applications **Credit applied to Advanced Electives** **MCRO 2224** General Microbiology I	
	MATH 141 Calculus I	→	**MATH 1261** Calculus I	
	MATH 142 Calculus II	✗	Units applied to support course area	
	MATH 143 Calculus III	→	**MATH 1262** Calculus II	
	PHYS 141 General Physics I	→	**PHYS 1141** General Physics I	
	PHYS 142 General Physics II	✗	Units applied to support course area	
	PHYS 143 General Physics III	→	**PHYS 1143** General Physics II	

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Biochemistry

Advanced Chemistry Electives
Non Polymers & Coatings

2026-28 Course Mappings
To be used to show how previously taken quarter courses will count towards the 2026-28 Semester Catalog Requirements

ADVANCED ELECTIVES- LIST A

QUARTER COURSE- LIST A		SEMESTER COURSE or MAPPING	NOTES
CHEM 302 Marine Chemistry	→	**CHEM 3370** Marine Chemistry	
CHEM 341 Environmental Chemistry: Water Pollution	→	**CHEM 3372** Environmental Chemistry	
CHEM 357 Physical Chemistry III Lab	→	**CHEM 3395** Physical Chemistry Laboratory II	
CHEM 377 Chemistry of Drugs & Poisons	→	**CHEM 4457** Chemistry of Drugs & Poisons	Credit applied to extension electives
CHEM 401 Advanced Undergraduate Research	→	**CHEM 4401** Advanced Undergraduate Research	
CHEM 405 Advanced Physical Chemistry	✗	Units applied to advanced electives	
CHEM 373 Molecular Biology	→	**CHEM 3356** Genetic Information Processing	**Major Required Course**
CHEM 414 Advanced Organic Chemistry	→	**CHEM 4440** Advanced Organic Chemistry-Mechanisms	
CHEM 420 Advanced Organic Chemistry-Synthesis	→	**CHEM 4442** Advanced Organic Chemistry-Synthesis	
CHEM 428 Nutritional Biochemistry	→	**CHEM 4450** Nutritional Biochemistry	
CHEM 432 Physical Biochemistry	→	**CHEM 4452** Physical Biochemistry Methods & Applications	
CHEM 439 Instrumental Analysis	→	**CHEM 4430** Instrumental Analysis	
CHEM 441 Bioinformatics Applications	→	**BIO/CHEM 4451** Bioinformatics Applications	Credit applied to Extension Electives
CHEM 444 Polymers & Coatings I	→	**CHEM 4480** Polymer Synthesis and Characterization	
CHEM 445 Polymers & Coatings II	✗	Credit applied to advanced electives	

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Biochemistry: Concentration

Advanced Chemistry Electives
Non Polymers & Coatings

2026-28 Course Mappings
To be used to show how previously taken quarter courses will count towards the 2026-28 Semester Catalog Requirements

CONCENTRATION

QUARTER REQUIREMENT- LIST A		SEMESTER COURSE or MAPPING	NOTES
CHEM/MATE 446 Surface Chemistry of Materials	→	**CHEM 4486** Surface Chemistry of Materials	
CHEM 447 Polymers & Coatings Laboratory I	→	**CHEM 4481** Polymer Synthesis and Characterization Laboratory	
CHEM 448 Polymers & Coatings Laboratory II	✗	Credit applied to Advanced Electives	
CHEM 449 Polymers & Coatings Internship	✗	Credit applied to Advanced Electives	
CHEM 450 Polymers & Coatings III	→	**CHEM 4482** Coatings & Formulations	
CHEM 451 Polymers & Coatings Laboratory III	→	**CHEM 4483** Coatings & Formulations Laboratory	
CHEM 454 Functional Polymeric Materials	→	**CHEM 4484** Functional Polymeric Materials	
CHEM 458 Adv. Organic Chemistry - Spectroscopy	→	**CHEM 4444** Advanced Organic Chemistry Laboratory	
CHEM 463 Honors Research	✗	Credit applied to Advanced Electives	
CHEM 465 College Teaching Practicum	→	**CHEM 4415** College Teaching Practicum	
CHEM 466 Learning Assistant Seminar	→	**CHEM 4404** Learning Assistant Seminar	
CHEM 470 Selected Advanced Topics	→	**CHEM 4470** Special Advanced Topics	
CHEM 471 Selected Advanced Laboratory	→	**CHEM 4471** Special Advanced Laboratory	
CHEM 474 Protein Techniques Laboratory	→	**CHEM 4454** Protein Techniques	
CHEM 477 Biochemical Pharmacology	✗	Credit applied to Advanced Electives	
CHEM 481 Inorganic Chemistry	✗	Credit applied to Advanced Electives	

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Biochemistry: Concentration

Advanced Chemistry Electives
Non Polymers & Coatings

2026-28 Course Mappings
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CONCENTRATION

QUARTER COURSE- LIST A		SEMESTER COURSE or MAPPING	NOTES
CHEM 484 Inorganic Chemistry Laboratory	✕	Credit applied to Advanced Electives	
CHEM 485 Cooperative Education Experience	→	**CHEM 4485** Cooperative Education Experience-Part Time	
CHEM 495 Cooperative Education Experience	→	**CHEM 4495** Cooperative Education Experience-Full Time	
SCM 302/ENGR 322 Learn by Doing Lab Teaching Practicum	→	**SCM 302/ENGR 3302** The Learn by Doing Lab Teaching Practicum	

ADVANCED ELECTIVES LIST B

QUARTER REQUIREMENT- LIST B		SEMESTER COURSE	NOTES
BIO/CHEM 308 Genetic Engineering Technology OR **CHEM 349** Chemical & Biological Warfare OR **ENVE 324** Introduction to Air Pollution OR OR **SCM 360** Selected Env. Issues of Calif's Central Coast	→	**BIO/CHEM 3318** Genetic Engineering Technology OR **CHEM 3374** Chemical and Biological Warfare OR **ENVE 3324** Introduction to Air Pollution - C OR **SCM 3360** Select Env. Issues of Calif's Central Coast	Credit applied to Advanced Electives?
BIO 351 Principles of Genetics	→	**BIO 3351** Principles of Genetics	Credit applied to Extension Electives
BIO 361 Principles of Animal Physiology	→	**BIO 3352** Principles of Animal Physiology	Credit applied to Extension Electives
BIO 405 Developmental Biology	→	**BIO 4455** Developmental Biology	Credit applied to Extension Electives
BIO 406 Adv. Anatomy & Physiology: Neuroscience	→	**BIO 4433** Neuroscience	Credit applied to Extension Electives
BIO 407 Adv. Anatomy & Physiology: Endocrinology	→	**BIO 4434** Endocrinology	Credit applied to Extension Electives
BIO 408 Adv. Anatomy & Physiology: Cardiorespiratory	→	**BIO 4432** Adv. Anatomy & Physiology I	Credit applied to Extension Electives
BIO 409 Adv. Anatomy & Physiology: Muscle & Locomotion	→	**BIO 4431** Adv. Anatomy & Physiology II	Credit applied to Extension Electives
BIO 410 Functional Histology	→	**BIO 4436** Functional Histology	Credit applied to Extension Electives

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BCHM: Concentration

Advanced Chemistry Electives
Non Polymers & Coatings

2026-28 Course Mappings
To be used to show how previously taken quarter courses will count towards the 2026-28 Semester Catalog Requirements

	QUARTER REQUIREMENT - LIST B		SEMESTER COURSE or MAPPING	NOTES
ADVANCED ELECTIVES- LIST B	**BIO 426** Immunology	→	**BIO 4456** Immunology	Credit applied to Extension Electives
	BIO 452 Cell Biology	→	**BIO 4452** Cell Biology	Credit applied to Extension Electives
	MCRO 402 General Virology	→	**MCRO 4402** General Virology	Credit applied to Extension Electives
	MCRO 423 Medical Microbiology	→	**MCRO 4423** Medical Microbiology	Credit applied to Extension Electives
	MCRO 424 Microbial Physiology	→	**MCRO 4424** Microbial Physiology & Biochemistry	Credit applied to Extension Electives
	STAT 312 Statistical Methods for Engineers	→	**STAT 3210** Engineering Statistics	Credit applied to free electives

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BCHM: Concentration
Polymers & Coatings Concentration

2026-28 Course Mappings
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POLYMERS & COATINGS CONCENTRATION

QUARTER COURSE		SEMESTER COURSE or MAPPING	NOTES
CHEM 444 Polymers & Coatings I	→	**CHEM** 4480 Polymer Synthesis and Characterization	
CHEM 445 Polymers & Coatings II	→	**CHEM 4482** Coatings and Formulations	
CHEM 446 Surface Chemistry of Materials	→	**CHEM 4486** Surface Chemistry of Materials	
CHEM 447 Polymers & Coatings Laboratory I	→	**CHEM 4481** Polymer Synthesis and Characterization Laboratory	
CHEM 448 Polymers & Coatings Laboratory II	→	**CHEM 4483** Coating and Formulations Laboratory	
CHEM 450 Polymers & Coatings III	✗	Units applied to concentration area	
Select One **CHEM 449** Polymers & Coatings Internship **OR** **CHEM 451** Polymers & Coatings Laboratory III	→	Select One **CHEM 4487** Polymers & Coatings Internship OR **DISCONTINUED**	

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