

BIOCHEMISTRY B.S./BIOCHEMISTRY M.S. COMBINED PROGRAM: Sample Plan of Study
(2024-25 General Bulletin or later)

Freshman Year: Fall

BIOC 101	Frontiers in Biochemistry	1
BIOL 214	Genes, Evolution and Ecology	3
BIOL 214L	Genes, Evolution and Ecology Laboratory	1
CHEM 105 or CHEM 111	Principles of Chemistry I or Principles of Chemistry for Engineers	3
CHEM 113	Principles of Chemistry Laboratory	2
MATH 121	Calculus for Science and Engineering I	4
GER	Academic Inquiry Seminar or Breadth course	3
Semester total:		17 credit hours

Freshman Year: Spring

BIOL 215	Cells and Proteins	3
BIOL 215L	Cells and Proteins Laboratory	1
CHEM 106 or ENGR 145	Principles of Chemistry II or Chemistry of Materials	3
MATH 122 or MATH 124	Calculus for Science and Engineering II or Calculus II	4
PHYS 121 or PHYS 123	General Physics I or Physics and Frontiers I	4
GER	Academic Inquiry Seminar or Breadth course	3
Semester total:		18 credit hours

Sophomore Year: Fall

CHEM 223 or CHEM 323	Introductory Organic Chemistry I or Organic Chemistry I	3
CHEM 233	Introductory Organic Chemistry Laboratory I	2
PHYS 122 or PHYS 124	General Physics II or Physics and Frontiers II	4
ENGR 131 or CSDS 132	Elementary Computer Programming or Programming in Java	3
GER	Two Breadth or elective courses	6
(BIOC 285)	(Honors Readings in Biochemistry; research honors students only)	(1)
Semester total:		18 credit hours

Sophomore Year: Spring

CHEM 224 or CHEM 324	Introductory Organic Chemistry II or Organic Chemistry II	3
CHEM 234	Introductory Organic Chemistry Laboratory II	2
STAT 312 or STAT 312R or STAT 313	Basic Statistics for Engineering/Science (using R) or Statistics for Experimenters	3
Elective	Elective course	3
GER	Two Breadth or elective courses	6
Semester total:		17 credit hours

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Junior Year: Fall

BIOC 307	Introduction to Biochemistry: From Molecules to Medical Science	4
BIOC core or technical elective	BIOC 334 (core course) or approved technical elective course	3
Electives	Two elective courses	6
BIOC 391	Capstone Research	3
GER	Breadth or elective course	3
Semester total:		19 credit hours

Junior Year: Spring

BIOC 308	Molecular Biology	4
BIOC core or technical elective	BIOC 312 (core course) or approved technical elective course	3
Electives	Three elective courses (one course should be BIOC 391 for research honors students)	9
GER	Breadth or elective course	3
Semester total:		19 credit hours

Senior Year: Fall

BIOC 373	Biochemistry Senior Seminar	3
*BIOC core or technical elective	BIOC 434 or BIOC 450 (core courses) or approved graduate level technical elective course	3
(BIOC 500)	(Biotechnology Lab: Molecular Biology) (waived after completion of BIOC 391 and passing proficiency test)	(1)
*BIOC 501	Biochemical and Cellular Techniques for Biotechnology	3
BIOC 601	Biochemical Research	3
Graduate electives	Two approved graduate-level elective courses	6
Semester total:		18 credit hours

Senior Year: Spring

BIOC 393 (BIOC 393R)	Senior Capstone Communication (BIOC 393R instead of BIOC 393 for research honors students)	3
*BIOC core or technical elective	BIOC 412 (core course) or approved technical elective course	3
BIOC 502A/502B/503	Biotechnology Lab (502A/502B in spring or 503 in summer)	2
BIOC 601	Biochemical Research	3
Graduate electives	Two approved graduate-level elective courses	6
EXAM 600	Master's Comprehensive Exam	1
Semester total:		18 credit hours

Biochemistry B.S. total (114 + 9 double-counted): 123 credit hours

Biochemistry M.S. total: 30 credit hours

*Double-counted courses: 9 credit hours may be double-counted, e.g. 3 graduate-level BIOC core/technical elective courses

Waived Biochemistry M.S. requirements: The requirements for BIOC 407 and BIOC 408 are waived for students who completed BIOC 307 and BIOC 308, respectively. Other graded approved graduate courses will be accepted as substitution.

Research continuation: BIOC 391 and BIOC 601 research may be in the same lab but students cannot enroll in both courses in the same semester.