BIOCHEMISTRY (BS)

Biochemistry

Concentration Not Yet Declared - BS in Biochemistry

Suggested Four-Year Flowcharts are planning guides and do not represent a required course sequence. Courses may be completed in a different order, provided requisite requirements are satisfied.

First Year		
Term 1		**Units**
CHEM 1120	Fundamentals of Chemical Structure and Properties (5A & 5C) [1]	4
BIO 1151	Life: Molecules and Cells (5B) [1]	4
MATH 1261	Calculus I (2) [1]	4
General Education Requirement (1A)		3
Free Elective [1]		1
	Units	**16**
Term 2		
CHEM 1103	Research Methods I	1
CHEM 1122	Fundamentals of Chemical Reactivity	4
MATH 1262	Calculus II	4
PHYS 1141	General Physics I	4
General Education Requirement (1C)		3
	Units	**16**
Second Year		
Term 1		
CHEM 2242	Organic Chemistry I	5
MCRO 2224	General Microbiology I	4
PHYS 1143	General Physics II	4
General Education Requirement (1B)		3
	Units	**16**
Term 2		
CHEM 2201 or CHEM 2203	Undergraduate Research or Research Methods II	1
CHEM 3330	Foundations of Chemical Analysis	4
CHEM 3352	Biochemistry (Upper-Division 2/5) [1]	4
General Education Requirement		3
General Education Requirement		3
	Units	**15**
Third Year		
Term 1		
CHEM 3302	Undergraduate Seminar II	1
CHEM 3356	Genetic Information Processing	4
CHEM 3390	Physical Chemistry for Life Sciences	3
CHEM 3391	Physical Chemistry for Life Sciences Laboratory	1
Concentration or Advanced Elective Course [2,3,4,5,6]		4
General Education Requirement		3
	Units	**16**
Term 2		
CHEM 3354	Metabolism	3
CHEM 4453 or CHEM 4454	Molecular Biology Techniques or Protein Techniques	2
Concentration or Advanced Elective Course [2,3,4,5,6]		4
General Education Requirement		3
General Education Requirement		3
	Units	**15**
Fourth Year		
Term 1		
CHEM 4461	Senior Project I	1
Biochemistry Advanced Elective		2-3
Concentration or Advanced Elective Course [2,3,4,5,6]		5
General Education Requirement		3
	Units	**11**

Term 2		
CHEM 4462	Senior Project II	1
BIO/MCRO Advanced Elective		3-4
Concentration or Advanced Elective Course [2,3,4,5,6]		4
General Education Requirement		3
Free Elective [7]		2-4
	Units	**15**
	Total Units	**120**

1 Required in Major or Support; also satisfies General Education (GE) requirement.

2 Courses taken to meet a Major requirement cannot be double-counted in the Advanced Electives.

3 Consultation with advisor is recommended prior to selecting advanced electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.

4 A minimum of 5 units must be taken at the 3000-4000 level.

5 Maximum of 4 units may be applied toward Advanced Electives from CHEM 4401.

6 Maximum of 2 units may be applied toward Advanced Electives from the following: CHEM 4404, CHEM 4485, CHEM 4495, or SCM/ENGR 3302.

7 If a General Education (GE) course is used to satisfy a Major or Support requirement, additional units of Free Electives may be needed to complete the total units required for the degree.

Polymers and Coatings

Polymers and Coatings Concentration - BS in Biochemistry

Suggested Four-Year Flowcharts are planning guides and do not represent a required course sequence.
Courses may be completed in a different order, provided requisite requirements are satisfied.

First Year		
Term 1		**Units**
CHEM 1120	Fundamentals of Chemical Structure and Properties (5A & 5C) [1]	4
BIO 1151	Life: Molecules and Cells (5B) [1]	4
MATH 1261	Calculus I (2) [1]	4
General Education Requirement (1A)		3
Free Elective [1]		1
	Units	**16**
Term 2		
CHEM 1103	Research Methods I	1
CHEM 1122	Fundamentals of Chemical Reactivity	4
MATH 1262	Calculus II	4
PHYS 1141	General Physics I	4
General Education Requirement (1C)		3
	Units	**16**
Second Year		
Term 1		
CHEM 2242	Organic Chemistry I	5
CHEM 3390	Physical Chemistry for Life Sciences	3
CHEM 3391	Physical Chemistry for Life Sciences Laboratory	1
PHYS 1143	General Physics II	4
General Education Requirement (1B)		3
	Units	**16**
Term 2		
CHEM 2201 or CHEM 2203	Undergraduate Research or Research Methods II	1
CHEM 3352	Biochemistry (Upper-Division 2/5) [1]	4
CHEM 3380	Foundations of Macromolecular Chemistry	4
General Education Requirement		3
General Education Requirement		3
	Units	**15**
Third Year		
Term 1		
CHEM 3302	Undergraduate Seminar II	1
CHEM 3356	Genetic Information Processing	4
CHEM 4480	Polymer Synthesis and Characterization	3
CHEM 4481	Polymer Synthesis and Characterization Laboratory	2
MCRO 2224	General Microbiology I	4
General Education Requirement		3
	Units	**17**
Term 2		
CHEM 3330	Foundations of Chemical Analysis	4
CHEM 3354	Metabolism	3
CHEM 4482	Coatings and Formulations	3
CHEM 4483	Coatings and Formulations Laboratory	2
General Education Requirement		3
	Units	**15**
Fourth Year		
Term 1		
CHEM 4461	Senior Project I	1
CHEM 4453 or CHEM 4454	Molecular Biology Techniques or Protein Techniques	2
Biochemistry Advanced Elective		2-3
General Education Requirement		3
General Education Requirement		3
	Units	**11**

Term 2		
CHEM 4462	Senior Project II	1
CHEM 4486	Surface Chemistry of Materials	3
BIO/MCRO Advanced Elective		3-4
General Education Requirement		3
Free Elective [7]		2-3
	Units	**14**
	Total Units	**120**

1 Required in Major or Support; also satisfies General Education (GE) requirement.
2 Courses taken to meet a Major requirement cannot be double-counted in the Advanced Electives.
3 Consultation with advisor is recommended prior to selecting advanced electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.
4 A minimum of 5 units must be taken at the 3000-4000 level.
5 Maximum of 4 units may be applied toward Advanced Electives from CHEM 4401.
6 Maximum of 2 units may be applied toward Advanced Electives from the following: CHEM 4404, CHEM 4485, CHEM 4495, or SCM/ENGR 3302.
7 If a General Education (GE) course is used to satisfy a Major or Support requirement, additional units of Free Electives may be needed to complete the total units required for the degree.