

Bachelor of Science, Major in Chemistry, Minor in Biology
Program Grid

Note: This program grid is provided for guidance only. Degree completion is based on courses completed successfully and is subject to all applicable requirements and procedures in effect. Students should consult the B.Sc. Degree Advisor to confirm program requirements for their chosen degree.

Course Number	Course Name	Credits	Upper-Level Credits	Notes
English 1	100-level English I	3		1
English 2	100-level English II	3		1
MATH 100 or 121	Calculus I	4		
MATH 101 or 122	Calculus II	4		
Non-Science 100-499	Non-Science Elective I	3		2
Non-Science 100-499	Non-Science Elective II	3		2
BIOL 121A and 121L	Introductory Zoology	4		
BIOL 123A and 123L	Intro. Cellular & Molecular Biology	4		
CHEM 140A and 140L	Chemistry Fundamentals I	4		
CHEM 141A or 142A, and 142L	Chemistry Fundamentals II	4		
PHYS 111 or 121	Physics I	4		
PHYS 112 or 122	Physics II	4		
BIOL 201	Principles of Biochemistry I	3		
CHEM 212	Environmental Chemical Analysis	4		
CHEM 213	Practical Spectroscopy	3		
CHEM 222	Inorganic Chemistry	4		
CHEM 231	Organic Chemistry I	4		
CHEM 232	Organic Chemistry II	4		
CHEM 241	Physical Chemistry	4		
MATH 200-299	200-Level Mathematics Elective	3		3
CHEM 300	Green Chemistry and Toxicology	3	3	
CHEM 312	Principles Instrumental Analysis	3	3	
CHEM 341	Reaction Kinetics and Mechanisms	3	3	
CHEM 351	Integrated Organic / Inorganic Laboratory	4	4	
CHEM 352	Integrated Physical Laboratory	4	4	
CHEM 400	Emerging Topics & Professional Practice	3	3	
CHEM 412	Advanced Topics in Analytical Chemistry	3	3	
CHEM 441	Bonding, Structure, and Properties	3	3	
CHEM 300-499 Option	Specialization Course I	3	3	4
CHEM 300-499 Option	Specialization Course II	3	3	4
CHEM 300-499 Option	Specialization Course III	3	3	4
BIOL 200, 202, 210, 212 or 223	200-Level Biology Elective I	3		5
BIOL 200, 202, 210, 212 or 223	200-Level Biology Elective II	3		5
BIOL 300-499	Upper-Level Biology Elective I	3	3	6
BIOL 300-499	Upper-Level Biology Elective II	3	3	6
BIOL 300-499	Upper-Level Biology Elective III	3	3	6
BIOL 300-499	Upper-Level Biology Elective IV	3	3	6
Elective 100-499	General Elective	2		6
TOTAL:		128	47	

See notes on the next page /...

NOTES:

1. The Degree English Requirement can be met as follows:
 - Two of ENGL 115 (or 117), 125 (or 127), 135, 204, or an INTR course that includes a ENGL course exemption; or,
 - LBST 111 and 112.
2. Non-Science Electives can be any courses outside of the Science discipline numbered 100-499. The following courses may not be counted to meet this requirement, although they may be counted as general electives:
 - Any course beginning with the following discipline identifiers: AQUA, ASTR, BIOL, CHEM, CSCI, ENGC, ENGE, ENGM, ENGR, FISH, FRST, GEOL, MATH, PHYS, RMOT, QUME, and SCIE.
 - Anthropology: ANTH 111, 213, 214, 341B, 342, 343, 344, 350, 351, 352, 353 361, 401, 430, 449, 460.
 - Geography: GEOG 211, 212, 221, 226, 228, 326, 328, 372, 373, 374, 376, 426, 428.
 - Psychology: PSYC 204, 205, 300A, 300B, 301, 302, 305, 315, 316, 318, 319, 323, 324, 345, 365, 400, 415, 419, 445, 490, 491, 498A.
 - Kinesiology: KIN 201, 220, 301, 302, 400, 401.
3. The 200-Level Mathematics Elective can be chosen from MATH 141, 203, 211, 221, 241, or 254.
 - Note: A Statistics course is recommended for students completing the Minor in Biology (MATH 203, 211, or 254).
4. The Chemistry Specialization consists of 9 credits (3 courses) chosen from one of the following options:
 - Biological Chemistry: CHEM 323, 334, 335, 432, or 433.
 - Environmental Chemistry: CHEM 301, 302, 325, 401, or 431.

Students without a Chemistry Specialization require 9 credits of Upper-Level CHEM Electives.

Additional Experiential Learning Opportunities (credits taken as electives):

 - CHEM 380 - (Independent Work Experience in Chemistry) (3 credits)
 - CHEM 390 - (Field Studies in Chemistry) (3 credits)
 - CHEM 491 - (Undergraduate Research Project) (6 credits)
5. The 200-Level Biology Elective can be chosen from BIOL 200, 202, 210, 212 or 223.
 - Note: Students should check upper-level course prerequisites to guide selection of the 200-Level Biology Electives.
6. Upper-Level Biology Electives can be any BIOL course numbered 300-499.
 - Up to 4 credits from following courses may be counted towards this requirement: FISH 322, FISH 324, FRST 328, FRST 351, FRST 352, GEOG 328, GEOG 373, RMOT 306, RMOT 357, RMOT 400, and RMOT 401.