

Bachelor of Science, Major in Chemistry, Minor in Aquaculture  
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
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	Upper-Level Chemistry Elective I	3	3	4
CHEM 300-499	Upper-Level Chemistry Elective II	3	3	4
CHEM 300-499	Upper-Level Chemistry Elective III	3	3	4
AQUA 101	Introduction to Aquaculture	3		
BIOL 123A and 123L	Intro. Cellular & Molecular Biology	4		
Aquaculture 100-299 Elective	Lower-Level Aquaculture Elective	3		5
AQUA 300-499	Upper-Level Aquaculture Elective I	3	3	6
AQUA 300-499	Upper-Level Aquaculture Elective II	3	3	6
AQUA 300-499	Upper-Level Aquaculture Elective III	3	3	6
AQUA 300-499	Upper-Level Aquaculture Elective IV	3	3	6
Elective 100-499	General Elective I	3		7
Elective 100-499	General Elective II	2		7
	<b>TOTAL:</b>	<b>127</b>	<b>47</b>	

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.
  - MATH 203 or 211 can also count as a Lower-Level Aquaculture Elective.
4. Upper-Level Chemistry Electives can be any CHEM course numbered 300-499. 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 Lower-Level Aquaculture Electives can be chosen from any of the following: BIOL 212; CHEM 212; FISH 127, 133, 222, 223, 231, 241, 254; INDG 203, 204; or MATH 181, 203, 211.
  - Only one of MATH 181, 203, or MATH 211 may be used to fulfill this credit requirement.
6. Upper-Level Aquaculture Electives can be any AQUA course numbered 300-499.
  - Up to 4 credits can be chosen from the following courses: any upper-level FISH course, GEOG 356, INDG 300, or MGMT 381.
7. General Electives can be courses in any discipline numbered 100-499.