

Biology Major: Aquatic Science Concentration - Bachelor of Science (BS)

Major requirements

(All colleges, excluding teacher certification programs)

39 credits (67 total credits including CHM and MTH requirements)

Each student must have a minimum of three 400 level BIO credits (excluding BIO 450, 479, 489, 491, 495, and 499) to fulfill requirements of the major.

Code	Title	Credits
Core		
BIO 105	General Biology	4
BIO 203	Organismal Biology	4
BIO 306	Genetics	4
BIO 307	Ecology	3
BIO 315	Cell Biology	4
BIO 341	Limnology	3
BIO 491	Capstone Seminar in Biology	1
MIC 230	Fundamentals of Microbiology	4
Electives		12

Select eight credits of electives from List I. Remaining four credits may come from List I or List II (up to two credits of BIO 499 may count).

List I electives:

BIO 405	Aquatic and Wetland Vascular Plants
BIO 414	Freshwater Invertebrate Zoology
BIO 422	Ichthyology
BIO 447	Standard Methods/Quality Assurance Water Analyses
BIO 464	Stream and Watershed Ecology
BIO 473	Marine Biology
MIC 434	Aquatic Microbial Ecology

List II electives:

BIO 406	Parasitology
BIO 419	Quantitative Methods in Ecology
BIO 421	Comparative Vertebrate Endocrinology
BIO 441	Environmental Toxicology
BIO 444	Entomology
BIO 446	Animal Behavior
BIO 458	Comparative Animal Physiology
BIO 476	Ecosystem Ecology
BIO 499	Independent Research (up to two credits)

Chemistry requirement

Select a minimum of 20 chemistry credits, including: 20

CHM 103	General Chemistry I
CHM 104	General Chemistry II
CHM 301	Analytical Chemistry

And one of the following organic chemistry options:

Option A (5 credits) ¹

CHM 300 & CHM 302	Fundamental Organic Chemistry and Fundamental Organic Chemistry Laboratory
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Option B (7 credits)

CHM 303 & CHM 304 & CHM 302	Organic Chemistry Theory I and Organic Chemistry Theory II and Fundamental Organic Chemistry Laboratory
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Option C (8 credits)

CHM 303 & CHM 304 & CHM 305	Organic Chemistry Theory I and Organic Chemistry Theory II and Organic Chemistry Laboratory
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Math requirement

Select a minimum of eight credits of mathematics including the following: 8

STAT 145	Elementary Statistics
or MTH 265	Mathematical Models in Biology
MTH 175	Applied Calculus
or MTH 207	Calculus I

Total Credits 67

¹ This is the recommended option for most biology majors, but students should consult with their biology advisor before enrolling.

Degree requirements

All students must complete the general education, college core, major/minor, and university degree requirements in order to qualify for a degree. The easiest way to track all of these requirements is to refer to the Advisement Report (AR) found in the Student Information System (WINGS) Student Center. All enrolled students have access to the AR.

- General education (<http://catalog.uwlax.edu/undergraduate/generaleducation/>)
- College core (p. 1)
- Baccalaureate degree requirements (p. 2)

College of Science and Health (CSH) Bachelor of Science core requirements

B.S. and B.A. students graduating from the College of Science and Health are required to take two natural laboratory science courses selected from the general education laboratory science category (GE 05) and/or from BIO 203, BIO 304, BIO 210, CHM 104, GEO 221, GEO 222, PHY 104 or PHY 204, and they either must take two mathematics courses or one math course and one computer science course from the math/logical systems category of the general education requirements (GE 02). One of the two science courses must be from a department outside of the student's major department.

Note: Math courses can be pairs, i.e. 150 and 151; MTH/CS majors can use two science courses from same department.

For the Bachelor of Science degree, in addition to all other College of Science and Health core requirements, students from non-exempted programs ¹ must complete one of the following options. It is recommended that courses are selected in consultation with students' academic advisor.

1. Complete a second major; or
2. Complete a minor outside the major; or

3. Complete two certificates outside the major with at least 12 combined credits at the 300/400 level; or
4. Complete an individualized option, consisting of 18 credits
 - a. At least 12 credits must be earned at the 300/400 level outside the major department.
 - b. The remaining six credits should come from
 - i. 100 level or higher courses outside the major (General education courses may apply provided they are not being used to fulfill minimum general education requirements.); or
 - ii. 300/400 level courses inside major not being used to fulfill major requirements.
 - c. Internship credits may not count toward the individualized option.

¹ The list of exempted CSH programs is below.

Baccalaureate degree requirements

Candidates for the Bachelor of Arts or the Bachelor of Science degrees must accomplish the following:

1. Fulfill the general education requirements.
2. Complete at least one ethnic studies (diversity) course.
3. Complete the courses prescribed by the Undergraduate Curriculum Committee for the degree desired in the respective school or college.
4. Earn a minimum of 120 semester credits with at least a 2.00 cumulative GPA.^{1,2}
5. At least 40 credits must be earned in 300/400 level courses. Transfer courses earned or transferred at the 300/400 level apply to this requirement.
6. Complete major and minor requirements with at least a 2.00 GPA^{1,2} in each major and minor (and concentration or emphasis, if selected).
7. A minimum of 30 semester credits in residence at UWL is required for graduation. (See undergraduate resident requirement (<http://catalog.uwlax.edu/undergraduate/academicpolicies/graduation/#undergraduate-residence-requirement>)).
8. Submit an application for graduation via the "Apply for Graduation" link in the WINGS Student Center as soon as the student has registered for his or her final semester or summer term in residence. December and winter intersession graduates should apply by May 1. May and summer graduates should apply by December 1.

¹ Grade point average requirements for some programs will be considerably higher than 2.00. Re-entering students may be required to earn credits in excess of the 120 needed for graduation in any curriculum in order to replace credits earned in courses in which the content has changed substantially in recent years. Each case will be judged on its own merit.

² The grade point average recorded at the time the degree is awarded will not be affected by future enrollment.

No degree will be awarded unless all requirements are fulfilled and recorded within 30 days after the official ending date of each term.

Sample degree plan

Below is a sample degree plan that can be used as a guide to identify courses required to fulfill the major and other requirements needed for degree completion. A student's actual degree plan may differ depending on the course of study selected (second major, minor, etc.). Also, this sample plan assumes readiness for each course and/or major plan, and some courses may not be offered every term. Review the course descriptions or the class timetable (<http://www.uwlax.edu/records/regISTRATION/>) for course offering information.

The sample degree plans represented in this catalog are intended for first-year students entering UWL in the fall term. Students should use the Advisement Report (AR) in WINGS (<https://wings.uwlax.edu>) and work closely with their faculty advisor(s) and college dean's office to ensure declaration and completion of all requirements in a timely manner.

General Education Program

The general education curriculum (Gen Ed) is the common educational experience for all undergraduates at UWL. Sample degree plans include Gen Ed placeholders to ensure completion of the general education requirements. Courses may be rearranged to fit the needs or recommendations of the student's program of study. Gen Ed courses may be taken during winter term (January between the semesters) and summer to reduce the course load during regular terms (fall and spring). Students should consult with their advisor and/or the college academic services director in their college/school for assistance with course and schedule planning. Refer to the general education requirements (<http://catalog.uwlax.edu/undergraduate/generaleducation/>) for more specific details.

At least 40 credits of the 120 credits required must be earned at the 300/400-level.

Note: New students and transfer students with less than 12 credits earned are required to take FYS 100 First-Year Seminar (3 cr.) during one of their first two semesters at UWL.

This sample degree plan does not establish a contractual agreement. It identifies the minimum requirements a student must successfully complete, to qualify for a degree, in a format intended to assist the student in planning their academic career. Actual degree plans may differ.

Year 1			
Fall	Credits	Spring	Credits
BIO 105 (Gen Ed Natural Lab Science)	4	ENG 110 or 112 (Gen Ed Literacy-Written)	3
CST 110 (Gen Ed Literacy-Oral)	3	BIO 203	4
MTH 207 or 175 (Gen Ed Math)	4-5	Gen Ed Self & Society	3
FYS 100 (Gen Ed First-Year Seminar)	3	CHM 103 (Gen Ed Natural Lab Science)	5
	14		15
Year 2			
Fall	Credits	Spring	Credits
BIO 307	3	CHM 300	4
CHM 104	5	CHM 302	1
STAT 145 or MTH 265 (Gen Ed Lang/Logical Systems)	4	MIC 230	4
Gen Ed Global Studies	3	Gen Ed Minority Cultures	3
		Gen Ed Arts	2-3
	15		14
Year 3			
Fall	Credits	Spring	Credits
Gen Ed Humanistic Studies	3	Gen Ed World History	3

BIO 341	3 CSH Core (300/400 not BIO) or Minor	3
CHM 301	5 University Elective	3
BIO 306	4 Gen Ed Health & Well-Being	3
	BIO 315	4
	15	16

Year 4

Fall	Credits Spring	Credits
University Elective	3 University Elective	3
BIO Elective (List I)	3 BIO 491	1
BIO Elective (List I)	3 BIO Elective (List I)	3
University Elective	3 BIO Elective (List I or II)	4
CSH Core or Minor ¹	3 CSH Core or Minor ¹	3
Gen Ed Arts	2-3	
	17	14

Total Credits: 120

¹ See CSH BS Core Requirements (<http://catalog.uwlax.edu/undergraduate/scienceandhealth/#Core>) for information on completing the individualized option. 300/400 requirements for graduation may be impacted.