

Mathematics Major - Bachelor of Arts (BA)

Major Requirements

(All colleges)

39 credits (43 total credits including CS 120)

| Code | Title | Credits |
|--|--|-----------|
| Core courses | | |
| MTH 207 | Calculus I | 5 |
| MTH 208 | Calculus II | 4 |
| MTH 225 | Foundations of Advanced Mathematics ¹ | 4 |
| MTH 309 | Linear Algebra | 4 |
| MTH 310 | Calculus III: Multivariable Calculus | 4 |
| Group I | | |
| Select three credits from the following: | | 3 |
| MTH 311 | Number Theory | |
| MTH 317 | Graph Theory | |
| Group II | | |
| Select three credits from the following: | | 3 |
| MTH 353 | Differential Equations and Dynamical Systems | |
| MTH 362 | Complex Variables | |
| MTH 371 | Numerical Methods | |
| Group III | | |
| Select six credits from the following: | | 6 |
| MTH 407 | Real Analysis I | |
| MTH 411 | Abstract Algebra I | |
| MTH 415 | Topology | |
| Electives ² | | |
| Select six credits not already taken from the following: | | 6 |
| MTH 311 | Number Theory | |
| MTH 317 | Graph Theory | |
| MTH 320 | History of Mathematics | |
| MTH 331 | Modern Geometry | |
| MTH 353 | Differential Equations and Dynamical Systems | |
| MTH 362 | Complex Variables | |
| MTH 371 | Numerical Methods | |
| MTH 407 | Real Analysis I | |
| MTH 408 | Real Analysis II | |
| MTH 411 | Abstract Algebra I | |
| MTH 412 | Abstract Algebra II | |
| MTH 415 | Topology | |
| STAT 245 | Probability and Statistics | |
| STAT 441 | Mathematical Statistics I | |
| STAT 442 | Mathematical Statistics II | |
| CHM 310 | Physical Chemistry Theory II ² | |
| CS 453 | Introduction to Theory of Computation ² | |
| PHY 461 | Mathematical Physics | |
| PHY 470 | Advanced Quantum Mechanics ² | |
| Total Credits | | 39 |

¹ May substitute CS 225 for MTH 225.

² At most, one from CHM 310, CS 453, and PHY 470 can be used as elective credit.

In addition CS 120 Software Design I (4 cr.) must be taken.

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 Arts 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 210, BIO 304, 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 Arts degree, students must complete a major from the college and proficiency in a world language at the 202 level or demonstrate English language proficiency for non-native speakers of English. Contact the CSH Dean's Office for eligibility and regulations.

Students must also complete one of the following options. It is recommended that courses are selected in consultation with your advisor.

1. Complete a minor in the College of Arts, Social Sciences, and Humanities/School of Visual and Performing Arts; or
2. Complete two certificates in the College of Arts, Social Sciences, and Humanities/School of Visual and Performing Arts with at least 12 combined credits at the 300/400 level; or
3. Complete an individualized option, consisting of 15 credits.
 - a. These courses must be from the College of Arts, Social Sciences, and Humanities/School of Visual and Performing Arts.
 - b. At least 9 credits must be earned at the 300/400 level.
 - c. General education courses may apply provided they are not being used to fulfill minimum general education requirements.
 - d. Internship credits may not count toward the individualized option.

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 |
| MTH 207 (Gen Ed Math) | 5 MTH 208 (Gen Ed Math) | 4 |
| PHY 103 (or other Gen Ed Natural Lab Science) | 4 PHY 104 (or other lab science for CSH Core requirement) | 4 |
| CST 110 (Gen Ed Literacy-Oral) | 3 ENG 110 or 112 (Gen Ed Literacy-Written) | 3 |
| Gen Ed World History | 3 FYS 100 (Gen Ed First-Year Seminar) | 3 |
| | 15 | 14 |

| Year 2 | | |
|----------------------------|--|-----------|
| Fall | Credits Spring | Credits |
| MTH 225 | 4 MTH 309 | 4 |
| MTH 310 | 4 CS 120 (Gen Ed Lang/Logical Systems) | 4 |
| Gen Ed Arts | 2-3 Gen Ed Minority Cultures | 3 |
| Gen Ed Global Studies | 3 202-level Language (CSH BA Core) | 4 |
| Gen Ed Health & Well-Being | 3 | |
| | 16 | 15 |

| Year 3 | | |
|--------------------------------------|--|-----------|
| Fall | Credits Spring | Credits |
| MTH 353, 362, or 371 (Group II) | 3 MTH 311 or 317 (Group I) | 3 |
| Gen Ed Humanistic Studies | 3 MTH Elective | 3 |
| Gen Ed Arts | 2-3 Gen Ed Self & Society | 3 |
| University Elective at 300/400 level | 3 CSH Core (300/400 CASSH elec) or CASSH Minor | 3 |
| University Elective at 300/400 level | 3 CSH Core (300/400 CASSH elec) or CASSH Minor | 3 |
| University Elective | 1 | |
| | 15 | 15 |

| Year 4 | | |
|--------------------------------------|--|---------|
| Fall | Credits Spring | Credits |
| MTH 407, 411, or 415 (Group III) | 3 MTH 407, 411, or 415 (Group III) | 3 |
| MTH Elective | 3 CSH Core (300/400 CASSH elec) or CASSH Minor | 3 |
| CSH Core or CASSH Minor ¹ | 3 CSH Core or CASSH Minor ¹ | 3 |
| University Elective at 300/400 level | 3 University Elective at 300/400 level | 3 |

| | | |
|--------------------------------------|-----------------------|----|
| University Elective at 300/400 level | 3 University Elective | 3 |
| 15 | | 15 |
| Total Credits: 120 | | |

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