

Microbiology Major: Medical Microbiology and Immunology Concentration - Bachelor of Science (BS)

Major requirements

(All colleges)

38 microbiology/biology credits (61 total credits including requirements outside BIO/MIC)

Code	Title	Credits
Biology core		
BIO 105	General Biology	4
Select one of the following:		4
BIO 203	Organismal Biology	
BIO 306	Genetics	
BIO 312	Human Anatomy and Physiology I	
BIO 315	Cell Biology	
Microbiology core		
MIC 230	Fundamentals of Microbiology	4
MIC 310	Immunology	3
MIC 407	Pathogenic Bacteriology	4
MIC 410	Immunology Laboratory	2
MIC 416	Prokaryotic Molecular Genetics	4
MIC 425	Bacterial Physiology	4
MIC 461	Capstone in Microbiology	1
Microbiology/biology electives		
Select at least three credits from List I, a maximum of two credits from List III: (see Electives list below)		8
Additional requirements		
Select one course in math, STAT 145 or above		4-5
Select a minimum of 19 credits of chemistry including:		19
CHM 103	General Chemistry I	
CHM 104	General Chemistry II	
Select one of the following:		
CHM 300 & CHM 302	Fundamental Organic Chemistry and Fundamental Organic Chemistry Laboratory	
CHM 303 & CHM 304 & CHM 302	Organic Chemistry Theory I and Organic Chemistry Theory II and Fundamental Organic Chemistry Laboratory	
CHM 303 & CHM 304 & CHM 305	Organic Chemistry Theory I and Organic Chemistry Theory II and Organic Chemistry Laboratory	
Select one of the following:		
CHM 325	Fundamental Biochemistry	

CHM 417 & CHM 418	Biochemistry I: Macromolecules and Biochemistry II: Metabolism
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Total Credits	61
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The physics series PHY 103/PHY 104 or PHY 203/PHY 204 may be required for students pursuing graduate or professional degrees.

Electives

Code	Title	Credits
List I		
MIC 350	Bacterial Diversity	3
MIC 380	Food Microbiology	4
MIC 420	Introductory Virology	3
MIC 421	Virology Laboratory	2
MIC 454	Mechanisms of Microbial Pathogenicity	2
MIC 458	Research Deconstruction	2
List II		
BIO 406	Parasitology	4
BIO 412	Mycology	4
BIO 413	Medical Mycology	3
BIO 435	Molecular Biology	3
BIO 449	Advanced Microscopy and Biological Imaging	3
CLI 440	Clinical Parasitology	1
CLI 484	Laboratory Management	2
MIC 427	Industrial and Fermentation Microbiology	3
MIC 428	Fermentation Microbiology Laboratory	2
MIC 440	Bioinformatics	2
CHM 445	Biochemistry of Antimicrobials	3
FNS 410	Food Safety	3
List III		
BIO 202	Introduction to Biological Data Analysis and Interpretation	2
MIC 150	Discovery Microbiology	3
MIC 489	Independent Study in Microbiology	1-2
MIC 499	Independent Research in Microbiology	1-2

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

College of Arts, Social Sciences, and Humanities (CASSH/VPA) Bachelor of Science core requirements

The CASSH core provides opportunities for students to deepen their knowledge by taking courses in the arts, humanities, social sciences, and/or sciences beyond the requirements of general education. Students may select from courses offered by the full range of academic departments within the college according to their interests. The college

core allows students to build their critical thinking, communication, problem solving, teamwork, and global competencies through in-depth exploration of topics of their choosing.

The following conditions apply to one or both Bachelor of Arts and Bachelor of Science degrees:

1. Students majoring in English (writing and rhetoric or literary and cultural studies emphases) or in the department of global cultures and languages must earn a Bachelor of Arts degree. Education majors earn a Bachelor of Science degree; English major: medical professions emphasis majors may earn a Bachelor of Arts or Bachelor of Science degree.
2. Students majoring in other CASSH programs may choose either a B.A. or a B.S. degree.
3. Language courses at the 102-level or higher (ARA, CHI, FRE, GCL, GER, HCK, HMG, JPN, RUS, SPA, or SPE 214) used to fulfill a general education requirement may also be used to meet the B.A. and B.S. language requirements.
4. At least one course in the degree must be a CASSH designated diversity course.
5. All other courses used to meet the requirements below must be in addition to the minimum 41 credits required in the General Education Program.
6. Applicable courses may be found on the CASSH B.A./B.S. Degree Option Course List (<https://www.uwlax.edu/cassh/advising/>) or in the Advisement Report (AR) when the degree has been declared.

Courses used to fulfill general education requirements will not apply to core requirements, except for language courses as noted above.

Bachelor of Science students complete four courses outside the department of the student's major as follows:

1. A lab science course (from the general education list); and
2. A social science course; and
3. Another social science, general education experiential science, general education quantitative reasoning, or approved CASSH alternative course (BIO 312, BIO 313, ESS 205, ESS 206); and
4. One additional course in humanities, fine arts, or a global language course at the 102-level or higher (including SPE 214).

In addition to all other College of Arts, Social Sciences, and Humanities core requirements, all students in CASSH must complete a second major, minor, or individualized option by satisfying one of the following:

1. Complete a minor (or two certificates with at least 12 combined credits at the 300/400-level or a second major) outside of the student's major program, consisting of at least 18 credits; or
2. Complete an emphasis, program or concentration of at least 18 credits outside the student's major program. General education courses may apply provided they are not being used to fulfill minimum general education requirements; or
3. Complete an individualized option, consisting of 18 credits. At least 12 credits must be earned at the 300/400-level outside the major department. The remaining six credits may consist of:
 - a. 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
 - b. 300/400-level courses inside the major department not being used to fulfill major requirements.

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 (<https://catalog.uwlax.edu/undergraduate/academicpolicies/graduation/#undergraduate-residence-requirement>).)
8. Submit an application for graduation via the "Submit Intent to Graduate" 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 intercession 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 (<https://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 1008 Experiential Science)	4 CHM 103 (CSH Core - Gen Ed Experiential Science)	5
MTH 150 (Gen Ed 1004 Quantitative Reasoning)	4 ENG 110 (Gen Ed 1002 Written Literacy)	3
CST 110 (Gen Ed 1003 Spoken Literacy)	3 FYS 100 (Gen Ed 1001 First-Year Seminar)	3
Gen Ed 1007 Arts and Aesthetics	2 Gen Ed 1006 Mind and Body	3
Gen Ed 1011 Past That Define Us	3	
	16	14

Year 2

Fall	Credits Spring	Credits
MIC 230	4 MIC 310	3
CHM 104	5 MIC 410	2
Gen Ed 1013 Cultures of Our World	3 CHM 301 (or 300/400 not MIC/BIO for CSH Core)	5
CSH Core (MTH/STAT/CS from Quantitative Reasoning)	3-4 Gen Ed 1005 Ethnic Diversity	3
	Gen Ed 1007 Arts and Aesthetics	2
	15	15

Year 3

Fall	Credits Spring	Credits
MIC 407	4 MIC Elective (see list)	3
CHM 300 ¹	4 CHM 325 ³	4
CHM 302 ¹	1 To provide more options for 2nd BIO course elective (i.e. BIO 313)	3-4
BIO 203 ²	4 Gen Ed 1009 Social and Behavioral Studies	3
Gen Ed 1012 Planet That Sustains Us	3	
	16	14

Year 4

Fall	Credits Spring	Credits
MIC 416	4 MIC 425	4
MIC Elective (List 1)	3 MIC 461	1
Gen Ed 1010 Stories We Tell	3 CSH Core or Minor ⁴	3
CSH Core or Minor ⁴	3 MIC Elective (see list)	2

University Elective	3 University Elective	4
	16	14

Total Credits: 120

- ¹ Or CHM 303, CHM 304, and CHM 302; or CHM 303, CHM 304, and CHM 305.
- ² Or BIO 306, BIO 312, or BIO 315 in appropriate semester. Please consult with advisor.
- ³ Or CHM 417 and CHM 418.
- ⁴ See CSH BS Core Requirements (<https://catalog.uwlax.edu/undergraduate/scienceandhealth/#Core>) for information on completing the individualized option. 300/400 requirements for graduation may be impacted.