



Winona State University Four-Year Program Map

Created on 3/16/2026
Effective Fall 2026

Program: Bachelor of Science: Biology
Emphasis: Cell and Molecular

Fall Semester				Spring Semester			
	Course	Requirement Met	SH		Course	Requirement Met	SH
Year 1	BIOL 241 Basics of Life or BIOL 242 Organismal Diversity	GE Goal 3 & Major	4		BIOL 241 Basics of Life or BIOL 242 Organismal Diversity	GE Goal 3 & Major	4
	ENG 111 or CMST 191 or CMST 192	GE Goal 1	3-4		ENG 111 or CMST 191 or CMST 192	GE Goal 1	3-4
	Chem 212 Principles of Chemistry I	GE Goal 3 & Major	4		Chem 213 Principles of Chemistry II	GE Goal 3 & Major	4
	MATH 112 Applied Precalculus or MATH 120 Precalculus	GE Goal 4 & Major	3-4		MATH 140 Applied Calculus or MATH 212 Calculus I	GE Goal 4 & Major	3-4
	OR 100 Orientation	General Elective	1		BIOL 199 Seminar and Careers in Biology	Major	0
	BIOL 199 Seminar and Careers in Biology	Major	0				
	Both BIOL 241 and BIOL 242 must be taken for this major and completed prior to 300-level biology courses.				Both BIOL 241 and BIOL 242 must be taken for this major and completed prior to 300-level biology courses.		
First-Year Fall Semester Credit Hour Total			15-17	First-Year Spring Semester Credit Hour Total			14-16
Year 2	BIOL 310 Genetics or BIOL 308 Cell Biology	Major	3		BIOL 310 Genetics or BIOL 308 Cell Biology	Major	3
	BIOL 104 The Environment, Society, and Conservation*	GE Goals 8 & 10 &	3		BIOL 307 Cell Biology Laboratory or BIOL 311 Genetics Lab	Major	1
	CHEM 350 Principles of Organic Chemistry I**	Major	4		CHEM 351 Principles of Organic Chemistry II**	Major	4
	STAT 305 Biometry***	Major	3		General Education Elective	GE Goal 5-7, 9	3
	General Education Elective	GE Goal 5-7, 9	3		General Education Elective	GE Goal 5-7, 9	3
	BIOL 199 Seminar and Careers in Biology	Major	0		Physical Development/Wellness Elective	GE	1-2
	*BIOL 312 may be substituted for BIOL 104 **CHEM 340 may be substituted for CHEM 350 & CHEM 351 ***STAT 305 preferred, but STAT 210 may be substituted for STAT 305				BIOL 199 Seminar and Careers in Biology Major 0 **CHEM 340 may be substituted for CHEM 350 & CHEM 351		
Second-Year Fall Semester Credit Hour Total			16	Second-Year Spring Semester Credit Hour Total			15-16
Year 3	Cell Culture or Biotechnology Elective or BIOL Elective (see catalog)	Major	3-4		Cell Culture or Biotechnology Elective or BIOL Elective (see catalog)	Major	3-4
	CHEM 405 Biochemistry I	Major	3		BIOL Elective (see catalog)	Major	3-4
	CHEM 406 Biochemistry I Lab	Major	1		BIOL Elective (see catalog)	Major	3-4
	General Education Elective	GE Goal 5-7, 9	3		BIOL 499 Capstone Research	Major	1
	PHYS 201 General Physics I or PHYS 221 University Physics	GE Goal 3 & Major	4		PHYS 202 General Physics II or PHYS 222 University Physics	GE Goal 3 & Major	4
	Students may take BIOL 499 starting in Fall of Year 3 OR may take 3 SH of BIOL 498 starting in Year 3.				Students may take BIOL 499 starting in Fall of Year 3 OR may take 3 SH of BIOL 498 starting in Year 3.		
	Third-Year Fall Semester Credit Hour Total				Third-Year Spring Semester Credit Hour Total		
Year 4	BIOL 430 Molecular Genetics	Major	3		BIOL 499 Capstone Research or BIOL 498 Biology Capstone	Major	1-3
	Cell Culture or Biotechnology Elective or BIOL Elective (see catalog)	Major	3-4		BIOL Elective (see catalog)	Major	3
	BIOL 499 Capstone Research	Major	1-2		BIOL Elective (see catalog)	Major	3
	General Education Elective	GE Goal 5-7, 9	3		General Education Elective	GE Goal 5-7, 9	3
	General Education Elective	GE Goal 5-7, 9	3		General Education Elective	GE Goal 5-7, 9	3
	Physical Development/Wellness Elective	GE	1-2				
					NOTE: To graduate, students MUST earn a minimum of 120 credits.		
Fourth-Year Fall Semester Credit Hour Total			14-17	Fourth-Year Spring Semester Credit Hour Total			13-15

Total Credit Hours (SH): 120

Guide to 4 Year Major Maps

- 4 Year Major Maps are intended to show a recommended four-year pathway to a degree. Students must be full-time, college ready, and ready to declare a major to follow the map exactly as shown. Maps are only a sample; there may be other pathways that lead to completion of the degree in four years.
- Major Maps are NOT intended to take the place of meetings with advisors.
- Major Maps are NOT intended to take the place of the Degree Audit (DARs/uAchieve).

All courses listed on a major map will be labelled as one or more of the following:

GE Goal	General Education Goal Area	Indicates that the course meets one of the 10 General Education Goals
Gen Elec	General Elective	Indicates that the course does not meet a General Education, Major or Minor requirement but does count toward the degree
Major	Major Requirement	Indicates that the course meets a Major requirement
Major Elec	Major Elective	Indicates that the course counts toward the major as an elective, must be chosen from list of approved courses
Minor	Minor Requirement	Indicates that the course meets a Minor requirement
CAI	Critical Analysis Intensive	Indicates that the course counts as a Critical Analysis Intensive
OI	Oral Intensive	Indicates that the course counts as an Oral Intensive
WI	Written Intensive	Indicates that the course counts as a Written Intensive
PDW	Personal Development and Wellness	Indicates that the course counts as a Personal Development and Wellness Requirement

General Education Goal Areas:

		Minimum credits required
Goal 1	Communication	7 credits
Goal 2	Critical Thinking (Met with completion of all other goal areas)	--
Goal 3	Natural Science	7 credits
Goal 4	Mathematics	3-4 credits
Goal 5	History, Social/Behavioral Sciences	9 credits
Goal 6	Humanities and Fine Arts	9 credits
Goal 7	Human Diversity	3 credits
Goal 8	Global Perspective	3 credits
Goal 9	Ethic and Civic Responsibility	3 credits
Goal 10	People and the Environment	3 credits

Graduation Requirements:

- Minimum of 120 total credits (semester hours) required for Bachelors' Degree
- Minimum of 40 General Education credits required
- Minimum of 40 Upper Division credits required
- Minimum of 30 Residence credits required in Junior/Senior years
- Minimum WSU cumulative grade point average of 2.00; some programs require higher grade point averages

Major Maps are not contracts. Winona State University reserves the right to make changes at any time, without prior notice, to programs, policies, procedures, and information described in this major map. Students should consult the appropriate academic department or college for currently accurate program information.