



## Winona State University Four-Year Program Map

Created on 2/5/2019  
Effective Fall 2018

**Program:** Chemistry - General (BS)<sup>†</sup>  
**Emphasis (optional):** Pre-Forensics

Fall Semester				Spring Semester			
	Course	Requirement Met	SH	Course	Requirement Met	SH	
<b>Year 1</b>	CHEM 212 Principles of Chemistry I	Major/GE Goal 3	4	CHEM 213 Principles of Chemistry II	Major/GE Goal 3	4	
	MATH 120 Precalculus or 212 Calculus I (Major)	GE Goal 4	4	MATH 212 Calculus I or 213 Calculus II	Major	4	
	ENG 111 College Reading & Writing	GE Goal 1	4	CMST 191 Public Speaking	GE Goal 1	3	
	SOC 210 Crime and Justice in America	GE Goal 9	3	BIOL 241 Basics of Life	Major Elective/PREF	4	
	Orientation	Recommended	1				
NOTE: Math Requirements are based on the major; however, a student's math placement is based on ACT score. It may be necessary for a student to take more than one major course.				NOTE: It is <b>highly recommended</b> that students <b>TA for CHEM 190</b> during their sophomore, junior, or senior year			
<b>First-Year Fall Semester Credit Hour Total</b>			<b>16</b>	<b>First-Year Spring Semester Credit Hour Total</b>			<b>15</b>
<b>Year 2</b>	CHEM 360 Chemical Information	Major/OI	2	CHEM 340 Organic Chemistry Survey or CHEM351*	Major	4-5	
	PHYS 201 Gen Physics I or 221 Univ Physics I <sup>†</sup>	Major	4	CHEM 320 Environmental Chemistry* OR	Major/GE Goal 10	3-4	
	MATH 213 Calculus II or General Education	Major/GE Goals 5-8	3-4	General Education <sup>a</sup>	GE Goals 5-8		
	CHEM 350* or General Education <sup>a</sup>	Major/GE Goals 5-8	3-4	SOC 424 Ethical Issues in Criminal Justice	Major Elective/PREF	3	
	SOC 315 Criminology	PREF	3	PHYS 202 Gen Physics II or 222 Univ Physics II <sup>†</sup>	Major	4	
NOTE: GE Goals 5-10 and Physical Development/Wellness can be taken in any semester. CHEM 350 may be taken instead of CHEM 340 if planning to take CHEM 351 as an elective.				NOTE: Students must earn a minimum of 40 credits at the 300-400 level. CHEM 320 offered alternating years.			
<b>Second-Year Fall Semester Credit Hour Total</b>			<b>15-17</b>	<b>Second-Year Spring Semester Credit Hour Total</b>			<b>14-16</b>
<b>Year 3</b>	CHEM 412 Physical Chemistry I	Major/CAI	3	CHEM 426 Analytical Chemistry II	Major/WI	4	
	CHEM 413 Physical Chemistry I Lab	Major/WI	1	General Education OR	GE Goals 5-8	3-4	
	CHEM 425 Analytical Chemistry I	Major	4	CHEM 320 Environmental Chemistry*	Major/GE Goal 10		
	BIOL 308 Cell Biology	Major Elect./PREF/WI	3	BIOL 310 Genetics	Major Elect/PREF/CAI	3	
	General Education	GE Goals 5-8	3	General Education	GE Goals 5-8	3	
	Physical Development and Wellness OR	PDW	1-3	Physical Development and Wellness OR	PDW	1-3	
	General Education	GE Goals 5-8		General Education	GE Goals 5-8		
NOTE: Students must earn 16 credits of CHEM/BIOL electives for major.				NOTE:			
<b>Third-Year Fall Semester Credit Hour Total</b>			<b>15-17</b>	<b>Third-Year Spring Semester Credit Hour Total</b>			<b>14-17</b>
<b>Year 4</b>	CHEM 405 Biochemistry AND CHEM 406 Biochem Lab	Major	4	CHEM 475 Seminar in Chemistry	Major/OI	1	
	CHEM 450 Advanced Inorganic Chemistry	Major	4	CHEM 407 Biochemistry II AND CHEM 408 Biochem II Lab	Major Elective/PREF/WI	4	
	BIOL 430 Molecular Biology	Major Elective/PREF	3	General Education	GE Goals 5-8	3	
	General Education	GE Goals 5-8	3	General Education	GE Goals 5-8	3	
	Physical Development and Wellness (if not taken earlier)	PDW	1-2	STAT 210 (Statistics) or STAT 305 (Biometry)	PREF	3	
NOTE: It is <b>highly recommended</b> that students <b>TA for CHEM 190</b> during their sophomore, junior, or senior year				NOTE:			
<b>Fourth-Year Fall Semester Credit Hour Total</b>			<b>14-16</b>	<b>Fourth-Year Spring Semester Credit Hour Total</b>			<b>14</b>

<sup>a</sup> **Must** select 2 GE Goal courses that cover 2 goal areas each, e.g. PHIL 330 (Biomedical Ethics)

<sup>†</sup> **Note:** this major will be ACS certified if students take the University Physics sequence (PHYS 221&222).

<b>Total Credit Hours (SH): 120</b>
-------------------------------------

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 fulltime, 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 System (DARs).

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.