



Winona State University
Four-Year Program Map

Created on 4/3/2023
Effective Fall 2023

Program: **Chemistry - ACS Materials Chemistry (BS CHMC)**
Emphasis (optional):

Fall Semester				Spring Semester		
	Course	Requirement Met	SH	Course	Requirement Met	SH
Year 1	CHEM 212 Principles of Chemistry	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 and Writing	GE Goal 1	4	CMST 191, 192 or 266	GE Goal 1	3
	General Education	GE Goals 5-10	3	PHYS 221 University Physics	Major	4
	Orientation	Recommended	1	Physical Development & Wellness	PDW	1
	<i>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 the math courses required in the major.</i>			<i>NOTE:</i>		
First-Year Fall Semester Credit Hour Total			16	First-Year Spring Semester Credit Hour Total		16
Year 2	CHEM 350 Principles of Organic Chemistry I	Major	4	CHEM 351 Principles of Organic Chemistry II	Major	4
	CHEM 360 Chemical Information	Major/OI	2	MATH 313 Differential Equations	Major	4
	PHYS 222 University Physics	Major	4	CME 280 and 281 Properties of Materials and Laboratory	Major/WI	4
	MATH 213 Calculus II or General Education	Major/GE Goals 5-10	3-4	General Education	GE Goals 5-10	3
	General Education	GE Goals 5-10	3	<i>NOTE:</i>		
	<i>NOTE: GE Goals 5-10 and Physical Development & Wellness can be taken in any semester. To remain under 120 credits, take courses that meet two goal areas within GOALS 5-10.</i>					
Second-Year Fall Semester Credit Hour Total			16-17	Second-Year Spring Semester Credit Hour Total		15
Year 3	CHEM 412 Physical Chemistry I	Major/CAI	3	CHEM 414 Physical Chemistry II	Major/CAI	3
	CHEM 413 Physical Chemistry I Laboratory	Major/WI	1	CHEM 415 Physical Chemistry II Laboratory	Major/WI	2
	CHEM 425 Analytical Chemistry I or CHEM 450 Adv Inorg Chem	Major	4	CHEM 451 Adv Inorganic Chem* or CHEM or MATH Elective	Major	2-4
	CHEM 410 Polymer Chemistry	Major	3	CHEM 411 Syn and Char of Materials* OR		
	General Education	GE Goals 5-10	3	CME 394 Polymer Science & Characterization	Major	3
	General Education	GE Goals 5-10	3	CHEM or MATH Elective	Major Elective	2-3
<i>NOTE:</i>			<i>NOTE: CHEM 451 is offered Springs of even-numbered years only. CHEM 411 is offered Springs of odd-numbered years only.</i>			
Third-Year Fall Semester Credit Hour Total			17	Third-Year Spring Semester Credit Hour Total		12-15
Year 4	CHEM 405 Biochemistry	Major	3	CHEM 475 Seminar in Chemistry	Major/OI	1
	CHEM 406 Biochemistry I Laboratory	Major/WI	1	CHEM 411 Syn & Char of Materials* OR	Major	3
	CHEM 450 Adv Inorganic Chemistry or CHEM 425 Analytical Chem I	Major	4	CME 394 Polymer Science & Characterization		
	CHEM or MATH Elective	Major Elective	2-4	CHEM or MATH Elective or CHEM 451 Adv Inorg Chem	Major	2-4
	General Education	GE Goals 5-10	3	General Education	GE Goals 5-10	3
	General Education	GE Goals 5-10	3	Physical Development & Wellness	PDW	1
<i>NOTE:</i>			<i>NOTE:</i>			
Fourth-Year Fall Semester Credit Hour Total			16-18	Fourth-Year Spring Semester Credit Hour Total		11-13

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.