

Winona State University
Four Year Map (128 credits)
Physical Science Teaching
License to teach Physics and Chemistry 9 - 12 in MN

Updated on 12/28/2018

Key:

GE goal	General Education Goal Area
GE	A general elective that counts toward graduation
Major	Satisfies a major requirement
Minor	Satisfies a minor requirement
Major E	Satisfies a major elective
CAI	Critical Analysis Intensive
OI	Oral Intensive
WI	Written Intensive
PDW	Personal Development and Wellness

General Education Goals (please see website for more information)

Goal 1	Communication (7 credits)
Goal 2	Critical Thinking (met when all other goals met)
Goal 3	Natural Science (7 credits)
Goal 4	Mathematics/Logical Reasoning (3 - 4 credits)
Goal 5	Social/Behavioral Sciences (9 SH)
Goal 6	Humanities and Fine Arts (9 credits)
Goal 7	Human Diversity (3 SH)
Goal 8	Global Perspective (3 SH)
Goal 9	Ethic and Civic Responsibility (3 SH)
Goal 10	People and the Environment (3 SH)

Fall Year 1			Spring Year 1		
Course	Requirement Met	SH	Course	Requirement Met	SH
Chemistry 212, Principles of Chemistry I	GE Goal 3/Major	4	Chemistry 213, Principles of Chemistry I	GE Goal 3/Major	4
Math 120, PreCalc	GE Goal 4	4	Math 212, Calculus 1	GE Goal 4/Major	4
English 111, College Rdg/Wrt	GE Goal 1	4	Communication Studies 191	GE Goal 1	3
OR 100, Intro to Higher Education	Gen Elective	1	Physics 221, University Physics 1	GE Goal 3/Major	4
General Education Elective (double cour	GE Goal 5/6/7/8/9/10	3	Physics 231, University Physics 1B	Major	1
			General Education Elective (or take in SL	GE Goal 5/6/7/8/9/10	3
Notes: May swap Eng 111 with CMST 191 in Spring; check for admission			Notes: track admission requirements		
		Total SH			Total SH
		16			19
Fall Year 2			Spring Year 2		
Course	Requirement Met	SH	Course	Requirement Met	SH
Math 213, Calculus 2	GE Goal 4/Major	4	Physics 340, Modern Physics	Major/WI	4
Physics 222, University Physics 2	GE Goal 3/Major	4	Math 313, Differential Equations	Major	3
Physics 232, University Physics 2B	Major	1	Math 314, Linear Algebra and Diff Eq	Major	1
SPEED 300	Major	3	Physics 370, Optics	Major/WI	4
HERS 204	Major/PDW	3	EDFD 401 Human Dev/Learning: Secon	Major	2
General Education Elective (double cour	GE Goal 5/6/7/8/9/10	3	EDFD 461 Multicultural Youth, Children	Major	2
			Chem 340, Organic Chemistry Survey	Major	4
Notes: Apply for admission to Teacher Ed. See admission requirements			Notes: EDFD 401 and 461 must be taken concurrently		
		Total SH			Total SH
		18			20
Fall Year 3			Spring Year 3		
Course	Requirement Met	SH	Course	Requirement Met	SH
Physics 350, Mechanics	Major	4	Chem 320 Environmental Chemistry**	Major	4
Physics 330, Electronics	Major/WI	4	General Education Elective (double cour	GE Goal 5/6/7/8/9/10	3
EDFD 421 Classroom Mgt: K-12 & 5-12	Major	1	Phys or Chem 312, Practical Considerati	Major	2
EDFD 441 Curriculum, Instr, & Assessm	Major	3	Phys or Chem 312, Practical Considerati	Major	2
Phys 311, Science Teaching Methods	Major	4	EDFD 459 Professional Educator	Major	2
Chem 360, Chemical Information I	Major	2	EDFD 462 Multicult Youth, Children & F	Major	1
Notes: EDFD 421 and 441 must be taken concurrently			Notes: Ed 459 and 462 must be taken concurrently; apply for student teaching		
		Total SH			Total SH
		18			14
Fall Year 4			Spring Year 4		
Course	Requirement Met	SH	Course	Requirement Met	SH
EDUC 429, Secondary Reading and Teac	Major	3	EDST 465 - Student Teaching	Major/OI	12
Physics 460, Undergraduate Research	Major/OI	2			
Chem 412 & 413 Physical Chemistry & L	Major	4			
General Education Elective	GE Goal 5/6/7/8/9/10	3			
General Education Elective	GE Goal 5/6/7/8/9/10	3			
Chem 425 Analytical Chemistry I	Major	4			
Notes: Phys 460 can be replaced with Chem 475 and Chem 430			Notes: Apply for graduation Finish licensure requirements		
		Total SH			Total SH
		19			12