

Winona State University Four Year Map General Engineering Electronics Option (GENE)					
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 II	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
CME 102, Introduction to Engineering	Major	2	Physics 221, University Physics 1	GE Goal 3/Major	4
English 219	GE Goal 5/6/7/8/9/10	3	Physics 231, University Physics 1B	Major	1
Orientation	GE	1	CME 182, Engineering Graphics and Design	Major	2
Notes: If ready, take Math 212 instead of Math 120			Notes:		
Total SH 18			Total SH 18		
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 312, Multivariable Calculus	Major/CAI	4
Physics 232, University Physics 2B	Major	1	General Education Elective	GE Goal 5/6/7/8/9/10	3
Computer Science 234, Algorithms and Problem Solving 1	Major	4	General Education Elective	GE Goal 5/6/7/8/9/10	3
CME 250, Statics	Major	3	Physics 328, Electrical Circuits and Measurements	Major	4
Notes:			Notes: Apply for admission to Engineering after completing Math 312		
Total SH 16			Total SH 18		
Fall Year 3			Spring Year 3		
Course	Requirement Met	SH	Course	Requirement Met	SH
Physics 430, Electricity and Magnetism 1	Major/CAI	3	Physics 321, Computerized Data Acquisition and Analysis	Major	2
Physics 330, Electronics	Major/WI	4	CME 285, Properties of Materials	Major/WI	4
Physics 320, Computational	Major	2	GENE elective	Major E	3
General Education Elective	GE Goal 5/6/7/8/9/10	3	General Education Elective	GE Goal 5/6/7/8/9/10	3
Math 313, Differential Equations	Major	3	CME 260, Mechanics of Materials	Major	3
Math 314, Linear Algebra and Diff Eq	Major	1			
Notes:			Notes: If you haven't yet, talk to advisor about post graduation plans		
Total SH 16			Total SH 15		
Fall Year 4			Spring Year 4		
Course	Requirement Met	SH	Course	Requirement Met	SH
Physics 332, Digital Circuits	Major	3	Physics 333, Microprocessor	Major	3
Physics 455, Engineering Design	Major/OI	2	Physics 455, Engineering Design	Major/OI	2
Stat 303, Engineering Statistics	Major	3	Physics 420, Control Theory	Major	3
General Education Elective	GE Goal 5/6/7/8/9/10	3	CME 270, Dynamics or Physics 345, Thermodynamics	Major	4
CME 491A, Engineering Seminar	Major	0	CME 491B, Engineering Seminar	Major/OI	1
CME 300, Thermo or Physics 350, Mechanical	Major	4	GENE elective	Major E	3
Notes: Can take CME 300 and then CME 270 in Spring; or Phys 350 and Phys 345 in spring			Notes: Apply for graduation		
Total SH 15			Total SH 16		

Courses

Chemistry 212, Principles of Chemistry I
 Chemistry 213, Principles of Chemistry II
 CME 102, Introduction to Engineering
 CME 182, Engineering Graphics and Design
 CME 250, Statics
 CME 260 - Mechanics of Materials
 CME 285 - Properties of Materials
 CME 491A, Engineering Seminar
 CME 491B, Engineering Seminar
 Computer Science 234, Algorithms and Problem Solving 1
 Math 212, Calculus 1
 Math 213, Calculus 2
 Math 312, Multivariable Calculus
 Math 313, Differential Equations
 Math 314, Linear Algebra and Diff Eq
 Stat 303, Engineering Statistics

Physics 221, University Physics 1
 Physics 222, University Physics 2
 Physics 231, University Physics 1B
 Physics 232, University Physics 2B
 Physics 320, Computational
 Physics 321, Computerized Data Acquisition and Analysis
 Physics 328, Electrical Circuits and Measurements 1
 Physics 330, Electronics
 Physics 332, Digital Circuits
 Physics 333, Microprocessor
 Physics 340, Modern Physics
 Physics 345, Thermal or CME 300 Thermo
 Physics 350, Mechanics or CME 270 Dynamics
 Physics 420, Control Theory
 Physics 430, Electricity and Magnetism 1
 Physics 455, Engineering Design

Updated on 12/28/2018

Key:

GE goal	General Education Goal Area
GE	A general elective that counts toward graduation but not toward a major
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 SH)
Goal 2	Critical Thinking (met when all other goals met)
Goal 3	Natural Science (7 SH)
Goal 4	Mathematics/Logical Reasoning (3 - 4 SH)
Goal 5	Social/Behavioral Sciences (3 SH)
Goal 6	Humanities and Fine Arts (3 SH)
Goal 7	Human Diversity (3 SH)
Goal 8	Global Perspective (3 SH)
Goal 9	Ethics and Civic Responsibility (3 SH)
Goal 10	People and the Environment (3 SH)

Course offered every other year

Phys 320	required
Phys 321	required
Phys 332	required
Phys 333	required
Phys 345	required
Phys 350	required
Phys 370	elective
Phys 420	required
Phys 430	required
Phys 431	elective
Phys 451	elective

Engineering Admission Requirements

2.5 GPA or higher

Completion of the following courses with a C or better

Eng 111
CMST 191
Math 212
Math 213
Math 312
Chem 212
Chem 213
Phys 221
Phys 222
CME 102
CME 182
CME 250
CS 234