



## Winona State University Four-Year Program Map

Created on 10/17/2023  
Effective Fall 2023

**Program:** General Engineering: Electronics Concentration (BS GENE)  
**Emphasis (optional):**

Fall Semester				Spring Semester			
	Course	Requirement Met	SH	Course	Requirement Met	SH	
<b>Year 1</b>	ENG 111 College Reading and Writing	GE Goal 1	4	CMST 191 Intro to Public Spkg or CMST 192 Intro to Speech Comm	GE Goal 1	3	
	CHEM 212 Principles of Chemistry I	GE Goal 3/Major	4	CHEM 213 Principles of Chemistry II	GE Goal 3/Major	4	
	MATH 212 Calculus*	GE Goal 4/Major	4	PHYS 221 University Physics I	GE Goal 3/Major	4	
	CME 102 Introduction to Engineering	Major	2	PHYS 231 University Physics IB	Major	1	
	General Education Course	GE Goal 5-10	3	CME 182 Engineering Graphics and Design	Major	2	
	OR 100 Intro to Higher Education	Recommended	1	MATH 213 Calculus 2	GE Goal 4/Major	4	
<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 one math course. At least 15 unique credits must come from Goals 5-10.</i>				<i>NOTE: ENG 111, CMST 191 or 192, CS 234, MATH 212, 213, 312, CHEM 212, 213, PHYS 221, 222, CME 102, 182, 250 are required for Admission into program. Student must earn a grade of "C" or better in all courses and earn an overall 2.50 GPA.</i>			
<b>First-Year Fall Semester Credit Hour Total</b>			<b>18</b>	<b>First-Year Spring Semester Credit Hour Total</b>			<b>18</b>
<b>Year 2</b>	MATH 312 Multivariable Calculus	Major/CAI	4	PHYS 340 Modern Physics	Major/WI	4	
	PHYS 222 University Physics II	GE Goal 3/Major	4	MATH 313 Differential Equations	Major	4	
	PHYS 232 University Physics IIB	Major	1	General Education Course	GE Goal 5-10	3	
	CS 234 Algorithms and Problem Solving	Major	4	PHYS 328 Electrical Circuits and Measurements I	Major	4	
	CME 250 Statics	Major	3				
	<i>NOTE: A minimum 2.50 GPA is required overall.</i>				<i>NOTE: Apply for admission to Engineering after completing MATH 312.</i>		
<b>Second-Year Fall Semester Credit Hour Total</b>			<b>16</b>	<b>Second-Year Spring Semester Credit Hour Total</b>			<b>15</b>
<b>Year 3</b>	PHYS 332 Digital Circuits	Major	3	PHYS 420 Control Theory	Major	3	
	PHYS 330 Electronics	Major/WI	4	CME 280 Properties of Materials	Major	3	
	STAT 303 Engineering Statistics	Major	3	CME 281 Properties of Materials Laboratory	Major	1	
	General Education Course	GE Goal 5-10	3	PHYS 333 Microprocessor Electronics	Major	3	
	General Education Course	GE Goal 5-10	3	CME 260 Mechanics of Materials	Major	3	
				GENE Elective	Major Elective	3	
	<i>NOTE:</i>				<i>NOTE: If you haven't yet, talk to advisor about post-graduation plans.</i>		
<b>Third-Year Fall Semester Credit Hour Total</b>			<b>16</b>	<b>Third-Year Spring Semester Credit Hour Total</b>			<b>16</b>
<b>Year 4</b>	PHYS 430 Electromagnetic Theory I	Major/CAI	3	PHYS 321 Computerized Data Acquisition and Analysis	Major	2	
	PHYS 455 Engineering Design Project	Major/OI	2	PHYS 455 Engineering Design Project	Major/OI	2	
	PHYS 320 Computational Physics	Major	2	General Education Course	GE Goal 5-10	3	
	General Education Course	GE Goal 5-10	3	CME 270 Dynamics of PHYS 345 Thermodynamics & Statistical Physics	Major	4	
	CME 491A Engineering Seminar	Major	0	CME 491B Engineering Seminar	Major/OI	1	
	CME 300 Thermodynamics or PHYS 350 Mechanics	Major	4	GENE Elective	Major Elective	3	
	<i>NOTE: Can take CME 300 and then CME 270 in Spring; or PHYS 350 and PHYS 345 in Spring. Take Fundamental Engineering Exam before graduation.</i>				<i>NOTE: Apply for graduation.</i>		
<b>Fourth-Year Fall Semester Credit Hour Total</b>			<b>14</b>	<b>Fourth-Year Spring Semester Credit Hour Total</b>			<b>15</b>

Total Credit Hours (SH): 128

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	16 credits
Goal 4	Mathematics	8 credits
Goal 5	History, Social/Behavioral Sciences	3 credits
Goal 6	Humanities and Fine Arts	3 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 128 total credits (semester hours) required for Bachelors' Degree in Engineering
- Minimum of 46 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 2.5

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.