



Winona State University  
Four-Year Program Map

Created on 11/13/2017  
Effective Fall 2017

Program: Composite Materials Engineering (BS CME)  
Emphasis (optional):

	Fall Semester			Spring Semester		
	Course	Requirement Met	SH	Course	Requirement Met	SH
<b>Year 1</b>	CME 102 Introduction to Engineering	Major	2	CME 182 Engineering Graphics & Design	Major	2
	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 I	GE Goal 4/Major	4	MATH 213 Calculus II	GE Goal 4/Major	4
	ENG 111 College Reading & Writing or CMST 191 Intro to Public Sp	GE Goal 1	3-4	PHYS 221 University Physics I	GE Goal 3/Major	4
	General Education Courses	GE Goals 5-10	3	CMST 191 Introduction to Public Speaking or ENG 111 College Rdg/Wrtg	GE Goal 1	3-4
	OR 100 Orientation	Recommended	1			
	<i>NOTE: GE Goals 1-4 (31 SH) fulfilled by required courses; GE Goals 5-10 (15 SH) fulfilled by taking a minimum of 5 approved courses. At least one course must be dually listed. Taking OR 100 will put students at 129 earned credits.</i>			<i>NOTE:</i>		
<b>First-Year Fall Semester Credit Hour Total</b>			<b>16-17</b>	<b>First-Year Spring Semester Credit Hour Total</b>		
				<b>17-18</b>		
<b>Year 2</b>	CME 210 Computer Application in Engineering	Major	3	CME 260 Mechanics of Materials	Major	3
	CME 250 Statics	Major	3	CME 270 Dynamics	Major	3
	MATH 312 Multivariable Calculus	Major/CAI	4	CME 285 Properties of Materials and Laboratory	Major/WI	4
	PHYS 222 University Physics II	GE Goal 3/Major	4	CHEM 340 Organic Chemistry Survey	Major	4
	General Education Courses	GE Goals 5-10	3	MATH 313 Differential Equations	Major/CAI	3
				MATH 314 Linear Algebra for Differential Equations	Major	1
	<i>NOTE: Students apply to CME Program after completing required courses.</i>			<i>NOTE:</i>		
<b>Second-Year Fall Semester Credit Hour Total</b>			<b>17</b>	<b>Second-Year Spring Semester Credit Hour Total</b>		
				<b>18</b>		
<b>Year 3</b>	CME 300 Thermodynamics	Major	3	CME 370 Heat & Mass Transfer	Major	3
	CME 350 Fluid Mechanics	Major	3	CME 390 Composites Manufacturing	Major	3
	CME 360 Introduction to Composite Materials	Major	3	CME 394 Polymer Science & Characterization	Major/WI	3
	CHEM 410 Polymer Chemistry	Major	3	PHYS 302 Electrical Circuits	Major	3
	STAT 303 Introduction to Engineering Statistics	Major	3	Technical Elective*	Major Elective	3
	<i>NOTE:</i>			<i>NOTE: *A total of 9 credits of Technical Electives are required; 3 credits must be non-Engineering courses.</i>		
<b>Third-Year Fall Semester Credit Hour Total</b>			<b>15</b>	<b>Third-Year Spring Semester Credit Hour Total</b>		
				<b>15</b>		
<b>Year 4</b>	CME 401 Engineering Economics	Major	1	CME 451 Transport Phenomena Laboratory	Major/WI	1
	CME 450 Mechanics of Composites	Major	3	CME 480 Design Project II	Major	3
	CME 452 Mechanical Characterization Laboratory	Major/WI	2	CME 491B Engineering Seminar	Major/OI	1
	CME 475 Design Project I	Major/OI	3	Technical Electives*	Major Elective	6
	CME 491A Engineering Seminar	Major/OI	0	General Education Courses	GE Goals 5-10	3
	General Education Courses	GE Goals 5-10	6			
	<i>NOTE:</i>			<i>NOTE: *A total of 9 credits of Technical Electives are required; 3 credits must be non-Engineering courses. In addition to the successful completion of the required courses, the student must also take the Fundamentals of Engineering (FE) exam prior to graduation.</i>		
<b>Fourth-Year Fall Semester Credit Hour Total</b>			<b>15</b>	<b>Fourth-Year Spring Semester Credit Hour Total</b>		
				<b>14</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 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.