

The first 3 years on this plan is for all emphasis areas. After secondary admission, consult specific emphasis area plan.

1st Year					
Fall		Winter		Spring/Summer	
MTH 124: Precalculus	5	*MTH 201: Calculus 1	4		
*WRT 150: Strategies in Writing or WRT 120 and WRT 130	4	*CHM 115: Chemistry 1	4		
*EGR 100: Intro to Engineering	1	*EGR 108: Applied Programming 2	2		
*EGR 111: Intro to Engineering Graphics	1	*EGR 113: Intro to CAD/CAM	1		
*EGR 104: Applied Programming 1	2	General Education	3		
Total	13	Total	14		
2nd Year					
Fall		Winter		Spring/Summer	
*MTH 202: Calculus 2	4	*MTH 203: Calculus 3	4		
*EGR 185: First-Year EGR Design	2	*PHY 230: Physics 1	5		
General Education	3	*STA 220: Statistical Modeling for EGR	2		
General Education	3	*EGR 220: EGR Measure & Data	1		
		General Education	3		
Total	12	Total	15		
3rd Year					
Fall		Winter		Spring/Summer	
*PHY 234 or 231: Physics 2	4-5	*MTH 302: Linear Algebra/Differential EQ	4	EGR 290: Engineering Co-Op 1	3
*EGR 226: Microcontroller Program	3	*EGR 214: Circuit Analysis 1	3		
*EGR 227: Microcontroller Program Lab	1	*EGR 215: Circuit Analysis 1 Lab	1		
*EGR 209: Mechanics & Machines	4	*EGR 309: Machine Design 1	3		
*EGR 289: EGR Professionalism	1	*EGR 310: Machine Design 1 Lab	1		
		*EGR 250: Materials Science & EGR	3		
		*EGR 251: Materials Science & EGR Lab	1		
Total	13-14	Total	16	Total	3

GENERAL EMPHASIS:

4 th Year ~ Admission Required					
Fall		Winter		Spring/Summer	
EGR 301: Analytical Tools for PDM	4	EGR 390: Engineering Co-Op 2	3	EGR 362: Thermal & Fluid Sys	4
EGR 345: Dynamic System Modeling	4			EGR 440: Intro to Production	3
EGR 367: Mfg Processes	3			PDM Elective	3-4
EGR 368: Mfg Processes Lab	1			General Education	3
ECO 210 or 211: Economics	3				
Total	15	Total	3	Total	13-14
5 th Year ~ Admission Required					
Fall		Winter		Spring/Summer	
EGR 490: Engineering Co-Op 3	3	EGR 485: Senior EGR Project 1	1	EGR 486: Senior EGR Project 2	2
		EGR 401: Advanced Product Design	4	PDM Elective	3-4
		EGR 450: Mfg Control Systems	4	General Education	3
		PDM Elective	3-4	General Education	3
				General Education	3
Total	3	Total	12-13	Total	14-15

- This is a suggested curriculum guide that might not be applicable to every student
- Foundation courses are required for secondary admission and are designated by an asterisk (*) on this guide
- Student must have a **minimum of 120 credits** to graduate, with **58 of the 120 credits** being from a senior level institution and the **final 30 of the 120 credits** completed at GVSU

The plan on page 1 is for the PDM-General Emphasis area. There are 3 other emphasis areas.
Below are the plans for post-secondary admission for each emphasis area.

DESIGN EMPHASIS:

3rd Year ~ Admission Required					
Fall		Winter		Spring/Summer	
EGR 301: Analytical Tools for PDM	3	EGR 390: Engineering Co-Op 2	3	EGR 362: Thermal & Fluid Sys	4
EGR 345: Dynamic System Modeling	4	General Education	3	EGR 329: Intro to FEA	3
EGR 367: Mfg Processes	3			EGR 405: Mat. Failure Analysis	3
EGR 368: Mfg Processes Lab	1			ECO 210 or 211: Economics	3
General Education	3			General Education	3
Total	15	Total	6	Total	16
4th Year ~ Admission Required					
Fall		Winter		Spring/Summer	
EGR 490: Engineering Co-Op 3	3	EGR 485: Senior Project I	1	EGR 486: Senior Project 2	2
General Education	3	EGR 401: Advanced Product Design	4	EGR 440: Intro to Production	3
		PDM Elective	3-4	General Education	3
		PDM Elective	3-4	General Education	3
		General Education	3	General Education	3
Total	6	Total	14-16	Total	14

MANUFACTURING SYSTEMS EMPHASIS:

3rd Year ~ Admission Required					
Fall		Winter		Spring/Summer	
EGR 301: Analytical Tools for PDM	3	EGR 390: Engineering Co-Op 2	3	EGR 362: Thermal & Fluid Sys	4
EGR 345: Dynamic System Modeling	4	General Education	3	EGR 440: Intro to Production	3
EGR 367: Mfg Processes	3			EGR 441: EGR Economics	4
EGR 368: Mfg Processes Lab	1			General Education	3
ECO 210 or 211: Economics	3			General Education	3
Total	15	Total	6	Total	17
4th Year ~ Admission Required					
Fall		Winter		Spring/Summer	
EGR 490: Engineering Co-Op 3	3	EGR 485: Senior Project 1	1	EGR 486: Senior Project 2	2
General Education	3	EGR 404: Polymer Science	4	PDM Elective	3-4
		EGR 450: Mfg Control Systems	4	PDM Elective	3-4
		General Education	3	General Education	3
		General Education	3	General Education	3
Total	6	Total	15	Total	14-16

ROBOTICS EMPHASIS:

3rd Year ~ Admission Required					
Fall		Winter		Spring/Summer	
EGR 301: Analytical Tools for PDM	3	EGR 390: Engineering Co-Op 2	3	EGR 362: Thermal & Fluid Sys	4
EGR 345: Dynamic System Modeling	4	General Education	3	EGR 440: Intro to Production	3
EGR 367: Mfg Processes	3			EGR 445: Robotic Systems EGR	4
EGR 368: Mfg Processes Lab	1			ECO 210 or 211: Economics	3
General Education	3			General Education	3
Total	15	Total	6	Total	17
4th Year ~ Admission Required					
Fall		Winter		Spring/Summer	
EGR 490: Engineering Co-Op 3	3	EGR 485: Senior Project 1	1	EGR 486: Senior Project 2	2
General Education	3	EGR 450: Mfg Control Systems	4	EGR 409: Machine Design 2	4
		PDM Elective	3-4	PDM Elective	3-4
		General Education	3	General Education	3
		General Education	3	General Education	3
Total	6	Total	14-15	Total	15-16

PDM Foundation Requirements			
MTH 201	MTH 202	MTH 203	MTH 302
WRT 150 or WRT 130	CHM 115	PHY 230	PHY 234 or PHY 231
EGR 100	EGR 111	EGR 112 (or EGR 104+ EGR 108)	EGR 113
EGR 185	EGR 289	EGR 220 + STA 220	EGR 214+215
EGR 226+227	EGR 209	EGR 309 + 310	EGR 250+251

General Education Requirements	
WRT 150: Strategies in Writing (grade of "C" or higher required) or WRT 120 and WRT 130 (grade of "C" or higher required in both)	Life Sciences (consider BIO 105)
Physical Sciences (CHM 115)	Philosophy and Literature
Arts	Mathematical Sciences (MTH 201)
2 Social Behavioral Sciences (one must be ECO 210 or 211)	Global Perspectives
Historical Analysis (consider HSC 202)	U.S. Diversity
2 Issues Courses (prerequisite: must have 55+ credits)	2 Supplemental Writing Skills Courses (prerequisite: WRT 130 or WRT 150)

Secondary Admission Requirements:

Detailed application and admission requirements available at <https://www.gvsu.edu/engineering/secondary-admission-to-engineering-majors-44.htm>

- ✓ A GPA of 2.7 or above in Engineering Foundation courses. Foundation courses are designated by an asterisk (*) on this guide.
- ✓ Completion of each course in the Engineering Foundation with a grade of C (2.0) or above, with no more than one repeat.
- ✓ Completion of preparation for placement in the cooperative engineering education course, EGR 289.

Major Declaration Steps:

- ✓ An emphasis area is required for the Product Design and Manufacturing Engineering major. A list of major elective options is listed in the GVSU Academic Catalog.
- ✓ To declare this emphasis, login to MyBanner, select "Student Records" and then "Change Major."
 - Click on "Change Major 1" and select Product Design and Manufacturing - General Emphasis.
 - Click "Submit" and then "Change to New Program."

Major Notes:

- 1) In the Manufacturing Systems emphasis, EGR 450 and a PDM elective from the 4th year Summer can be taken interchangeably.
- 2) In the Robotics emphasis, EGR 409 and EGR 445 can be taken interchangeably.
- 3) It is recommended that anyone on a 5-year EGR plan complete the EGR 104+108 stretch option in place of EGR 112. Please speak with an advisor if you have questions about which option is best for you.
- 4) Consider taking a course that fulfills both the U.S. Diversity category and one non-ECO Social and Behavioral Science course.
- 5) Consider taking a course that fulfills both the Global Perspectives category and one Issues course.
- 6) An ethics course is required in the engineering program. It is recommended to take **ONE** of the following:
 - a. EGR 302 (Engineering Decision-Making in Society), BIO 328, BIO 338, COM 438, MGT 340, MGT 438, MKT 375, PHI 325 or PLS 338 in the Issues category
 - b. PHI 102 in the Philosophy and Literature category
 - c. For Honors College students, the ethics requirement is fulfilled by completion of the Honors Curriculum
- 7) ECO 210 or 211 is required for the engineering major AND fulfills one Social and Behavioral Sciences course.
- 8) Two Supplemental Writing Skills (SWS) courses are required for graduation. These can be fulfilled via other general education categories. **For example, EGR 302 will fulfill ONE SWS requirement, one Issues requirement AND the engineering ethics requirement.**

Recommendations:

It is strongly encouraged that students do not begin or break curriculum thread by taking courses at other institutions.

For example: Taking MTH 201 equivalent elsewhere, then return to Grand Valley and continuing in the math thread with MTH 202.