SEYMOUR AND ESTHER PADNOS COLLEGE OF ENGINEERING
GRAND VALLEY STATE UNIVERSITY

Bachelor of Science in Engineering (B.S.E.)

Biomedical Engineering:
Product Design & Manufacturing Emphasis

Honors College: MTH 201 Start, 5 Year Plan

Secondary Admission Required

2025 – 2026 Catalog Year

1st Year

Fall		Winter		Spring/Summer	
*MTH 201: Calculus 1	4	*MTH 202: Calculus 2	4		
*EGR 100: Intro to EGR	1	*EGR 113: Intro to CAD/CAM	1		
*EGR 111: Intro to EGR Graphics	1	*EGR 185: First-Year EGR Design	2		
*EGR 112: Applied Programing for EGR	2	HNR 153: Interdisciplinary Sequence 3	3		
HNR 151: Interdisciplinary Sequence 1	3	HNR 154: Interdisciplinary Sequence 4	3		
HNR 152: Interdisciplinary Sequence 2	3				
Total	**14**	**Total**	**13**		

2nd Year

Fall		Winter		Spring/Summer	
*MTH 203: Calculus 3	4	*MTH 302: Linear Algebra/Differential EQ	4		
*CHM 125 + 126: Chemistry 1	4	*PHY 230: Physics 1	5		
*STA 220: Stat Modeling for Engineering	2	BMS 202: Anatomy and Physiology	4		
*EGR 220: EGR Measure & Data	1				
HNR 201: Live. Learn. Lead.	3				
Total	**14**	**Total**	**13**		

3rd Year

Fall		Winter		Spring/Summer	
*PHY 231: Physics 2	5	*EGR 309: Machine Design 1	3	EGR 290: Engineering Co-Op 1	3
*EGR 209: Mechanics and Machines	3	*EGR 310: Machine Design 1 Lab	1		
*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 289: EGR Professionalism	3	*EGR 250: Materials Science & EGR	3		
		*EGR 251: Materials Science & EGR Lab	1		
Total	**15**	**Total**	**12**	**Total**	**3**

4th Year ~ Admission Required

Fall		Winter		Spring/Summer	
EGR 453: Biomedical Materials	3	EGR 390: Engineering Co-Op 2	3	EGR 362: Thermal & Fluid Sys	4
EGR 345: Dynamic System Model	4	EGR 403: Medical Device Design	4	CHM 234: Introductory Biochemistry	4
EGR 367: Manufacturing Processes	3			EGR 435: Math Modeling Phy Sys	3
EGR 368: Manufacturing Processes Lab	1			HNR 350: Integrative Seminar	3
Supplemental Writing Skills	3				
Total	**14**	**Total**	**7**	**Total**	**14**

5th 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: Medical Device Design	3	ECO 210 or 211: Economics	3
		BME Elective	3-4		
		BME Elective	3-4		
Total	**3**	**Total**	**10-12**	**Total**	**5**

- 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

Padnos College of Engineering Undergraduate Advising Center
Innovation Design Center, Suite 212
(616) 331-6025 or online at www.gvsu.edu/pce/advising

BME - PDM Foundation Course Requirements			
WRT 150 (or WRT 130)	MTH 201	MTH 202	MTH 203
MTH 302	PHY 230	PHY 231	CHM 125 +126
STA 220+EGR 220	EGR 100	EGR 111	EGR 112 (or EGR 104+108)
EGR 113	EGR 185	EGR 289	EGR 226+227
EGR 209	EGR 309+310	EGR 250+251	EGR 214+215

Honors Requirements	
HNR 151	HNR 152
HNR 153	HNR 154
HNR 300 (fulfilled by EGR 290)	HNR 201
HNR 251 (fulfilled by EGR 100 + EGR 185)	HNR 350
HNR 401/499 (fulfilled by EGR 485 + EGR 486)	

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:

1) An emphasis area is required for the Biomedical Engineering major. A list of major elective options is listed in the GVSU Academic Catalog.
2) To declare this emphasis, login to MyBanner, select "Student Records" and then "Change Major."
3) Click on "Change Major 1" and select Biomedical Engineering – Product Design and Manufacturing.
4) Click "Submit" and then "Change to New Program."
5) Other emphasis areas within Biomedical Engineering include Electrical and Mechanical.

Honors:

The Frederik Meijer Honors College and the School of Engineering have approved the following substitutions for the honors curriculum:

1) Together, EGR 100 and EGR 185 fulfill the HNR 251 requirement.
2) EGR 290 fulfills the HNR 300 requirement.
3) EGR 485 fulfills the HNR 401 requirement.
4) EGR 486 fulfills the HNR 499 requirement.
5) The completion of the honors curriculum will fulfill the engineering ethics requirement.
6) All GVSU students must earn credit for two Supplemental Writing Skills (SWS) courses. Honors students can earn credit for one SWS course by completing HNR 154 (the winter semester of a first-year sequence) with a grade of C or better. They must earn their second SWS course credit outside of the Honors requirements.

Recommendations:

1. It is strongly encouraged that students do not begin or break curriculum thread by taking courses at other institutions.
    a. *For example*: Taking MTH 201 equivalent elsewhere, then return to Grand Valley and continuing in the math thread with MTH 202.
2. Students may take MTH 204 and MTH 304 in place of the MTH 302 requirement.