

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

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 115: 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		
ECO 210 or 211: Economics	3				
Total	14	Total	16		
3rd Year					
Fall		Winter		Spring/Summer	
*PHY 234 or 231 Physics 2	4-5	*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	4		
*EGR 289: EGR Professionalism	3	*EGR 250: Materials Science & EGR	3		
		*EGR 251: Materials Science & EGR Lab	1		
Total 14-15		Total	15	Total	3
4 th 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			CHM 230: Intro Org & Biochem	4
EGR 367: Manufacturing Processes	3			HNR 350: Integrative Seminar	3
EGR 368: Manufacturing Processes Lab	1			EGR 403: Medical Device Design	3
Supplemental Writing Skills	3				
Total	14	Total	3	Total	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
Supplemental Writing Skills		EGR 401: Medical Device Design	3	BME Elective	3-4
		EGR 435: Math Modeling Phy. Systems	3		
		BME Elective	3-4		
Total	3	Total	10-11	Total	5-6

- 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

BME - PDM Foundation Course Requirements			
WRT 150 (or WRT 130)	MTH 201	MTH 202	MTH 203
MTH 302	PHY 230	PHY 231 or PHY 234	CHM 115
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, EGR 390, and EGR 490)	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, EGR 390, and EGR 490 fulfill the HNR 300 requirement. Students are encouraged to plan ahead and submit a [proposal form](#) for the HNR 300 substitution.
- 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:

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.