

Bachelor of Science in Engineering (B.S.E.)  
**Biomedical Engineering:**  
**Product Design & Manufacturing Emphasis**  
**Honors College: MTH 201 Start, 4 Year Plan**  
 Secondary Admission Required

1st Year					
<b>Fall</b>		<b>Winter</b>		<b>Spring/Summer</b>	
*MTH 201: Calculus 1	4	*MTH 202: Calculus 2	4	*EGR 185: First-Year EGR Design	2
*EGR 100: Intro to EGR	1	*PHY 230: Physics 1	5	*CHM 115: Chemistry 1	4
*EGR 111: Intro to EGR Graphics	1	*EGR 113: Intro to CAD/CAM	1	*MTH 203: Calculus 3	4
*EGR 112: Appl Program 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				
<b>Total</b>	<b>14</b>	<b>Total</b>	<b>16</b>	<b>Total</b>	<b>10</b>
2nd Year					
<b>Fall</b>		<b>Winter</b>		<b>Spring/Summer</b>	
*PHY 234 or 231: Physics 2	4-5	*MTH 302: Linear Algebra/Diff Eq	4	EGR 290: Engineering Co-op 1	3
*STA 220: Stat Modeling for EGR	2	*EGR 214: Circuit Analysis 1	3		
*EGR 220: EGR Measurement and Data	1	*EGR 215: Circuit Analysis 1 Lab	1		
*EGR 209: Mechanics and Machines	4	*EGR 309: Machine Design 1	3		
*EGR 226: Microcontroller Program	3	*EGR 310: Machine Design 1 Lab	1		
*EGR 227: Microcontroller Program Lab	1	*EGR 250: Materials Sci & EGR	3		
*EGR 289: EGR Professionalism	1	*EGR 251: Materials Sci & EGR Lab	1		
<b>Total</b>	<b>16-17</b>	<b>Total</b>	<b>16</b>	<b>Total</b>	<b>3</b>
3rd Year ~ Admission Required					
<b>Fall</b>		<b>Winter</b>		<b>Spring/Summer</b>	
EGR 345: Dynamic System Model	4	EGR 390: Engineering Co-op 2	3	EGR 362: Thermal & Fluid Sys	4
EGR 367: Manufacturing Processes	3			CHM 230: Intro Org & Biochem	4
EGR 368: Manufacturing Processes Lab	1			BMS 202: Anatomy & Phys	4
EGR 453: Biomedical Materials	3			EGR 403: Medical Device Design	3
HNR 201: Live. Learn. Lead	3				
<b>Total</b>	<b>14</b>	<b>Total</b>	<b>3</b>	<b>Total</b>	<b>15</b>
4th Year ~ Admission Required					
<b>Fall</b>		<b>Winter</b>		<b>Spring/Summer</b>	
EGR 490: Engineering Co-op 3	3	EGR 485: Senior EGR Project 1	1	EGR 486: Senior EGR Project 2	2
Supplemental Writing Skills	3	EGR 401: Advanced Product Design	3	BME Elective	3-4
		EGR 435: Math. Model Phys. Systems	3	HNR 350: Integrative Seminar	3
		BME Elective	3-4		
		ECO 210 or 211: Economics	3		
<b>Total</b>	<b>6</b>	<b>Total</b>	<b>13-14</b>	<b>Total</b>	<b>8-9</b>

- 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 Emphasis.
- 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.