

**Bachelor of Science in Engineering (B.S.E.)  
Biomedical Engineering: Mechanical Emphasis  
Honors College: MTH 201 Start, 5 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 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 Programming 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>13</b>
2nd Year			
<b>Fall</b>		<b>Winter</b>	<b>Spring/Summer</b>
*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	*EGR 226: Microcontroller Program	3
*EGR 220: EGR Measure & Data	1	*EGR 227: Microcontroller Program Lab	1
ECO 210 or 211: Economics	3		
<b>Total</b>	<b>14</b>	<b>Total</b>	<b>13</b>
3rd Year			
<b>Fall</b>		<b>Winter</b>	<b>Spring/Summer</b>
*PHY 234 or 231 Physics 2	4-5	*EGR 250: Materials Science & EGR	3
*EGR 214: Circuit Analysis 1	3	*EGR 251: Materials Science & EGR Lab	1
*EGR 215: Circuit Analysis 1 Lab	1	*EGR 312: Dynamics	3
*EGR 209: Mechanics and Machines	4	BMS 202: Anatomy and Physiology	4
*EGR 289: EGR Professionalism	3	HNR 201: Live. Learn. Lead.	3
<b>Total</b>	<b>15-16</b>	<b>Total</b>	<b>14</b>
			<b>EGR 290: Engineering Co-Op 1</b> 3
			<b>Total</b> 3
4 <sup>th</sup> Year ~ Admission Required			
<b>Fall</b>		<b>Winter</b>	<b>Spring/Summer</b>
EGR 309: Machine Design 1	3	EGR 390: Engineering Co-Op 2	3
EGR 310: Machine Design 1 Lab	1	EGR 403: Medical Device Design	3
EGR 346: Mechatronics & Controls	4		EGR 362: Thermal & Fluid Sys 4
EGR 453: Biomedical Materials	3		CHM 230: Intro Organic & Biochemistry 4
			HNR 350: Integrative Seminar 3
<b>Total</b>	<b>11</b>	<b>Total</b>	<b>6</b>
			<b>Total</b> 11
5 <sup>th</sup> 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 435: Math Modeling Phy. Systems	3
		EGR 447: EGR Mech Human Motion	3
		BME Elective	3-4
<b>Total</b>	<b>3</b>	<b>Total</b>	<b>13-14</b>
			<b>EGR 486: Senior EGR Project 2</b> 2
			<b>BME Elective</b> 3-4
			<b>Total</b> 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 - ME 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 250+251	EGR 312	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 – Mechanical Emphasis.
- 4) Click "Submit" and then "Change to New Program."
- 5) Other emphasis areas within Biomedical Engineering include Electrical and Product Design and Manufacturing.

### 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:

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.