

**Interdisciplinary Engineering:  
Mechatronics Engineering 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 108: Appl Program for EGR II	2
*EGR 104: Appl Program for EGR I	2	*HNR 153: Interdisciplinary Sequence 3	3
HNR 151: Interdisciplinary Sequence I	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 I	5
*STA 220: Statistical Modeling for EGR	2	*EGR 185: First-Year EGR Design	2
*EGR 220: EGR Measure & Data	1	ECO 210 or 211: Economics	3
HNR 201: Live. Learn. Lead	3		
<b>Total</b>	<b>14</b>	<b>Total</b>	<b>14</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 209: Mechanics & Machines	4	*EGR 251: Materials Science & EGR Lab	1
*EGR 214: Circuit Analysis 1	3	IE Track (see chart)	3-4
*EGR 215: Circuit Analysis 1 Lab	1	IE Track (see chart)	3-4
*EGR 289: EGR Professionalism	1		
<b>Total</b>	<b>13-14</b>	<b>Total</b>	<b>10-12</b>
			<b>Total</b> 6
4th Year ~ Admission Required			
<b>Fall</b>		<b>Winter</b>	<b>Spring/Summer</b>
EGR 314: Circuit Analysis 2	4	EGR 390: Engineering Co-Op 2	3
EGR 315: Electronic Circuits 1	4	EGR 312: Dynamics (Sensor Track)	3
IE Track (see chart)	4		
<b>Total</b>	<b>12</b>	<b>Total</b>	<b>6</b>
			<b>Total</b> 12
5th 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 352: Kin & Dynamics (Mech. Track)	4	IE Track (see chart)	4
		IE Track (see chart)	3-4
		HNR 350: Integrative Seminar	3
		Supplemental Writing Skills	3
<b>Total</b>	<b>7</b>	<b>Total</b>	<b>14-15</b>
			<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

√	IE-Mechatronics Foundation Requirements	√	Honors Requirements
	MTH 201		HNR 151
	MTH 202		HNR 152
	MTH 203		HNR 153
	MTH 302		HNR 154
	CHM 115		HNR 200 (fulfilled by EGR 290, EGR 390, and EGR 490)
	PHY 230		HNR 201
	PHY 231 or 234		HNR 251 (fulfilled by EGR 100 + EGR 185)
	WRT 150		HNR 350
	EGR 100		HNR 401/499 (fulfilled by EGR 485 + EGR 486)
	EGR 111	<b>Honors Notes:</b> The Frederik Meijer Honors College and the School of Engineering have approved the following substitutions for the honors curriculum: <ol style="list-style-type: none"> <li>Together, EGR 100 and EGR 185 fulfill the HNR 251 requirement.</li> <li>EGR 290, EGR 390, and EGR 490 fulfill the HNR 200 requirement. Students are encouraged to plan ahead and submit a <a href="#">proposal form</a> for the HNR 200 substitution.</li> <li>EGR 485 fulfills the HNR 401 requirement.</li> <li>EGR 486 fulfills the HNR 499 requirement.</li> <li>The completion of the honors curriculum will fulfill the engineering ethics requirement.</li> </ol> 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 153 and HNR 154 (the winter semester of a first-year sequence) with an averaged grade of B or better. They must earn their second SWS course credit outside of the Honors requirements.	
	EGR 112		
	EGR 113		
	EGR 185		
	EGR 289		
	EGR 220+STA 220		
	EGR 214+215		
	EGR 226+227		
	EGR 209		
	EGR 309+310		
	EGR 250+251		

### 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 Interdisciplinary Engineering major. Emphasis areas include: Data Science, Design & Innovation, Engineering Management, Environmental Engineering, Mechatronics and Renewable Energy.

- 1) To declare this emphasis, login to MyBanner, select "Student Records" and then "Change Major."
- 2) Click on "Change Major 1" and select **Interdisciplinary Engineering – Mechatronics Emphasis**.
- 3) Click "Submit" and then "Change to New Program."
- 4) Students are required to complete one IE Track Elective (see below). Please plan ahead! Course descriptions are listed in the GVSU Academic Catalog.

### 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.

<b>Mechanical Track</b>	
EGR 226/227	6 <sup>th</sup> Semester Winter (foundation course)
EGR 309/310	6 <sup>th</sup> Semester Winter
EGR 312	Spring/Summer Co-op
EGR 346	7 <sup>th</sup> Semester Fall
EGR 409	8 <sup>th</sup> Semester Spring/Summer
EGR 352	Fall Co-op
EGR 450	9 <sup>th</sup> Semester Winter
<b>Mechanical Track Electives</b>	
EGR 224	Introduction to Digital System Design
EGR 436	Embedded Systems Interface
EGR 424	Design of Microcontroller Applications
EGR 350	Vibrations

<b>Sensor- Controls Track</b>	
EGR 224	6 <sup>th</sup> Semester Winter
EGR 223	6 <sup>th</sup> Semester Winter
EGR 226/227	Spring/Summer Co-op (foundation course)
EGR 326	7 <sup>th</sup> Semester Fall
EGR 312	Winter Co-op
EGR 309/310	8 <sup>th</sup> Semester Spring/Summer
<b>Sensor-Controls Track Electives</b>	
EGR 436	9 <sup>th</sup> Semester Winter
EGR 409	Machine Design 2
EGR 450	Manufacturing Controls
EGR 352	Kinematics and Dynamics of Machinery
EGR 424	Design of Microcontroller Applications