Grand Valley State University
Seymour and Esther Padnos College of Engineering and Computing

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

Interdisciplinary Engineering: Mechatronics Engineering Emphasis

Honors College: MTH 201 Start, 4 Year Plan

Secondary Admission Required

2022 – 2023 Catalog Year

1st Year

Fall		Winter		Spring/Summer	
*MTH 201: Calculus 1	4	*MTH 202: Calculus 2	4	*MTH 203: Calculus 3	4
*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	*EGR 185: First-Year EGR Design	2
*EGR 112: Appl Program for EGR	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				
Total	**14**	**Total**	**16**	**Total**	**10**

2nd Year

Fall		Winter		Spring/Summer	
*PHY 234 or 231: Physics 2	4-5	*MTH 302: Linear Algebra/Differential EQ	4	EGR 290: Engineering Co-Op I	3
*STA 220: Stat Modeling for EGR	2	*EGR 250: Materials Science & EGR	3	IE Track (see chart)	3
*EGR 220: EGR Measure and Data	1	*EGR 251: Materials Science & EGR Lab	1		
*EGR 209: Mechanics & Machines	4	IE Track (see chart)	3-4		
*EGR 214: Circuit Analysis 1	3	IE Track (see chart)	3-4		
*EGR 215: Circuit Analysis 1 Lab	1				
*EGR 289: EGR Professionalism	1				
Total	**16-17**	**Total**	**14-16**	**Total**	**6**

3rd Year ~ Admission Required

Fall		Winter		Spring/Summer	
EGR 314: Circuit Analysis 2	4	EGR 390: Engineering Co-Op 2	3	EGR 445: Robotics Systems EGR	4
EGR 315: Electronic Circuits 1	4	EGR 312: Dynamics (Sensor Track)	3	EGR 455: Automatic Control	4
IE Track (see chart)	4			IE Track (see chart)	4
HNR 201: Live. Learn. Lead.	3			ECO 210 or 211: Economics	3
Total	**15**	**Total**	**6**	**Total**	**15**

4th 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 352: Kin & Dynamics (Mech. Track)	4	IE Track (see chart)	4	IE Track (see chart)	3-4
		IE Track (see chart)	3-4	HNR 350: Integrative Seminar	3
		Supplemental Writing Skills	3		
Total	**7**	**Total**	**11-12**	**Total**	**14-15**

- 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 and Computing ~ Student Services Office
B-3-241 Mackinac Hall and 101 Eberhard Center
(616) 331-6025 or online at www.gvsu.edu/pcec/advising

√	IE-Mechatronics Foundation Requirements
	MTH 201
	MTH 202
	MTH 203
	MTH 302
	CHM 115
	PHY 230
	PHY 231 or 234
	WRT 150
	EGR 100
	EGR 111
	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

√	Honors Requirements
	HNR 151
	HNR 152
	HNR 153
	HNR 154
	HNR 200 (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)

Honors Notes:

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 200 requirement. Students are encouraged to plan ahead and submit a proposal form for the HNR 200 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 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.

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.

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

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