SEYMOUR AND ESTHER PADNOS COLLEGE OF ENGINEERING
GRAND VALLEY STATE UNIVERSITY

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

Biomedical Engineering: Electrical Emphasis

2025 – 2026 Catalog Year

MTH 201 Start, 4 Year Plan

Secondary Admission Required

1st Year

Fall		Winter		Spring/Summer	
*MTH 201: Calculus 1	4	*MTH 202: Calculus 2	4		
*CHM 125 + 126: Chemistry 1	4	*PHY 230: Physics 1	5		
*WRT 150: Strategies in Writing **or** WRT 120 and WRT 130	4	*EGR 113: Intro to CAD/CAM	1		
		*EGR 185: First-Year Engineering Design	2		
*EGR 100: Intro to EGR	1	*EGR 220: EGR Measure & Data	1		
*EGR 111: Intro to EGR Graphics	1	*STA 220: Statistical Modeling for EGR	2		
*EGR 112: Applied Programing for EGR	2				
Total	**16**	**Total**	**15**		

2nd Year

Fall		Winter		Spring/Summer	
*MTH 203: Calculus 3	4	*MTH 302: Linear Algebra/Diff EQ	4	EGR 290: EGR Co-Op 1	3
*PHY 231: Physics 2	5	*EGR 223: Probability and Signal Analysis	3	General Education	3
*EGR 224: Intro to Digital Systems	3	*EGR 257: Electronic Materials and Devices	4		
*EGR 226: Microcontroller Programming	3	*EGR 214: Circuit Analysis 1	3		
*EGR 227: Microcontroller Program. Lab	1	*EGR 215: Circuit Analysis 1 Lab	1		
*EGR 289: Engineering Professionalism	1				
Total	**17**	**Total**	**15**	**Total**	**6**

3rd Year ~ Admission Required

Fall		Winter		Spring/Summer	
EGR 314: Circuit Analysis 2	4	EGR 390: Engineering Co-Op 2	3	CHM 234: Introductory Biochemistry	4
EGR 315: Electronic Circuits 1	4	EGR 403: Medical Device Design	4	EGR 323: Signals & Systems	3
EGR 326: Embedded System Design	4			EGR 435: Math Model of Phys Sys	3
BMS 202: Anatomy and Physiology	4			General Education	3
Total	**16**	**Total**	**7**	**Total**	**13**

4th Year ~ Admission Required

Fall		Winter		Spring/Summer	
EGR 490: Engineering Co-Op 3	3	EGR 485: Senior Project 1	1	EGR 486: Senior Project 2	2
General Education (consider EGR 302)	3	EGR 434: Bioelectric Potentials	3	BME Elective	3 - 4
		General Education (select 2 courses)	6	General Education	3
		BME Elective	3-4	General Education	3
				ECO 210 or 211: Economics	3
Total	**6**	**Total**	**13-14**	**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 Undergraduate Advising Center
Innovation Desing Center, Suite 212
(616) 331-6025 or online at www.gvsu.edu/pce/advising

BME - EE Foundation Course Requirements			
WRT 150 (or WRT 130)	MTH 201	MTH 202	MTH 203
MTH 302	PHY 230	PHY 231	CHM 125 + 126
STA 220+EGR 220	EGR 100	EGR 111	EGR 112 (or EGR 104+108)
EGR 113	EGR 185	EGR 224	EGR 226+227
EGR 289	EGR 223	EGR 257	EGR 214+215

General Education Requirements	
WRT 150: Strategies in Writing (grade of "C" or higher required) **or** WRT 120 and WRT 130 (grade of "C" or higher required in both)	Life Sciences (BMS 202)
Physical Sciences (CHM 125 + 126)	Philosophy and Literature
Arts	Mathematical Sciences (MTH 201)
2 Social Behavioral Sciences (one must be ECO 210 or 211)	Global Perspectives
Historical Analysis (consider HSC 202)	U.S. Diversity
2 Issues Courses (prerequisite: must have 55+ credits. Consider EGR 302, ART 373 or ART 394)	2 Supplemental Writing Skills Courses (prerequisite: WRT 130 or WRT 150

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 the Engineering Foundation courses. Engineering 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 – Electrical Emphasis.
4) Click "Submit" and then "Change to New Program."
5) Other emphasis areas within Biomedical Engineering include Mechanical and Product Design and Manufacturing.

Major Notes:

1) Consider taking a course that fulfills both the U.S. Diversity category and one non-ECO Social and Behavioral Science course.
2) Consider taking a course that fulfills both the Global Perspectives category and one Issues course.
3) An ethics course is required in the engineering program. It is recommended to take **ONE** of the following:
    a. EGR 302 (Engineering Decision-Making in Society) or BIO 328 (Biomedical Ethics) in the Issues category
    b. PHI 102, BIO 338, COM 438, MGT 340, MGT 438, MKT 375, PHI 325, or PLS 338
    c. For Honors College students, the ethics requirement is fulfilled by completion of the Honors Curriculum
4) ECO 210 or 211 is required for the engineering major AND fulfills one Social and Behavioral Sciences course.
5) Two Supplemental Writing Skills (SWS) courses are required for graduation. These can be fulfilled via other general education categories. ***For example, EGR 302 will fulfill ONE SWS requirement, one Issues requirement AND the engineering ethics requirement***.
6) STA 215 can substitute for the STA 220 requirement.
7) Students may take MTH 204 and MTH 304 in place of the MTH 302 requirement.