Biomedical Engineering (Electrical Emphasis)
Grand Valley State University 2021-22 Catalog
MTH 124 Placement – 5 year program

Secondary Admission Criteria

1) A GPA of 2.7 or above in the Engineering Foundation courses. Engineering Foundation courses are designated by an asterisk (*) on this guide.

2) Completion of each course in the Engineering Foundation with a grade of C (2.0) or above, with no more than one repeat.

3) Completion of preparation for placement in the cooperative engineering education course, EGR 289

1st Semester Fall: 14 credits

MTH 124	Precalculus	5 credits
*WRT 150	Writing Strategies	4 credits
OR WRT 120/WRT 130		
*EGR 100	Intro to EGR	1 credit
*EGR 111	Intro to EGR Graphics	1 credit
General Education Course		3 credits

2nd Semester Winter: 14 credits

*MTH 201	Calculus 1	4 credits
*CHM 115	Chemistry I	4 credits
*EGR 112	Appl Program for EGR	2 credits
*EGR 113	Intro to CAD/CAM	1 credit
General Education Course		3 credits

3rd Semester Fall: 14 credits

*MTH 202	Calculus 2	4 credits
*PHY 230	Physics 1	5 credits
*EGR 185	First-Year EGR Design	2 credits
*STA 220	Stat Modeling for EGR	2 credits
*EGR 220	EGR Measure & Data	1 credit

4th Semester Winter: 14-15 credits

*MTH 203	Calculus 3	4 credits
*PHY 234 or 231 Physics 2		4/5 credits
General Education Courses (Select 2)		6 credits

5th Semester Fall: 12 credits

*EGR 224	Intro to Digital System	3 credits
*EGR 226	Microcontroller Program	3 credits
*EGR 227	Microcontroller Program Lab	1 credit
*EGR 214	Circuit Analysis 1	3 credits
*EGR 215	Circuit Analysis 1 Lab	1 credit
*EGR 289	EGR Professionalism	1 credit

6th Semester Winter: 14 credits

*MTH 302	Linear Algebra/Diff Eq	4 credits
*EGR 223	Prob. & Signal Analysis	3 credits
*EGR 257	Elec. Materials & Devices	4 credits
ECO 210 **OR** 211 Economics		3 credits

Spring/Summer Semester: 3 credits

EGR 290	Engineering Co-op 1	3 credits

7th Semester Fall: 16 credits

EGR 314	Circuit Analysis 2	4 credits
EGR 315	Electronic Circuits 1	4 credits
EGR 326	Embedded Sys. Design	4 credits
CHM 230	Intro Organic & Biochem	4 credits

Winter Semester: 3 credits

EGR 390	Engineering Co-op 2	3 credits

8th Semester Spring/Summer: 16 credits

BMS 202	Anatomy & Physiology	4 credits
EGR 323	Signals & Sys. Analysis	3 credits
General Education Courses (Select 3)		9 credits

Fall Semester: 6 credits

EGR 490	Engineering Co-op 3	3 credits
EGR 434	Bioelectric Potentials	3 credits

9th Semester Winter: 13-15 credits

EGR 485	Senior EGR Project 1	1 credit
EGR 403	Medical Device Design	3 credits
EGR 435	Math. Model Phys. Sys.	3 credits
Biomedical Engineering Electives (Select 2)		6-8 credits

10th Semester Spring/Summer: 5-6 credits

EGR 486	Senior EGR Project 2	2 credits
Biomedical Engineering Elective		3-4 credits

It is important to meet with a professional advisor in the PCEC Advising Center on a regular basis. The PCEC Advising Center is located in B-3-241 Mackinac Hall and 101 Eberhard Center. Please call 616-331-6025 or go online at www.gvsu.edu/pcec/advising to schedule an appointment.

Major Notes

An emphasis area is required for the Biomedical Engineering major. A list of major elective options is listed in the GVSU Academic Catalog.

1) To declare this emphasis, login to MyBanner, select "Student Records" and then "Change Major."
2) Click on "Change Major 1" and select *Biomedical Engineering – Electrical Emphasis*.
3) Click "Submit" and then "Change to New Program."
4) Other emphasis areas within Biomedical Engineering include Mechanical and Product Design and Manufacturing.

General Education

Category	Completed?	Category	Completed?	Category	Completed?	Category	Completed?
Physical Sciences (CHM 115)		Mathematical Sciences (MTH 124)		Global Perspectives		Writing (WRT 130 or 150)	
Life Sciences (BMS 202)		Social & Behavioral Sciences (ECO 210/211)		U.S. Diversity		SWS #1	
Philosophy & Literature		Social & Behavioral Sciences		Issues		SWS #2	
Arts		Historical Perspectives		Issues			

1) Consider taking a course that fulfills the U.S. Diversity category and one non-ECO Social and Behavioral Science course.
2) Consider taking a course that fulfills 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. PHI 102 in the Philosophy and Literature category
   b. BIO 328, BIO 338, COM 438, EGR 302, MGT 340, MGT 438, MKT 375, PHI 325 OR PLS 338 in the Issues category
   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 Science 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*.

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.

PCEC Advisors

Elizabeth Brand, brandeli@gvsu.edu

Rebecca Kolodge, kolodgre@gvsu.edu

Mary Nuznov, nuznovma@gvsu.edu

Colin DeKuiper, dekuipec@gvsu.edu

Jessica Noble, noblejes@gvsu.edu

Audra Pretty-Smith, prettyau@gvsu.edu

Sara Wheeler, wheelesa@gvsu.edu