

# Biomedical Engineering (Electrical Emphasis)

Grand Valley State University 2021-22 Catalog

MTH 201 Placement – 4 year HNR 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 201	Calculus 1	4 credits
*EGR 100	Intro to EGR	1 credit
*EGR 111	Intro to EGR Graphics	1 credit
*EGR 112	Appl Program for EGR	2 credits
HNR 151	Interdisciplinary Seq. 1	3 credits
HNR 152	Interdisciplinary Seq. 2	3 credits

## 2nd Semester Winter: 16 credits

*MTH 202	Calculus 2	4 credits
*PHY 230	Physics 1	5 credits
*EGR 113	Intro to CAD/CAM	1 credit
HNR 153	Interdisciplinary Seq. 3	3 credits
HNR 154	Interdisciplinary Seq. 4	3 credits

## Spring/Summer Semester: 10 credits

*MTH 203	Calculus 3	4 credits
*CHM 115	Chemistry I	4 credits
*EGR 185	First-Year EGR Design	2 credits

## 3rd Semester Fall: 15-16 credits

*PHY 234 or 231	Physics 2	4/5 credits
*STA 220	Stat Modeling for EGR	2 credits
*EGR 220	EGR Measure & Data	1 credit
*EGR 224	Intro to Digital System	3 credits
*EGR 226	Microcontroller Program	3 credits
*EGR 227	Microcontroller Program Lab	1 credit
*EGR 289	EGR Professionalism	1 credit

## 4th Semester Winter: 15 credits

*MTH 302	Linear Algebra/Diff Eq	4 credits
*EGR 223	Prob. & Signal Analysis	3 credits
*EGR 257	Elec. Materials & Devices	4 credits
*EGR 214	Circuit Analysis 1	3 credits
*EGR 215	Circuit Analysis 1 Lab	1 credit

## Spring/Summer Semester: 3 credits

EGR 290	Engineering Co-op 1	3 credits
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## 5th Semester Fall: 15 credits

EGR 314	Circuit Analysis 2	4 credits
EGR 315	Electronic Circuits 1	4 credits
EGR 326	Embedded Sys. Design	4 credits
HNR 201	Live. Learn. Lead.	3 credits

## Winter Semester: 3 credits

EGR 390	Engineering Co-op 2	3 credits
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## 6th Semester Spring/Summer: 14 credits

BMS 202	Anatomy & Physiology	4 credits
EGR 323	Signals & Sys. Analysis	3 credits
CHM 230	Intro Organic & Biochem	4 credits
HNR 200	C/C Engagement	3 credits

## Fall Semester: 6 credits

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

## 7th Semester Winter: 13-14 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 Elective	3-4 credits
HNR 350	Integrative Seminar	3 credits

## 8th Semester Spring/Summer: 11-13 credits

EGR 486	Senior EGR Project 2	2 credits
ECO 210 OR 211	Economics	3 credits
	Biomedical Engineering Electives (Select 2)	6-8 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](http://www.gvsu.edu/pcec/advising) to schedule an appointment.

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## 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.

## 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 485 fulfills the HNR 401 requirement.
- 3) EGR 486 fulfills the HNR 499 requirement.
- 4) The completion of the honors curriculum will fulfill the engineering ethics requirement.

Students are encouraged to plan ahead and submit a proposal for how they plan to fulfill the HNR 200 requirement. All students must complete 3 credits of HNR 200 before graduation. It can be taken as a 1-credit, 2-credit, or 3-credit course. There are three options for fulfilling this honors requirement: **pre-approved activity**, **pre-approved course substitution**, or **an activity or course**. Please work with an honors advisor to determine the best fit for you.

## 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

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