

# Biomedical Engineering (Product Design & Manufacturing Emphasis)

Grand Valley State University 2020-21 Catalog

MTH 201 Placement – 4 year Honors 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
*EGR 100	Introduction to Engineering
*EGR 111	Introduction to Engineering Graphics
*EGR 112	Applied Programming for Engineers
HNR 151	First Year Interdisciplinary Sequence 1
HNR 152	First Year Interdisciplinary Sequence 2

## 2nd Semester Winter: 16 credits

*MTH 202	Calculus 2
*PHY 230	Physics 1
*EGR 113	Introduction to CAD/CAM
HNR 153	First Year Interdisciplinary Sequence 3
HNR 154	First Year Interdisciplinary Sequence 4

## Spring/Summer Semester: 10 credits

*MTH 203	Calculus 3
*CHM 115	Chemistry 1
*EGR 185	First-Year Engineering Design

## 3rd Semester Fall: 16-17 credits

*PHY 234 or 231	Physics 2
*STA 220	Statistical Modeling for Engineers
*EGR 220	Egr Measurement and Data Analysis
*EGR 209	Mechanics and Machines
*EGR 226	Microcontroller Programming
*EGR 289	Engineering Co-op Preparation

## 4th Semester Winter: 16 credits

*MTH 302	Linear Algebra and Differential Equations
*EGR 309	Machine Design I
*EGR 250	Materials Science and Engineering
*EGR 214	Circuit Analysis 1

## Spring/Summer Semester: 3 credits

EGR 290	Engineering Co-op 1
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## 5th Semester Fall: 16 credits

EGR 301	Analytical Tools for Product Design
EGR 345	Dynamic System Modeling and Control
EGR 367	Manufacturing Processes
BMS 202	Anatomy & Physiology

## Winter Semester: 3 credits

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

EGR 362	Thermal & Fluid Systems
CHM 230	Intro to Organic and Biochemistry
HNR 200	Campus/Community Engagement
HNR 350	Honors Integrative Seminar

## Fall Semester: 6 credits

EGR 490	Engineering Co-op 3
EGR 453	Biomedical Materials

## 7th Semester Winter: 13-14 credits

EGR 485	Senior Engineering Project 1
EGR 435	Mathematical Model of Phys Systems
EGR 403	Medical Device Design
	Biomedical Engineering Elective
HNR 201	Live. Learn. Lead.

## 8th Semester Spring/Summer: 8-9 credits

EGR 486	Senior Engineering Project 2
	Biomedical Engineering Elective
ECO 210 OR 211	Economics

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 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 – Product Design and Manufacturing Emphasis**.
- 3) Click “Submit” and then “Change to New Program.”
- 4) Other emphasis areas within Biomedical Engineering include Mechanical and Electrical.

## 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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