

Biomedical Engineering (Product Design & Manufacturing Emphasis)

Grand Valley State University 2020-21 Catalog

MTH 201 Placement – 4 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: 16 credits

- *MTH 201 Calculus 1
- *WRT 150 Writing Strategies
- OR** WRT 120/WRT 130 (may change timeline)
- *CHM 115 Chemistry 1
- *EGR 100 Introduction to Engineering
- *EGR 111 Introduction to Engineering Graphics
- *EGR 112 Applied Programming for Engineers

2nd Semester Winter: 15 credits

- *MTH 202 Calculus 2
- *PHY 230 Physics 1
- *EGR 113 Introduction to CAD/CAM
- *EGR 185 First-Year Engineering Design
- *STA 220 Statistical Modeling for Engineers
- *EGR 220 Egr Measurement and Data Analysis

3rd Semester Fall: 17-18 credits

- *MTH 203 Calculus 3
- *PHY 234 or 231 Physics 2
- *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: 6 credits

- EGR 290 Engineering Co-op 1
- General Education Course

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: 6 credits

- EGR 390 Engineering Co-op 2
- General Education Course

6th Semester Spring/Summer: 17 credits

- EGR 362 Thermal & Fluid Systems
- CHM 230 Intro to Organic and Biochemistry
- General Education Courses (Select 3)

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
- General Education Course

8th Semester Spring/Summer: 14-15 credits

- EGR 486 Senior Engineering Project 2
- Biomedical Engineering Elective
- ECO 210 **OR** 211 Economics
- General Education Courses (Select 2)

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 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.

General Education

Category	Completed?	Category	Completed?	Category	Completed?
Physical Sciences (CHM 115)		Mathematical Sciences (MTH 201)		Global Perspectives	
Life Sciences (BMS 202)		Social & Behavioral Sciences (ECO 210/211)		U.S. Diversity	
Arts		Social & Behavioral Sciences		Issues	
Philosophy & Literature		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

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