Biomedical Engineering (Product Design & Manufacturing Emphasis)

Grand Valley State University 2020-21 Catalog

MTH 110 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 110 Algebra
*WRT 150 Writing Strategies
OR WRT 120/WRT 130 (may change timeline)
General Education Courses (Select 2)

2nd Semester Winter: 14 credits

MTH 124 Precalculus: Functions and Models
*EGR 100 Introduction to Engineering
*EGR 111 Introduction to Engineering Graphics
*CHM 115 Chemistry 1
General Education Course

3rd Semester Fall: 14 credits

*MTH 201 Calculus 1
*EGR 112 Applied Programming for Engineers
*EGR 113 Introduction to CAD/CAM
BMS 202 Anatomy & Physiology
General Education Course

4th Semester Winter: 14 credits

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

5th 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

6th Winter Semester: 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

7th Fall Semester: 15 credits

EGR 301 Analytical Tools for Product Design
EGR 345 Dynamic System Modeling and Control
EGR 367 Manufacturing Processes
ECO 210 **OR** 211 Economics

Winter Semester: 3 credits

EGR 390 Engineering Co-op 2

8th Semester Spring/Summer: 14 credits

EGR 362 Thermal & Fluid Systems
CHM 230 Intro to Organic and Biochemistry
General Education Courses (Select 2)

Fall Semester: 6 credits

EGR 490 Engineering Co-op 3
EGR 453 Biomedical Materials

9th Semester Winter: 16-17 credits

EGR 485 Senior Engineering Project 1
EGR 435 Mathematical Model of Phys Systems
EGR 403 Medical Device Design
Biomedical Engineering Elective
General Education Courses (Select 2)

10th Semester Spring/Summer: 5-6 credits

EGR 486 Senior Engineering Project 2
Biomedical Engineering Elective

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 124)		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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