Interdisciplinary Engineering (Design & Innovation Emphasis)

Grand Valley State University 2020-21 Catalog in cooperation with Cornerstone University

MTH 122 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: 13 credits

MTH 122 College Algebra
*WRT 150 Writing Strategies
OR WRT 120/WRT 130 (may change timeline)
General Education Courses (Select 2)

2nd Semester Winter: 15 credits

MTH 123 Trigonometry
*EGR 100 Introduction to Engineering
*EGR 111 Introduction to Engineering Graphics
*CHM 115 Chemistry 1
General Education Courses (Select 2)

3rd Semester Fall: 16 credits

*MTH 201 Calculus 1
*EGR 112 Applied Programming for Engineers
*EGR 113 Introduction to CAD/CAM
General Education Courses (Select 2)
IDS 101 Creativity, Innov. & Prob Sol. (Cornerstone)

4th Semester Winter: 14 credits

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

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 Semester Winter: 16 credits

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

Spring/Summer Semester: 3 credits

EGR 290 Engineering Co-op 1

7th Semester Fall: 15 credits

EGR 301 Analytical Tools for Product Design
EGR 345 Dynamic System Modeling and Control
EGR 367 Manufacturing Processes
MDA 112 Design Drawing 1 (Cornerstone)

Winter Semester: 6 credits

EGR 390 Engineering Co-op 2
INT 323 Design Thinking

8th Semester Spring/Summer: 13-14 credits

EGR 362 Thermal and Fluid Systems
IE Elective
INT 310 Creativity
ECO 210 **OR** 211 Economics

Fall Semester: 6 credits

EGR 490 Engineering Co-op 3
IDS 313 Thought & Design 2 (Cornerstone)

9th Semester Winter: 10 credits

EGR 485 Senior Engineering Project 1
IDS 413 Thought & Design 3 (Cornerstone)
IDS 312 Human Innovation (Cornerstone)
General Education Course

10th Semester Spring/Summer: 5 credits

EGR 486 Senior Engineering Project 2
General Education Course

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 Interdisciplinary Engineering major. Emphasis areas include: Data Science, Design & Innovation, Engineering Management, Environmental Engineering, Mechatronics and Renewable Energy.

1) To declare this emphasis, login to MyBanner, select "Student Records" and then "Change Major."
2) Click on "Change Major 1" and select ***Interdisciplinary Engineering – Design and Innovation Emphasis***.
3) Click "Submit" and then "Change to New Program."
4) For the IE Elective, students may enroll in EGR 401 (Winter), EGR 403 (Winter) or EGR 405 (Spring/Summer). Course descriptions are listed in the GVSU Academic Catalog.

General Education

Category	Completed?	Category	Completed?	Category	Completed?
Physical Sciences (CHM 115)		Mathematical Sciences (MTH 122)		Global Perspectives	
Life Sciences		Social & Behavioral Sciences (ECO 210/211)		U.S. Diversity	
Arts		Social & Behavioral Sciences		Issues (INT 323)	
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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