Interdisciplinary Engineering (Design & Innovation Emphasis)

Grand Valley State University 2021-22 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	3 credits
*WRT 150	Writing Strategies	4 credits
OR WRT 120/WRT 130 (may change timeline)		
General Education Courses (Select 2)		6 credits

2nd Semester Winter: 15 credits

MTH 123	Trigonometry	3 credits
*EGR 100	Intro to EGR	1 credit
*EGR 111	Intro to EGR Graphics	1 credit
*CHM 115	Chemistry 1	4 credits
General Education Courses (Select 2)		6 credits

3rd Semester Fall: 15 credits

*MTH 201	Calculus 1	4 credits
*EGR 112	Appl Program for EGR	2 credits
*EGR 113	Intro to CAD/CAM	1 credit
General Education Courses (Select 2)		6 credits
IDS 101	**Creativity (CU)**	**2 credits**

4th Semester Winter: 14 credits

*MTH 202	Calculus 2	4 credits
*PHY 230	Physics 1	5 credits
*EGR 185	First-Year EGR Design	2 credits
*STA 220	Stat Modeling for EGR	2 credits
*EGR 220	EGR Measure & Data	1 credit

5th Semester Fall: 17-18 credits

*MTH 203	Calculus 3	4 credits
*PHY 234 or 231	Physics 2	4-5 credits
*EGR 209	Mechanics and Machines	4 credits
*EGR 226	Microcontroller Program	3 credits
*EGR 227	Microcontroller Program Lab	1 credit
*EGR 289	EGR Professionalism	1 credit

6th Semester Winter: 16 credits

*MTH 302	Linear Algebra/Diff Eq	4 credits
*EGR 309	Machine Design I	3 credits
*EGR 310	Machine Design I Lab	1 credit
*EGR 250	Materials Science & EGR	3 credits
*EGR 251	Materials Science & EGR Lab	1 credit
*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

7th Semester Fall: 15 credits

EGR 301	Analytical Tools for PDM	4 credits
EGR 345	Dynamic System Model	4 credits
EGR 367	Mfg Processes	3 credits
EGR 368	Mfg Processes Lab	1 credit
MDA 112	**Design Drawing 1 (CU)**	**3 credits**

Winter Semester: 6 credits

EGR 390	Engineering Co-op 2	3 credits
INT 323	Design Thinking	3 credits

8th Semester Spring/Summer: 13-14 credits

EGR 362	Thermal & Fluid Systems	4 credits
IE Elective		3-4 credits
INT 310	Creativity	3 credits
ECO 210 **OR** 211	Economics	3 credits

Fall Semester: 6 credits

EGR 490	Engineering Co-op 3	3 credits
IDS 313	**Thought & Design 2 (CU)**	**3 credits**

9th Semester Winter: 10 credits

EGR 485	Senior Egr Project 1	1 credit
IDS 413	**Thought & Design 3 (CU)**	**3 credits**
IDS 312	**Human Innovation (CU)**	**3 credits**
General Education Course		3 credits

10th Semester Spring/Summer: 5 credits

EGR 486	Senior Egr Project 2	2 credits
General Education Course		3 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 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?	Category	Completed?
Physical Sciences (CHM 115)		Mathematical Sciences (MTH 122)		Global Perspectives		Writing (WRT 130 or 150)	
Life Sciences		Social & Behavioral Sciences (ECO 210/211)		U.S. Diversity		SWS #1	
Philosophy & Literature		Social & Behavioral Sciences		Issues (INT 323)		SWS #2	
Arts		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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