

Interdisciplinary Engineering (Renewable Energy Emphasis – Solar/All Track)
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: 13 credits

*MTH 201 Calculus 1
*EGR 112 Applied Programming for Engineers
*EGR 113 Introduction to CAD/CAM
ECO 210 OR 211 Economics
BIO 105 Environmental Science

4th Semester Winter: 15 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
*EGR 214 Circuit Analysis 1
*PHY 234 or 231 Physics 2
*EGR 209 Mechanics and Machines
*EGR 289 Engineering Co-op Preparation

6th Semester Winter: 14 credits

*MTH 302 Linear Algebra and Differential Equations
*EGR 257 Electronic Materials and Devices
*EGR 223 Probability and Signal Analysis
EGR 224 Introduction to Digital System Design

Spring/Summer Semester: 7 credits

EGR 290 Engineering Co-op 1
*EGR 226 Microcontroller Programming & Applications

7th Semester Fall: 12 credits

EGR 314, 360, or 362 (EGR 314 Recommended)
EGR 326, 345, or 346 (EGR 326 Recommended)
IE Track Elec. (See Chart for Course Selection)

Winter Semester: 3 credits

EGR 390 Engineering Co-op 2

8th Semester Spring/Summer: 12-13 credits

EGR 330 or IE Track Elec. (See Chart for Course Selection)
EGR 323 or IE Track Elec. (See Chart for Course Selection)
General Education Courses (Select 2)

Fall Semester: 7 credits

EGR 490 Engineering Co-op 3
EGR 463 Alternative Energy Systems and Applications

9th Semester Winter: 13-14 credits

EGR 485 Senior Engineering Project 1
EGR 406 Renewable Energy Systems: Structure, Policy, and Analysis
EGR 413 Materials for Energy Storage
IE Track Elec. (See Chart for Course Selection)
GEO 360 Earth Resources in Transition: Conventional to Sustainable

10th Semester Spring/Summer: 5-6 credits

EGR 486 Senior Engineering Project 2
IE Track Elec. (See Chart for Course Selection)

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 – Renewable Energy Emphasis**.
- 3) Click “Submit” and then “Change to New Program.”
- 4) EGR 224, EGR 330 and EGR 323 are prerequisite courses for selected upper-level electives. Students are required to take **four** IE Track electives. **Please plan ahead!** Course descriptions are listed in the [GVSU Academic Catalog](#).

Electives	Credits	Title	Semester	Course Prerequisites	Energy Focus
EGR 314	4	Circuit Analysis II	Fall	Only if not taken for required course, no double dipping	Solar
EGR 326	4	Embedded Systems	Fall		Solar
EGR 315	4	Electronic Circuits I	Fall		Solar
EGR 430	4	Electromechanics	Winter	EGR 330	All
EGR 455	4	Automatic Control	Summer	EGR 323	All
EGR 435	3	Mathematical Modeling of Physiologic Systems	Winter	MTH 302	All

General Education

Category	Completed?	Category	Completed?	Category	Completed?
Physical Sciences (CHM 115)		Mathematical Sciences (MTH 201)		Global Perspectives (EGR 406)	
Life Sciences (BIO 105)		Social & Behavioral Sciences (ECO 210/211)		U.S. Diversity	
Arts		Social & Behavioral Sciences		Issues (EGR 406)	
Philosophy & Literature		Historical Perspectives		Issues (GEO 360)	

- 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.**

PCEC Advisors

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