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

Grand Valley State University 2020-21 Catalog

MTH 124 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 124	Precalculus: Functions and Models
*WRT 150	Writing Strategies
OR WRT 120/WRT 130 (may change timeline)	
*EGR 100	Introduction to Engineering
*EGR 111	Introduction to Engineering Graphics

General Education Course

2nd Semester Winter: 14 credits

*MTH 201	Calculus 1
*CHM 115	Chemistry 1
*EGR 112	Applied Programming for Engineers
*EGR 113	Introduction to CAD/CAM

General Education Course

3rd Semester Fall: 12 credits

*MTH 202	Calculus 2
*EGR 185	First-Year Engineering Design
*STA 220	Statistical Modeling for Engineers
*EGR 220	Egr Measurement and Data Analysis
BIO 105	Environmental Science

4th Semester Winter: 15 credits

*MTH 203	Calculus 3
*PHY 230	Physics 1

EGR 224 Introduction to Digital System Design

ECO 210 **OR** 211 Economics

5th Semester Fall: 13-14 credits

*PHY 234 or 231	Physics 2
*EGR 209	Mechanics and Machines
*EGR 226	Microcontroller Program & Applications
*EGR 289	Engineering Co-op Preparation

6th Semester Winter: 15 credits

*MTH 302	Linear Algebra and Differential Equations
*EGR 257	Electronic Materials and Devices
*EGR 223	Probability and Signal Analysis
*EGR 214	Circuit Analysis 1

Spring/Summer Semester: 3 credits

EGR 290	Engineering Co-op 1

7th Semester Fall: 15 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)

General Education Course

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

Elizabeth Brand, brandeli@gvsu.edu
Jessica Noble, noblejes@gvsu.edu
Audra Pretty-Smith, prettyau@gvsu.edu
Colin DeKuiper, dekuipec@gvsu.edu
Mary Nuznov, nuznovma@gvsu.edu
Sara Wheeler, wheelesa@gvsu.edu