

Interdisciplinary Engineering (Renewable Energy Emphasis – Solar/All Track)  
Grand Valley State University 2021-22 Catalog  
MTH 123 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: 12 credits**

MTH 123	Trigonometry	3 credits
*WRT 150	Writing Strategies	4 credits
OR WRT 120/WRT 130 (may change timeline)		
*EGR 100	Intro to EGR	1 credit
*EGR 111	Intro to EGR Graphics	1 credit
General Education Course		3 credits

**2nd Semester Winter: 14 credits**

*MTH 201	Calculus 1	4 credits
*CHM 115	Chemistry 1	4 credits
*EGR 112	Appl Program for EGR	2 credits
*EGR 113	Intro to CAD/CAM	1 credit
General Education Course		3 credits

**3rd Semester Fall: 12 credits**

*MTH 202	Calculus 2	4 credits
*EGR 185	First-Year EGR Design	2 credits
*STA 220	Stat Modeling for EGR	2 credits
*EGR 220	EGR Measure & Data	1 credit
BIO 105	Environmental Science	3 credits

**4th Semester Winter: 15 credits**

*MTH 203	Calculus 3	4 credits
*PHY 230	Physics 1	5 credits
EGR 224	Intro to Digital System	3 credits
ECO 210 OR 211	Economics	3 credits

**5th Semester Fall: 13-14 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: 15 credits**

*MTH 302	Linear Algebra/Diff Eq	4 credits
*EGR 223	Prob. & Signal Analysis	3 credits
*EGR 257	Elec. Materials & Devices	4 credits
*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
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**7th Semester Fall: 14-15 credits**

EGR 314	Circuit Analysis 2	4 credits
EGR 326 or 345		4 credits
EGR 360 or IE Track Elec.	(See Notes)	3-4 credits
General Education Course		3 credits

**Winter Semester: 3 credits**

EGR 390	Engineering Co-op 2	3 credits
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**8th Semester Spring/Summer: 12-15 credits**

EGR 330 or IE Track Elec.	(See Chart)	3-4 credits
EGR 323 or IE Track Elec.	(See Chart)	3-4 credits
EGR 362 or IE Track Elec.	(See Notes)	3-4 credits
General Education Course		3 credits

**Fall Semester: 7 credits**

EGR 490	Engineering Co-op 3	3 credits
EGR 463	Alt Energy Sys & Appl.	4 credits

**9th Semester Winter: 13-14 credits**

EGR 485	Senior EGR Project 1	1 credits
EGR 406	Renewable Energy Sys.	3 credits
EGR 413	Materials:Energy Storage	3 credits
IE Track Elec.	(See Chart)	3-4 credits
GEO 360	Earth Res. Transition	3 credits

**10th Semester Spring/Summer: 8-9 credits**

EGR 486	Senior EGR Project 2	2 credits
IE Track Elec.	(See Chart)	3-4 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](http://www.gvsu.edu/pcec/advising) to schedule an appointment.

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## Major Notes

- 1) 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.
  - a. To declare this emphasis, login to MyBanner, select “Student Records” and then “Change Major.”
  - b. Click on “Change Major 1” and select **Interdisciplinary Engineering – Renewable Energy Emphasis**.
  - c. Click “Submit” and then “Change to New Program.”
  - d. 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](#).
- 2) Students must complete **EITHER** EGR 360 **OR** 362. A track elective should be taken in the other semester.

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?	Category	Completed?
Physical Sciences (CHM 115)		Mathematical Sciences (MTH 123)		Global Perspectives (EGR 406)		Writing (WRT 130 or 150)	
Life Sciences (BIO 105)		Social & Behavioral Sciences (ECO 210/211)		U.S. Diversity		SWS #1	
Philosophy & Literature		Social & Behavioral Sciences		Issues (EGR 406)		SWS #2	
Arts		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](mailto:brandeli@gvsu.edu)  
 Rebecca Kolodge, [kolodgre@gvsu.edu](mailto:kolodgre@gvsu.edu)  
 Mary Nuznov, [nuznovma@gvsu.edu](mailto:nuznovma@gvsu.edu)

Colin DeKuiper, [dekuippec@gvsu.edu](mailto:dekuippec@gvsu.edu)  
 Jessica Noble, [noblejes@gvsu.edu](mailto:noblejes@gvsu.edu)  
 Audra Pretty-Smith, [prettyau@gvsu.edu](mailto:prettyau@gvsu.edu)

Sara Wheeler, [wheeleesa@gvsu.edu](mailto:wheeleesa@gvsu.edu)