

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

Grand Valley State University 2020-21 Catalog

MTH 201 Placement – 5 year Honors 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 201	Calculus 1
*EGR 100	Introduction to Engineering
*EGR 111	Introduction to Engineering Graphics
*EGR 112	Applied Programming for Engineers
HNR 151	First Year Interdisciplinary Sequence 1
HNR 152	First Year Interdisciplinary Sequence 2

2nd Semester Winter: 13 credits

*MTH 202	Calculus 2
*EGR 113	Introduction to CAD/CAM
*EGR 185	First-Year Engineering Design
HNR 153	First Year Interdisciplinary Sequence 3
HNR 154	First Year Interdisciplinary Sequence 4

3rd Semester Fall: 14 credits

*MTH 203	Calculus 3
*CHM 115	Chemistry 1
*STA 220	Statistical Modeling for Engineers
*EGR 220	Egr Measurement and Data Analysis
HNR 201	Live. Learn. Lead.

4th Semester Winter: 15 credits

*MTH 302	Linear Algebra and Differential Equations
*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: 14 credits

*EGR 257	Electronic Materials and Devices
*EGR 223	Probability and Signal Analysis
*EGR 214	Circuit Analysis 1
BIO 105	Environmental Science

Spring/Summer Semester: 3 credits

EGR 290	Engineering Co-op 1
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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
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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)
HNR 200	Campus/Community Engagement
HNR 350	Honors Integrative Seminar

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](#).

<u>Electives</u>	<u>Credits</u>	<u>Title</u>	<u>Semester</u>	<u>Course Prerequisites</u>	<u>Energy Focus</u>
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

Honors

The Frederik Meijer Honors College and the School of Engineering have approved the following substitutions for the honors curriculum:

- 1) Together, EGR 100 and EGR 185 fulfill the HNR 251 requirement.
- 2) EGR 485 fulfills the HNR 401 requirement.
- 3) EGR 486 fulfills the HNR 499 requirement.
- 4) The completion of the honors curriculum will fulfill the engineering ethics requirement.

Students are encouraged to plan ahead and submit a proposal for how they plan to fulfill the HNR 200 requirement. All students must complete 3 credits of HNR 200 before graduation. It can be take as a 1-credit, 2-credit, or 3-credit course. There are three options for fulfilling this honors requirement: **pre-approved activity**, **pre-approved course substitution**, or **an activity or course**. Please work with an honors advisor to determine the best fit for you.

PCEC Advisors

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