

Interdisciplinary Engineering (Renewable Energy Emphasis – Wind Turbine/Alternative Cars Track)

Grand Valley State University 2020-21 Catalog

MTH 201 Placement – 4 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: 16 credits

*MTH 202	Calculus 2
*PHY 230	Physics 1
*EGR 113	Introduction to CAD/CAM
HNR 153	First Year Interdisciplinary Sequence 3
HNR 154	First Year Interdisciplinary Sequence 4

Spring/Summer Semester: 10 credits

*MTH 203	Calculus 3
*CHM 115	Chemistry 1
*EGR 185	First-Year Engineering Design

3rd Semester Fall: 16-17 credits

*PHY 234 or 231	Physics 2
*STA 220	Statistical Modeling for Engineers
*EGR 220	Egr Measurement and Data Analysis
*EGR 209	Mechanics and Machines
*EGR 214	Circuit Analysis 1
*EGR 289	Engineering Co-op Preparation

4th Semester Winter: 15 credits

*MTH 302	Linear Algebra and Differential Equations
*EGR 309	Machine Design 1
*EGR 250	Materials Science and Engineering
EGR 312	Dynamics

Spring/Summer Semester: 7 credits

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

5th Semester Fall: 15 credits

EGR 360 OR IE Track Elec.	(See Chart for Course Selection)
EGR 345 OR 346	Dynamic Sys./Mechatronic Sys.
IE Track Elec.	(EGR 352 Recommended)
HNR 201	Live. Learn. Lead

Winter Semester: 7 credits

EGR 390	Engineering Co-op 2
IE Track Elec.	(EGR 450 Recommended)

6th Semester Spring/Summer: 14 credits

EGR 362 or IE Track Elec.	(See Chart for Course Selection)
EGR 365 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

7th Semester Winter: 14 credits

EGR 485	Senior Engineering Project 1
EGR 406	Renewable Energy Systems
EGR 413	Materials for Energy Storage
GEO 360	Earth Resources in Transition
IE Track Elec.	(EGR 465 Recommended)

8th Semester Spring/Summer: 11 credits

EGR 486	Senior Engineering Project 2
IE Track Elec.	(EGR 405 Recommended)
ECO 210 OR 211	Economics
BIO 105	Environmental Science

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 312 and EGR 365 are prerequisite courses for selected upper-level IE Track 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 352	4	Kinematics and Dynamics	Fall	EGR 312	Wind Turbine, Alternative Cars
EGR 405	3	Materials Failure Analysis	Summer	EGR 250	Wind Turbine, Alternative Cars
EGR 435	3	Mathematical Modeling of Physiologic Systems	Winter	MTH 302	All
EGR 450	4	Manufacturing Control Systems	Winter	EGR 345 or 346	Wind Turbine
EGR 465	4	Computational Fluid Dynamics	Winter	EGR 365	Wind Turbine

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 taken 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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