

Interdisciplinary Engineering (Renewable Energy Emphasis – Wind Turbine/Alternative Cars 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: 13 credits

*MTH 302	Linear Algebra and Differential Equations
*PHY 230	Physics 1
*EGR 226	Microcontroller Programming & Applications

5th Semester Fall: 13-14 credits

*PHY 234 or 231	Physics 2
*EGR 209	Mechanics and Machines
*EGR 214	Circuit Analysis 1
*EGR 289	Engineering Co-op Preparation

6th Semester Winter: 14 credits

*EGR 309	Machine Design 1
*EGR 250	Materials Science and Engineering
EGR 312	Dynamics
HNR 200	Campus/Community Engagement

Spring/Summer Semester: 3 credits

EGR 290	Engineering Co-op 1
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7th Semester Fall: 12 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)

Winter Semester: 7 credits

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

8th 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 350	Honors Integrative Seminar
ECO 210	OR 211 Economics

Fall Semester: 7 credits

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

9th 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)

10th Semester Spring/Summer: 8 credits

EGR 486	Senior Engineering Project 2
IE Track Elec.	(EGR 405 Recommended)
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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