

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

Grand Valley State University 2021-22 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	4 credits
*EGR 100	Intro to EGR	1 credit
*EGR 111	Intro to EGR Graphics	1 credit
*EGR 112	Appl Program for EGR	2 credits
HNR 151	Interdisciplinary Seq. 1	3 credits
HNR 152	Interdisciplinary Seq. 2	3 credits

2nd Semester Winter: 16 credits

*MTH 202	Calculus 2	4 credits
*PHY 230	Physics 1	5 credits
*EGR 113	Intro to CAD/CAM	1 credit
HNR 153	Interdisciplinary Seq. 3	3 credits
HNR 154	Interdisciplinary Seq. 4	3 credits

Spring/Summer Semester: 10 credits

*MTH 203	Calculus 3	4 credits
*CHM 115	Chemistry 1	4 credits
*EGR 185	First-Year EGR Design	2 credits

3rd Semester Fall: 16-17 credits

*PHY 234 or 231	Physics 2	4-5 credits
*STA 220	Stat Modeling for EGR	2 credits
*EGR 220	EGR Measure & Data	1 credit
*EGR 209	Mechanics and Machines	4 credits
*EGR 214	Circuit Analysis 1	3 credits
*EGR 215	Circuit Analysis 1 Lab	1 credit
*EGR 289	EGR Professionalism	1 credit

4th Semester Winter: 16 credits

*MTH 302	Linear Algebra/Diff Eq	4 credits
*EGR 309	Machine Design I	3 credits
*EGR 310	Machine Design I Lab	1 credit
*EGR 250	Materials Science & EGR	3 credits
*EGR 251	Materials Science & EGR Lab	1 credit
*EGR 226	Microcontroller Program	3 credits
*EGR 227	Microcontroller Program Lab	1 credit

Spring/Summer Semester: 6 credits

EGR 290	Engineering Co-op 1	3 credits
EGR 312	Dynamics	3 credits

5th Semester Fall: 13-15 credits

EGR 360	OR IE Track Elec. (See Chart)	3-4 credits
EGR 345	OR 346 Dynamic Sys./Mech. Sys.	4 credits
IE Track Elec.	(EGR 352 Recommended)	3-4 credits
BIO 105	Environmental Science	3 credits

Winter Semester: 6-7 credits

EGR 390	Engineering Co-op 2	3 credits
IE Track Elec.	(EGR 450 Recommended)	3-4 credits

6th Semester Spring/Summer: 12-14 credits

EGR 362 or IE Track Elec.	(See Chart)	3-4 credits
EGR 365 or IE Track Elec.	(See Chart)	3-4 credits
ECO 210	OR 211 Economics	3 credits
HNR 200	C/C Engagement	3 credits

Fall Semester: 7 credits

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

7th 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
GEO 360	Earth Res. Transition	3 credits
IE Track Elec.	(EGR 465 Recommended)	3-4 credits

8th Semester Spring/Summer: 11-12 credits

EGR 486	Senior EGR Project 2	2 credits
IE Track Elec.	(EGR 405 Recommended)	3-4 credits
HNR 200	C/C Engagement	3 credits
HNR 350	Integrative Seminar	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 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 250/251	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 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

Elizabeth Brand, brandeli@gvsu.edu
Rebecca Kolodge, kolodgre@gvsu.edu
Mary Nuznov, nuznovma@gvsu.edu

Colin DeKuiper, dekuippec@gvsu.edu
Jessica Noble, noblejes@gvsu.edu
Audra Pretty-Smith, prettyau@gvsu.edu
Sara Wheeler, wheeleesa@gvsu.edu