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

Grand Valley State University 2021-22 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	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: 13 credits

*MTH 202	Calculus 2	4 credits
*EGR 113	Intro to CAD/CAM	1 credit
*EGR 185	First-Year EGR Design	2 credits
HNR 153	Interdisciplinary Seq. 3	3 credits
HNR 154	Interdisciplinary Seq. 4	3 credits

3rd Semester Fall: 14 credits

*MTH 203	Calculus 3	4 credits
*CHM 115	Chemistry 1	4 credits
*STA 220	Stat Modeling for EGR	2 credits
*EGR 220	EGR Measure & Data	1 credit
ECO 210 **OR** 211	Economics	3 credits

4th Semester Winter: 13 credits

*MTH 302	Linear Algebra/Diff Eq	4 credits
*PHY 230	Physics 1	5 credits
*EGR 226	Microcontroller Program	3 credits
*EGR 227	Microcontroller Program Lab	1 credit

5th Semester Fall: 13-14 credits

*PHY 234 or 231	Physics 2	4-5 credits
*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

6th Semester Winter: 14 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 312	Dynamics	3 credits
HNR 201	Live. Learn. Lead.	3 credits

Spring/Summer Semester: 3 credits

EGR 290	Engineering Co-op 1	3 credits

7th 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

8th 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
HNR 200	C/C Engagement	3 credits
HNR 350	Integrative Seminar	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
GEO 360	Earth Res. Transition	3 credits
IE Track Elec.	(EGR 465 Recommended)	3-4 credits

10th Semester Spring/Summer: 5-6 credits

EGR 486	Senior EGR Project 2	2 credits
IE Track Elec.	(EGR 405 Recommended)	3-4 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.

Electives	Credits	Title	Semester	Course Prerequisites	Energy Focus
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 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.

Recommendations

It is strongly encouraged that students do not begin or break curriculum thread by taking courses at other institutions.

For example:

Taking MTH 201 equivalent elsewhere, then return to Grand Valley and continuing in the math thread with MTH 202.

PCEC Advisors

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