

Interdisciplinary Engineering (Renewable Energy Emphasis – Solar/All 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

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| *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

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|----------|---|
| *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

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

3rd Semester Fall: 16-17 credits

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| *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: 14 credits

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| *MTH 302 | Linear Algebra and Differential Equations |
| *EGR 257 | Electronic Materials and Devices |
| EGR 224 | Introduction to Digital System Design |
| *EGR 223 | Probability and Signal Analysis |

Spring/Summer Semester: 7 credits

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

5th Semester Fall: 15 credits

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|----------------------|----------------------------------|
| EGR 314, 360, or 362 | (EGR 314 Recommended) |
| EGR 326, 345, or 346 | (EGR 326 Recommended) |
| IE Track Elec. | (See Chart for Course Selection) |
| BIO 105 | Environmental Science |

Winter Semester: 6 credits

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| EGR 390 | Engineering Co-op 2 |
| GEO 360 | Earth Resources in Transition: |

6th Semester Spring/Summer: 12-13 credits

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|---------------------------|----------------------------------|
| EGR 330 or IE Track Elec. | (See Chart for Course Selection) |
| EGR 323 or IE Track Elec. | (See Chart for Course Selection) |
| ECO 210 OR 211 | Economics |
| HNR 200 | Campus/Community Engagement |

Fall Semester: 7 credits

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

7th Semester Winter: 13-14 credits

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|----------------|----------------------------------|
| EGR 485 | Senior Engineering Project 1 |
| EGR 406 | Renewable Energy Systems |
| EGR 413 | Materials for Energy Storage |
| IE Track Elec. | (See Chart for Course Selection) |
| HNR 201 | Live. Learn. Lead. |

8th Semester Spring/Summer: 14-15 credits

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| EGR 486 | Senior Engineering Project 2 |
| IE Track Elec. | (See Chart for Course Selection) |
| HNR 350 | Honors Integrative Seminar |

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 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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