

**Interdisciplinary Engineering:
Design & Innovation Emphasis**

Honors College: MTH 201 Start, 4 Year Plan

Secondary Admission Required

| 1st Year | | | | | |
|---------------------------------------|--------------|---------------------------------------|--------------|---------------------------------|--------------|
| Fall | | Winter | | Spring/Summer | |
| *MTH 201: Calculus 1 | 4 | *MTH 202: Calculus 2 | 4 | *EGR 185: First-Year EGR Design | 2 |
| *EGR 100: Intro to EGR | 1 | *PHY 230: Physics 1 | 5 | *CHM 115: Chemistry 1 | 4 |
| *EGR 111: Intro to EGR Graphics | 1 | *EGR 113: Intro to CAD/CAM | 1 | *MTH 203: Calculus 3 | 4 |
| *EGR 112: Appl Program for EGR | 2 | HNR 153: Interdisciplinary Sequence 3 | 3 | | |
| HNR 151: Interdisciplinary Sequence I | 3 | HNR 154: Interdisciplinary Sequence 4 | 3 | | |
| HNR 152: Interdisciplinary Sequence 2 | 3 | | | | |
| Total | 14 | Total | 16 | Total | 10 |
| 2nd Year | | | | | |
| Fall | | Winter | | Spring/Summer | |
| *PHY 234 or 231: Physics 2 | 4-5 | *MTH 302: Linear Algebra/Diff Eq | 4 | EGR 290: Engineering Co-op 1 | 3 |
| *STA 220: Stat Modeling for EGR | 2 | *EGR 214: Circuit Analysis 1 | 3 | *EGR 226: Microcontrollers | 3 |
| *EGR 220: EGR Measurement and Data | 1 | *EGR 215: Circuit Analysis 1 Lab | 1 | *EGR 227: Microcontrollers Lab | 1 |
| *EGR 209: Mechanics and Machines | 4 | *EGR 309: Machine Design 1 | 3 | | |
| *EGR 289: EGR Professionalism | 1 | *EGR 310: Machine Design 1 Lab | 1 | | |
| IDS 101: Creativity (CU) | 2 | *EGR 250: Materials Sci & EGR | 3 | | |
| | | *EGR 251: Materials Sci & EGR Lab | 1 | | |
| Total | 14-15 | Total | 16 | Total | 7 |
| 3rd Year ~ Admission Required | | | | | |
| Fall | | Winter | | Spring/Summer | |
| EGR 301: Analytical Tools for PDM | 4 | EGR 390: Engineering Co-op 2 | 3 | EGR 362: Thermal & Fluid Sys | 4 |
| EGR 345: Dynamic System Model | 4 | INT 323: Design Thinking | 3 | ECO 210 or 211: Economics | 3 |
| EGR 367: Mfg Processes | 3 | | | INT 310: Creativity | 3 |
| EGR 368: Mfg Processes Lab | 1 | | | Supplemental Writing Skills | 3 |
| MDA 112: Design Drawing 1 (CU) | 3 | | | | |
| Total | 15 | Total | 6 | Total | 13-14 |
| 4th Year ~ Admission Required | | | | | |
| Fall | | Winter | | Spring/Summer | |
| EGR 490: Engineering Co-op 3 | 3 | EGR 485: Senior EGR Project 1 | 1 | EGR 486: Senior EGR Project 2 | 2 |
| IDS 313: Thought & Design 2 (CU) | 3 | IDS 312: Human Innovation (CU) | 3 | HNR 350: Integrative Seminar | 3 |
| | | IDS 413: Thought & Design 3 (CU) | 3 | | |
| | | IE Elective | 3-4 | | |
| | | HNR 201: Live. Learn. Lead | 3 | | |
| Total | 6 | Total | 13-14 | Total | 5 |

- This is a suggested curriculum guide that might not be applicable to every student
- Foundation courses are required for secondary admission and are designated by an asterisk (*) on this guide
- Courses to be completed at Cornerstone University are designated by a (CU) on this guide
- Student must have a **minimum of 120 credits** to graduate, with **58 of the 120 credits** being from a senior level institution and the **final 30 of the 120 credits** completed at GVSU

Padnos College of Engineering and Computing ~ Student Services Office

B-3-241 Mackinac Hall and 101 Eberhard Center

(616) 331-6025 or online at www.gvsu.edu/pcec/advising

| √ | IE- Design & Innovation Foundation Requirements | √ | Honors Requirements |
|---|--|---|--|
| | MTH 201 | | HNR 151 |
| | MTH 202 | | HNR 152 |
| | MTH 203 | | HNR 153 |
| | MTH 302 | | HNR 154 |
| | CHM 115 | | HNR 200 (fulfilled by EGR 290, EGR 390, and EGR 490) |
| | PHY 230 | | HNR 201 |
| | PHY 231 or 234 | | HNR 251 (fulfilled by EGR 100 + EGR 185) |
| | WRT 150 (fulfilled via completion of the Honors Program) | | HNR 350 |
| | EGR 100 | | HNR 401/499 (fulfilled by EGR 485 + EGR 486) |
| | EGR 111 | | |
| | EGR 112 or EGR 104 + EGR 108 | | |
| | EGR 113 | | |
| | EGR 185 | | |
| | EGR 289 | | |
| | EGR 220+STA 220 | | |
| | EGR 214+215 | | |
| | EGR 226+227 | | |
| | EGR 209 | | |
| | EGR 309+310 | | |
| | EGR 250+251 | | |

Secondary Admission Requirements:

Detailed application and admission requirements available at <https://www.gvsu.edu/engineering/secondary-admission-to-engineering-majors-44.htm>

- ✓ A GPA of 2.7 or above in Engineering Foundation courses. Foundation courses are designated by an asterisk (*) on this guide.
- ✓ Completion of each course in the Engineering Foundation with a grade of C (2.0) or above, with no more than one repeat.
- ✓ Completion of preparation for placement in the cooperative engineering education course, EGR 289.

Major Declaration Steps:

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 – Design and Innovation Emphasis**.
- 3) Click "Submit" and then "Change to New Program."
- 4) For the IE Elective, students may enroll in EGR 401 (Winter), EGR 403 (Winter) or EGR 405 (Spring/Summer). Course descriptions are listed in the GVSU Academic Catalog.

Major Notes:

- 1) This emphasis is offered in cooperation with Cornerstone University (CU). Students pursuing this emphasis will be required to take some of their coursework at CU. Those courses are designated by a (CU) on this guide.

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 290, EGR 390, and EGR 490 fulfill the HNR 200 requirement. Students are encouraged to plan ahead and submit a [proposal form](#) for the HNR 200 substitution.
- 3) EGR 485 fulfills the HNR 401 requirement.
- 4) EGR 486 fulfills the HNR 499 requirement.
- 5) The completion of the honors curriculum will fulfill the engineering ethics requirement.
- 6) All GVSU students must earn credit for two Supplemental Writing Skills (SWS) courses. Honors students can earn credit for one SWS course by completing HNR 153 and HNR 154 (the winter semester of a first-year sequence) with an averaged grade of B or better. They must earn their second SWS course credit outside of the Honors requirements.

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.