Grand Valley State University
Seymour and Esther Padnos College of Engineering

Bachelor of Science in Engineering (B.S.E.)

# Interdisciplinary Engineering: Engineering Management Emphasis

**MTH 201 Start, 4 Year Plan**

Secondary Admission Required

**2024 – 2025 Catalog Year**

## 1st Year

| Fall | | Winter | | Spring/Summer | |
|---|---|---|---|---|---|
| *MTH 201: Calculus 1 | 4 | *MTH 202: Calculus 2 | 4 | | |
| *CHM 115: Chemistry 1 | 4 | *PHY 230: Physics 1 | 5 | | |
| *WRT 150: Strategies in Writing **or** WRT 120 and WRT 130 | 4 | *EGR 113: Intro to CAD/CAM | 1 | | |
| | | *EGR 185: First-Year Engineering Design | 2 | | |
| *EGR 100: Intro to Engineering | 1 | *EGR 220: Engineering Measure & Data | 1 | | |
| *EGR 111: Intro to Engineering Graphics | 1 | *STA 220: Statistical Modeling for Engineering | 2 | | |
| *EGR 112: Applied Programming for EGR | 2 | | | | |
| **Total** | **16** | **Total** | **15** | | |

## 2nd Year

| Fall | | Winter | | Spring/Summer | |
|---|---|---|---|---|---|
| *MTH 203: Calculus 3 | 4 | *MTH 302: Linear Algebra/Diff EQ | 4 | EGR 290: EGR Co-Op 1 | 3 |
| *PHY 231 or 234: Physics 2 | 4-5 | *EGR 214: Circuit Analysis 1 | 3 | General Education | 3 |
| *EGR 209: Mechanics and Machines | 4 | *EGR 215: Circuit Analysis 1 Lab | 1 | | |
| *EGR 226: Microcontroller Programming | 3 | *EGR 309: Machine Design 1 | 3 | | |
| *EGR 227: Microcontroller Program. Lab | 1 | *EGR 310: Machine Design 1 Lab | 1 | | |
| *EGR 289: Engineering Professionalism | 1 | *EGR 250: Materials Science & EGR | 3 | | |
| | | *EGR 251: Materials Science & EGR Lab | 1 | | |
| **Total** | **17-18** | **Total** | **16** | **Total** | **6** |

## 3rd Year ~ Admission Required

| Fall | | Winter | | Spring/Summer | |
|---|---|---|---|---|---|
| EGR 345: Dynamic System Modeling | 4 | EGR 390: Engineering Co-Op 2 | 3 | EGR 362: Thermal & Fluid Sys | 4 |
| EGR 367: Mfg Processes | 3 | General Education | 3 | EGR 440: Intro to Production | 3 |
| EGR 368: Mfg Processes Lab | 1 | | | EGR 441: EGR Economics | 4 |
| ACC 212: Prin. of Financial Accounting | 3 | | | ACC 213: Prin of Mgr Accounting | 3 |
| BUS 201: Legal Env. for Business | 3 | | | | |
| **Total** | **14** | **Total** | **6** | **Total** | **14** |

## 4th Year ~ Admission Required

| Fall | | Winter | | Spring/Summer | |
|---|---|---|---|---|---|
| EGR 490: Engineering Co-Op 3 | 3 | EGR 485: Senior Project 1 | 1 | EGR 486: Senior Project 2 | 2 |
| | | | | MKT 300: Fund of Mkt for Non-Bus Majors | 3 |
| General Education | 3 | FIN 300: Fund of Fin for Non-Bus Majors | 3 | General Education | 3 |
| | | MGT 300: Fund of Mgt for Non-Bus Majors | 3 | General Education | 3 |
| | | ECO 210 or 211: Economics | 3 | General Education | 3 |
| | | General Education | 3 | | |
| **Total** | **6** | **Total** | **13** | **Total** | **14** |

- 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
- 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 Student Services Office**
101 Eberhard Center
(616) 331-6025 or online at www.gvsu.edu/pce/advising

| IE – EGR Management Foundation Requirements | | | |
|---|---|---|---|
| MTH 201 | MTH 202 | MTH 203 | MTH 302 |
| WRT 150 or WRT 130 | CHM 115 | PHY 230 | PHY 234 or PHY 231 |
| EGR 100 | 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 |

| General Education Requirements | |
|---|---|
| WRT 150: Strategies in Writing (grade of "C" or higher required)<br>**or** WRT 120 and WRT 130 (grade of "C" or higher required in both) | Life Sciences (consider BIO 105) |
| Physical Sciences (CHM 115) | Philosophy and Literature |
| Arts | Mathematical Sciences (MTH 201) |
| Social Behavioral Sciences (ECO 210 or 211) | Social Behavioral Sciences |
| Historical Analysis (consider HSC 202) | U.S. Diversity |
| Global Perspectives | 2 Supplemental Writing Skills Courses (prerequisite: WRT 130 or WRT 150) |
| 2 Issues Courses (prerequisite: must have 55+ credits) | |

**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 – Engineering Management Emphasis***.
3) Click "Submit" and then "Change to New Program."
4) Please also declare a ***Business General*** minor in MyBanner, by selecting "Student Records", then "Change Major" and "Add a Minor."

**Major Notes:**

1) Consider taking a course that fulfills the U.S. Diversity category and one non-ECO Social and Behavioral Science course.
2) Consider taking a course that fulfills the Global Perspectives category and one Issues course.
3) An ethics course is required in the engineering program. It is recommended to take **ONE** of the following:
    a. EGR 302 (Engineering Decision-Making in Society), BIO 328, BIO 338, COM 438, MGT 340, MGT 438, MKT 375, PHI 325 or PLS 338 in the Issues category
    b. PHI 102 in the Philosophy and Literature category
    c. For Honors College students, the ethics requirement is fulfilled by completion of the Honors Curriculum
4) ECO 210 or 211 is required for the engineering major AND fulfills one Social and Behavioral Science course.
5) Two Supplemental Writing Skills (SWS) courses are required for graduation. These can be fulfilled via other general education categories. ***For example, EGR 302 will fulfill ONE SWS requirement, one Issues requirement AND the engineering ethics requirement***.

**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.