

Bachelor of Science in Engineering (B.S.E.)
Product Design & Manufacturing Engineering:
Design Emphasis
MTH 123 Start, 5 Year Plan
 Secondary Admission Required

| 1st Year | | | | | |
|---|-----------|--|-----------|--------------------------------|-----------|
| Fall | | Winter | | Spring/Summer | |
| MTH 123: Trigonometry | 3 | *MTH 201: Calculus I | 4 | | |
| *WRT 150: Strategies in Writing or WRT 120 and WRT 130 | 4 | *CHM 115: Chemistry I | 4 | | |
| *EGR 100: Intro to Engineering | 1 | *EGR 108: Applied Programming II | 2 | | |
| *EGR 104: Applied Programming I | 2 | | | | |
| *EGR 111: Intro to Engineering Graphics | 1 | *EGR 113: Intro to CAD/CAM | 1 | | |
| General Education | 3 | General Education | 3 | | |
| Total | 12 | Total | 14 | | |
| 2nd Year | | | | | |
| Fall | | Winter | | Spring/Summer | |
| *MTH 202: Calculus 2 | 4 | *MTH 203: Calculus 3 | 4 | | |
| *EGR 185: First-Year EGR Design | 2 | *PHY 230: Physics I | 5 | | |
| General Education | 3 | *STA 220: Statistical Modeling for EGR | 2 | | |
| General Education | 3 | *EGR 220: EGR Measure & Data | 1 | | |
| | | General Education | 3 | | |
| Total | 12 | Total | 15 | | |
| 3rd Year | | | | | |
| Fall | | Winter | | Spring/Summer | |
| *PHY 234 or 231: Physics 2 | 4-5 | *MTH 302: Linear Algebra/Differential EQ | 4 | EGR 290: Engineering Co-Op I | 3 |
| *EGR 209: Mechanics & Machines | 4 | *EGR 214: Circuit Analysis 1 | 3 | | |
| *EGR 226: Microcontroller Program | 3 | *EGR 215: Circuit Analysis 1 Lab | 1 | | |
| *EGR 227: Microcontroller Program Lab | 1 | *EGR 309: Machine Design 1 | 3 | | |
| *EGR 289: EGR Professionalism | 1 | *EGR 310: Machine Design 1 Lab | 1 | | |
| | | *EGR 250: Materials Science & EGR | 3 | | |
| | | *EGR 251: Materials Science & EGR Lab | 1 | | |
| Total 13-14 | | Total | 16 | Total | 3 |
| 4 th 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 Modeling | 4 | | | EGR 329: Intro to FEA | 3 |
| EGR 367: Mfg Processes | 3 | | | EGR 405: Mat. Failure Analysis | 3 |
| EGR 368: Mfg Processes Lab | 1 | | | General Education | 3 |
| ECO 210 or 211: Economics | 3 | | | | |
| Total | 15 | Total | 3 | Total | 13 |
| 5 th 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 |
| | | EGR 401: Advances Product Design | 4 | EGR 440: Intro to Production | 3 |
| | | PDM Elective | 3-4 | General Education | 3 |
| | | PDM Elective | 3-4 | General Education | 3 |
| | | General Education | 3 | | |
| Total | 3 | Total 14-16 | | Total | 11 |

• 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 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

| √ | PDM Foundation Requirements | √ | General Education Requirements |
|---|-----------------------------|---|---|
| | MTH 201 | | WRT 150: Strategies in Writing (grade of "C" or higher required) or WRT 120 and WRT 130 |
| | MTH 202 | | Life Sciences (consider BIO 105) |
| | MTH 203 | | Physical Sciences (CHM 115) |
| | MTH 302 | | Philosophy and Literature (consider PHI 102) |
| | CHM 115 | | Arts |
| | PHY 230 | | Mathematical Sciences (MTH 201) |
| | PHY 231 or 234 | | Social Behavioral Sciences (ECO 210 or 211) |
| | WRT 150 | | Social Behavioral Sciences |
| | EGR 100 | | Historical Analysis (consider HSC 202) |
| | EGR 111 | | U.S. Diversity |
| | EGR 112 | | Global Perspectives |
| | EGR 113 | | 2 Supplemental Writing Skills Courses (prerequisite: WRT 130 or 150) |
| | EGR 185 | | 2 Issues Courses (must have 55+ credits) |
| | 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 Product Design and Manufacturing Engineering major. A list of major elective options is listed in the GVSU Academic Catalog.
- ✓ To declare this emphasis, login to MyBanner, select "Student Records" and then "Change Major."
 - Click on "Change Major 1" and select Product Design and Manufacturing - Design Emphasis.
 - Click "Submit" and then "Change to New Program."

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. PHI 102 in the Philosophy and Literature category
 - b. BIO 328, BIO 338, COM 438, EGR 302, MGT 340, MGT 438, MKT 375, PHI 325 OR PLS 338 in the Issues 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.