

MTH 201 Start, 4 Year Plan

Secondary Admission Required

| 1st Year | | | | | |
|--|--------------|--|-----------|------------------------------|-----------|
| Fall | | Winter | | Spring/Summer | |
| *MTH 201: Calculus I | 4 | *MTH 202: Calculus 2 | 4 | | |
| *CHM 115: Chemistry I | 4 | *PHY 230: Physics I | 5 | | |
| *WRT 150: Strategies in Writing or WRT 120 <u>and</u> WRT 130 | 4 | *EGR 113: Intro to CAD/CAM | 1 | | |
| *EGR 100: Intro to Engineering | 1 | *EGR 185: First-Year Engineering Design | 2 | | |
| *EGR 111: Intro to Engineering Graphics | 1 | *EGR 220: Engineering Measure & Data | 1 | | |
| *EGR 112: Applied Programming for EGR | 2 | *STA 220: Statistical Modeling for Engineering | 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 I | 3 |
| *PHY 231 or 234: Physics 2 | 4-5 | *EGR 214: Circuit Analysis I | 3 | General Education | 3 |
| *EGR 209: Mechanics and Machines | 4 | *EGR 215: Circuit Analysis I Lab | 1 | | |
| *EGR 226: Microcontroller Programming | 3 | *EGR 309: Machine Design I | 3 | | |
| *EGR 227: Microcontroller Program. Lab | 1 | *EGR 310: Machine Design I Lab | 1 | | |
| *EGR 289: Engineering Professionalism | 1 | *EGR 312: Dynamics | 3 | | |
| Total | 17-18 | Total | 15 | Total | 6 |
| 3rd Year ~ Admission Required | | | | | |
| Fall | | Winter | | Spring/Summer | |
| EGR 250: Materials Science & Engineering | 3 | EGR 390: Engineering Co-Op 2 | 3 | CHM 230: Intro Orgo/Biochem | 4 |
| EGR 251: Materials Sci & Engineering Lab | 1 | General Education | 3 | EGR 362: Thermal & Fluid Sys | 4 |
| EGR 346: Mechatronics & Controls | 4 | | | General Education | 3 |
| BMS 202: Anatomy and Physiology | 4 | | | General Education | 3 |
| General Education | 3 | | | General Education | 3 |
| Total | 15 | Total | 6 | Total | 17 |
| 4th Year ~ Admission Required | | | | | |
| Fall | | Winter | | Spring/Summer | |
| EGR 490: Engineering Co-Op 3 | 3 | EGR 485: Senior Project I | 1 | EGR 486: Senior Project 2 | 2 |
| EGR 453: Biomedical Materials | 3 | EGR 403: Medical Device Design | 3 | ECO 210 or 211: Economics | 3 |
| | | EGR 435: Math Models of Physiologic Systems | 3 | Biomedical EGR Elective | 3 |
| | | EGR 447: Mechanics of Human Motion | 3 | General Education | 3 |
| | | Biomedical Engineering Elective | 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

| √ | BME-ME 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 (BMS 202) |
| | 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 312 | | |

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 the Engineering Foundation courses. Engineering 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:

- 1) An emphasis area is required for the Biomedical Engineering major. A list of major elective options is listed in the GVSU Academic Catalog.
- 2) To declare this emphasis, login to MyBanner, select "Student Records" and then "Change Major."
- 3) Click on "Change Major 1" and select Biomedical Engineering – Mechanical Emphasis.
- 4) Click "Submit" and then "Change to New Program."
- 5) Other emphasis areas within Biomedical Engineering include Electrical and Product Design and Manufacturing.

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.**