

Bachelor of Science in Engineering (B.S.E.)
Biomedical Engineering: Mechanical 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 220: EGR Measurement and Data | 1 | *EGR 215: Circuit Analysis 1 Lab | 1 | | |
| *EGR 209: Mechanics and Machines | 4 | *EGR 309: Machine Design 1 | 3 | | |
| *EGR 226: Microcontroller Program | 3 | *EGR 310: Machine Design 1 Lab | 1 | | |
| *EGR 227: Microcontroller Program Lab | 1 | *EGR 312: Dynamics | 3 | | |
| *EGR 289: EGR Professionalism | 1 | | | | |
| Total | 16-17 | Total | 15 | Total | 3 |
| 3rd Year ~ Admission Required | | | | | |
| Fall | | Winter | | Spring/Summer | |
| EGR 250: Materials Science & EGR | 3 | EGR 390: Engineering Co-op 2 | 3 | EGR 362: Thermal & Fluid Sys | 4 |
| EGR 251: Materials Science & EGR Lab | 1 | | | BMS 202: Anatomy & Physiology | 4 |
| EGR 346: Mechatronics & Controls | 4 | | | ECO 210 or 211: Economics | 3 |
| CHM 230: Intro Organic & Biochemistry | 4 | | | Supplemental Writing Skills | 3 |
| HNR 201: Live. Learn. Lead | 3 | | | | |
| Total | 15 | Total | 3 | Total | 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 |
| EGR 453: Biomedical Materials | 3 | EGR 403: Medical Device Design | 3 | BME Elective | 3-4 |
| | | EGR 435: Math. Model Phys. Systems | 3 | HNR 350: Integrative Seminar | 3 |
| | | EGR 447: EGR Mech Human Motion | 3 | | |
| | | BME Elective | 3-4 | | |
| Total | 6 | Total | 13-14 | Total | 8-9 |

- 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

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| √ | BME-ME 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 | | |
| | EGR 113 | | |
| | EGR 185 | | |
| | 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 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:

- 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.

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.