GRAND VALLEY STATE UNIVERSITY
SCHOOL OF ENGINEERING

Registration Information
(SS25, F25, W26)

Contents

Co-op I/II/III Students

Co-op students should review the School of Engineering student resources at the following link to ensure that co-op planning is proactive, timely, and in accordance with the established co-op policies: Co-op Student Resources. Note, the co-op resources have recently been updated to include detailed contact information, as well as the new Handshake process for student registration and employer confirmation.

Professionalism and accountability are major course objectives of the co-op program. Students are expected to provide timely email responses regarding all co-op surveys, meetings, and course enrollment inquiries, including work placement or supervisor contact information. The industry standard email response time is **within 24 hours after receipt**. All students enrolled in the co-op program are expected to maintain this level of professionalism to ensure that co-op records are accurately maintained.

If an academic plan of study is revised and approved with the upper-division academic advisor (program chair or designee), and there is an associated impact to the co-op plan, please notify the Sebastian Chair, Diane LaFreniere (lafrenid@gvsu.edu).

Students should not *self-advise* regarding co-op rotations, as the graduation timeline may be at risk of being significantly affected. Students enrolled in a co-op course are expected to be proactive in all communications with the upper division academic advisor, Sebastian Chair (co-op coordinator), and workplace supervisor regarding mandatory co-op rotation scheduling.

The School of Engineering Co-op Coordinator (Ethan Tanis, taniset@gvsu.edu), will host individual or group advising sessions for those interested in developing a career plan for securing employment.

- **Securing Co-op Employment** – securing co-op employment and (or) developing career search materials.
- **Negotiating Co-op Offers** – negotiating job offers or the terms of the employment.

School of Engineering co-op advising sessions allows students the opportunity to ask questions related to the required academic or professional components of the co-op program:

* **Co-op Related Academics 101** *(90-minute group session)*
  Thursday, March 20, 3:00 PM - 4:15 PM
  An information session regarding the academic component of the co-op courses, specifically for students who are unable to attend the co-op start-up meeting on **Friday, April 4 (11:00 am - 12:30 pm or 1:00 pm - 2:30 pm)** to review the Co-op I course syllabus and requirements. Note, the online meeting link for the Friday, April 4h start-up meetings will be emailed to students in mid-March. Contact Diane LaFreniere, Sebastian Chair, lafrenid@gvsu.edu for an online appointment.

* **Career Exploration 101** *(20-minute group session)*
  Thursday, March 20, 4:20 PM - 4:40 PM
  Advising related to engineering positions, responsibilities, and career paths (prerequisite is a co-op student agreement, which is received upon co-op approval and submitted via the Handshake employment portal). Contact Ethan Tanis, Co-op Coordinator, taniset@gvsu.edu for an online appointment.

Note:

- All full-time, off-sequence co-op students (initial co-op start date is not aligned with the summer semester) must have a program-approved study plan that includes three co-op rotations. The approved study plan will include a fall EGR 490 rotation, following enrollment in EGR 485/486. The approved study plan must be signed by the upper division academic advisor (Program chair or designee) and submitted to the Sebastian Chair, Diane LaFreniere, lafrenid@gvsu.edu, prior to co-op course enrollment.

- Full-time co-op students can register for a maximum of four EGR or CIS credits during the evening hours (4:00 PM. or later). Note, this policy does not apply to EGR 302, 304, and 406.

- Students are not permitted to enroll in a co-op course and EGR 485/486 (senior project) concurrently.

To discuss extenuating circumstances or the need for an alternative work plan, please email the Sebastian Chair, Diane LaFreniere at lafrenid@gvsu.edu.

To discuss employment engagement, recruitment, negotiation and other subjects regarding to securing co-op or full-time employment, contact the School of Engineering Co-op Coordinator, Ethan Tanis, taniset@gvsu.edu.

Summer Advising Tips for Pre-Secondary Admit Students

Declared EGR majors can choose to lighten the Fall and Winter semester course load by taking required engineering foundation or general education classes during the summer term. The classes available in Summer 2025 are shown below.

First-year GVSU students, will not be able to register for any courses until their First Year Advising Appointment has been completed.

Summer 2025 Classes of Interest to Pre-Engineering Students
(All classes meet the entire 14-week semester unless otherwise noted.)

Subj	Crse	Sec	Cr	Title	Days	Start	End	Location
EGR	**108**	***01***	2	App Prog for Engineers – Stretch II	TR (1st 6 wks)	1:00 PM	4:20 PM	IDC 135
EGR	**185**	***10***	2	First-Year Engineering Design	F	1:30 PM	2:45 PM	IDC 135
EGR	**185**	***101***	0	First-Year Engineering Design	F	3:00 PM	5:20 PM	IDC 135
EGR	**214**	***10***	3	Circuit Analysis I	TR	4:00 PM	5:30 PM	KEN 342
EGR	**215**	***101***	1	Circuit Analysis I	R	6:00 PM	9:20 PM	KEN 236
EGR	**223**	***01***	3	Probability and Signal Analysis	MW	4:00 PM	6:15 PM	DEV 119E
EGR	**226**	***10***	3	Microcontroller Programming and Applications	MW	4:00 PM	5:30 PM	KEN 322
EGR	**227**	***101***	1	Microcontroller Programming and Applications Lab	W	6:00 PM	9:20 PM	KEN 228
EGR	**257**	***10***	4	Electronic Materials and Devices	TR	4:00 PM	5:30 PM	KEN 244
EGR	**257**	***901***	0	Electronic Materials and Devices	R	6:00 PM	9:20 PM	KEN 135
EGR	**309**	***10***	3	Machine Design I	TR	4:00 PM	5:30 PM	KEN 350
EGR	**310**	***101***	1	Machine Design I Laboratory	T	6:00 PM	9:20 PM	KEN 242
EGR	**312**	***01***	3	Dynamics	MW (10 wks)	4:00 PM	5:50 PM	KEN 122

Other courses of interest:

- CIS 162 Computer Science I
- CIS 163 Computer Science II
- CHM 115 Principles of Chemistry I (1st 6 Weeks)
- MTH 201 Calculus I (1st 6 Weeks or asynchronous online for full spring/summer)
- MTH 202 Calculus II (2nd 6 Weeks)
- MTH 203 Calculus III (2nd 6 Weeks synchronously online)
- PHY 230 Principles of Physics I (1st 6 Weeks)
- PHY 231 Principles of Physics II (2nd 6 Weeks)
- STA 220 Statistical Modeling for Engineers (1st 6 Weeks)

SWS Requirement: *EGR 302: Engineering Decision Making in Society* is an SWS course that is offered in the Fall semester and will meet the engineering ethics requirement, as well as a general education Issues course in the Information, Innovation or Technology Issue category. Otherwise, there are general education courses that can be used to meet the two SWS requirements for graduation. Please see an academic advisor for more information.

Special Notes:

- The above classes are subject to change.
- The science and mathematics classes meet for only part of the summer and require 25-40 hours of meeting time and homework per week.

Email egr.advising@gvsu.edu with any pre-secondary admission advising questions.

Advising Tips for Biomedical Engineering Students

Pending Admit Students
You will be able to enroll in Summer 2025 classes when your enrollment period opens. However, you will not be allowed to enroll in upper division engineering courses until you have been admitted to the engineering program. If you are admitted at the end of Winter 2025, you will be able to enroll 1 – 2 business days after you receive your acceptance letter in late April/early May. If you are admitted at the end of Summer 2025, you will be able to enroll 1 – 2 business days after you receive your acceptance letter in mid-August.

Engineering Ethics Course: *EGR 302: Engineering Decision-Making in Society*
Description: Engineering decisions affect almost everyone in the modern world. This course studies the potential broad impacts of these decisions within social, economic, environmental, and global contexts. This course, through case-studies, places engineering in a wider context, emphasizing the application of ethical models to recognize professional responsibilities in engineering situations.

This SWS course offered in the fall semester fulfills the Engineering Ethics requirement and is a course in the *Information, Innovation or Technology* Issue.

BIO 328: Biomedical Ethics is another course to consider for fulfilling the engineering ethics requirement. BIO 328 is a course in the *Health* Issue that is offered every semester with SWS sections.

Registration Notes:

- Students pursuing the Biomedical Engineering (BME) major must choose between three emphasis areas – Electrical, Mechanical, or Product Design and Manufacturing.
- All BME students must take the following courses: BMS 202, CHM 230 or CHM 234, EGR 403 (480 in winter 2026), and EGR 435.
- Students are advised to take Medical Device Design (EGR 403/480) during the winter semester of the junior year during co-op if possible. This is necessary for BME students with the Product Design and Manufacturing emphasis as this course is a prerequisite for EGR 401, which is taken during the winter semester of the senior year. This is advisable for students pursuing the Mechanical and Electrical emphases as this will make the winter semester of the senior year more manageable.
- CHM 230 (Introduction to Organic and Biochemistry) is being replaced by CHM 234 (Introductory Biochemistry). Either will count towards the BME major, but CHM 230 will be offered for the last time in summer 2025.

Electrical Emphasis

BME students pursuing the **Electrical** emphasis must complete the following required courses: EGR 314, EGR 315, EGR 323, EGR 326, and EGR 434. **Note that EGR 434 has been moved from fall semester to winter semester.**

BME students pursuing the **Electrical** emphasis must complete **two** elective courses. (Note: older catalogs indicate that three electives are required, but it has been changed to two starting with the 2024-2025 catalog year. Update to a more recent catalog year to get your myPath to show this correctly). For this major, the electives offered during the 2025-2026 academic year are shown below. Please check Banner for any last-minute additions or changes.

Elective Courses for BME students – Electrical Emphasis

Semester	Course	Title
Summer 2025	EGR 343	Applied Electromagnetics
	EGR 424	Design of Microcontroller Applications
	EGR 455 (10 wks)	Automatic Control
Fall 2025	EGR 415	Communication Systems
	EGR 457	Fundamentals of Nanotechnology
Winter 2026	EGR 418	Radio Frequency Systems
	EGR 426	Integrated Circuit Systems Design
	EGR 433	Electronic Instrumentation for Biomedical Applications
	EGR 436	Embedded Systems Interface
	EGR 443	Electromagnetic Compatibility

Mechanical Emphasis

BME students pursuing the **Mechanical** emphasis must complete the following required courses: EGR 309, EGR 310, EGR 346, EGR 362, EGR 447, and EGR 453. (Note: starting with the 2024-2025 catalog, EGR 309/310 are post-secondary admission courses and EGR 250/251 are pre-secondary admission courses. All BME students with a mechanical emphasis should take EGR 250/251 before secondary admission. Update to a more recent catalog year to get your myPath to show this correctly).

BME students pursuing the **Mechanical** emphasis must complete **two** elective courses. For this major, the electives offered during the 2025-2026 academic year are shown below. Please check Banner for any last-minute additions or changes.

Elective Courses for BME students – Mechanical Emphasis

Semester	Course	Title
Summer 2025	EGR 329	Introduction to Finite Element Analysis
	EGR 350 (10 wks)	Vibration
	EGR 405	Materials Failure Analysis and Selection
	EGR 409	Machine Design II
	EGR 445 (10 wks)	Robotics Systems Engineering
	EGR 450	Manufacturing Control Systems
Fall 2025	EGR 367/368	Manufacturing Processes/ Laboratory
	EGR 450	Manufacturing Control Systems
Winter 2026	EGR 311	Intermediate Computer Aided Design and Manufacturing
	EGR 352	Kinematics and Dynamics of Machinery
	EGR 367/368	Manufacturing Processes/ Laboratory
	EGR 450	Manufacturing Control Systems
	EGR 465	Computational Fluid Dynamics (CFD)
	EGR 468	Heat Transfer

Product Design and Manufacturing Emphasis

BME students pursuing the **Product Design and Manufacturing** emphasis must complete the following required courses: EGR 345, EGR 362, EGR 367, EGR 368, EGR 401, and EGR 453.

BME students pursuing the **Product Design and Manufacturing** emphasis must complete **two** elective courses. For this major, the electives offered during the 2025-2026 academic year are shown below. Please check Banner for any last-minute additions or changes.

Elective Courses for BME students – Product Design and Manufacturing Emphasis

Semester	Course	Title
Summer 2025	EGR 405	Materials Failure Analysis and Selection
	EGR 409	Machine Design II
	EGR 440	Introduction to Production
	EGR 441	Quality, Economics, and Operations
	EGR 445 (10 wks)	Robotics Systems Engineering
	EGR 450	Manufacturing Control Systems
Winter 2026	EGR 311	Intermediate Computer Aided Design and Manufacturing
	EGR 404	Polymer Science and Processing
	EGR 447	Engineering Mechanics of Human Motion
	EGR 450	Manufacturing Control Systems
	EGR 465	Computational Fluid Dynamics (CFD)

For more information about the Biomedical Engineering Program, please contact Dr. Blake Ashby at ashbybl@gvsu.edu.

Combined BSE/MSE: Junior students with a GPA of 3.3 or more are invited to consider a combined degree. Click here for more info.

Advising Tips for Biomedical Engineering Minor

Students pursuing a minor in Biomedical Engineering (BME) must complete six courses: four required courses and two electives. These courses are listed below.

Required Courses:

- BMS 202 Anatomy and Physiology, 4 Credits, Gen Ed LS
- CHM 115 Principles of Chemistry I, 5 Credits
- CHM 230 Introduction to Organic and Biochemistry, 4 Credits or CHM 234 Introductory Biochemistry (CHM 234), 4 Credits (Either will count towards the BME minor, but CHM 230 will be offered for the last time in summer 2025.)
- EGR 435 Mathematical Modeling of Physiological Systems, 3 Credits

Elective Courses (choose any **two** courses from among the following)**:**

- EGR 403 Medical Device Design, 3 Credits (ME and PDM senior elective)
- EGR 432 Biomedical Imaging and Image Processing, 3 Credits (EE and CE senior elective)
- EGR 433 Electronic Instrumentation for Biomedical Applications, 3 Credits (EE senior elective)
- EGR 434 Bioelectric Potentials, 3 Credits (EE senior elective)
- EGR 447 Engineering Mechanics of Human Motion, 3 Credits (ME and PDM senior elective)
- EGR 453 Biomaterials, 3 Credits (ME and PDM senior elective)
- EGR 465 Computational Fluid Dynamics, 4 credits (ME senior elective)

The course offerings for this minor offered during the 2025-2026 academic year are shown below. Other elective courses not listed below may be offered in subsequent years.

Biomedical Engineering Minor Course Offerings

Semester	Course	Title
Summer 2025	BMS 202	Anatomy and Physiology
	CHM 115 (1st 6 wks)	Principles of Chemistry I
	CHM 230 (2nd 6 wks)	Introduction to Organic and Biochemistry
Fall 2025	BMS 202	Anatomy and Physiology
	CHM 115	Principles of Chemistry I
	CHM 234	Introductory Biochemistry
	EGR 453	Biomedical Materials
Winter 2026	BMS 202	Anatomy and Physiology
	CHM 115	Principles of Chemistry I
	CHM 234	Introductory Biochemistry
	EGR 480 (EGR 403)	Medical Device Design
	EGR 433	Electronic Instrumentation for Biomedical Applications
	EGR 434	Bioelectrical Potentials
	EGR 435	Mathematical Modeling of Physiologic Systems
	EGR 447	Engineering Mechanics of Human Motion
	EGR 465	Computational Fluid Dynamics

For more information about the Biomedical Engineering minor, please contact Dr. Blake Ashby at ashbybl@gvsu.edu.

Advising Tips for Computer Engineering Students

Pending Admit Students
You will be able to enroll in Summer 2025 classes when your enrollment period opens. However, you will not be allowed to enroll in upper division engineering courses until you have been admitted to the engineering program. If you are admitted at the end of Winter 2025, you will be able to enroll 1 – 2 business days after you receive your acceptance letter in late April/early May. If you are admitted at the end of Summer 2025, you will be able to enroll 1 – 2 business days after you receive your acceptance letter in early August.

Engineering Ethics Course: *EGR 302: Engineering Decision-Making in Society*
Description: Engineering decisions affect almost everyone in the modern world. This course studies the potential broad impacts of these decisions within social, economic, environmental, and global contexts. This course, through case-studies, places engineering in a wider context, emphasizing the application of ethical models to recognize professional responsibilities in engineering situations.

This SWS course fulfills the Engineering Ethics requirement and is an Issues Course in the Information, Innovation or Technology Issue.

Registration Notes:

- Pre-secondary admit Computer Engineering (CE) students should take *CIS 159: Intro to Java for C Programmer (1 credit)* in Fall of 2025 rather than *CIS 162: Computer Science I (4 credits).* Please discuss with Dr. Parikh if you feel you should take CIS 162 instead.
- Pre-secondary admit CE students should take *EGR 224: Introduction to Digital System Design (3 credits – prerequisite of EGR 112, C or better)* in the Fall of 2025.
- CE juniors should take CIS 263, CIS 350 and CIS 241 during the summer.
- CE students must complete **three** elective courses from those listed below. A minimum of two courses must be from the core CE electives, and the third can be from the CE, EE, BME, or CIS electives.

  Core Computer Engineering Electives
  - EGR 424 – Design of Microcontroller Applications (4 credits)
  - EGR 425 – RISC Architecture (4 credits)
  - EGR 426 – Integrated Circuit Systems Design (4 credits)
  - EGR 436 – Embedded Systems Interface (4 credits)

  Electrical Engineering Electives
  - EGR 323 – Signals and Systems Analysis (3 credits)
  - EGR 423 – Digital Signal Processing Systems (4 credits)*

  Biomedical Engineering Electives
  - EGR 432 - Biomedical Imaging and Image Processing (3 credits)

  Computer Science Electives
  - CIS 457 – Data Communications (4 credits)

  **This course is not offered in the 2025-2026 academic year.*

CE Students must complete **three** elective courses. For this major, the electives offered during the 2025-2026 academic year are shown below. Please check Banner for any last-minute additions or changes.

Elective Courses for Computer Engineering Students

Semester	Course	Title
Summer 2025	EGR 323	Signals and Systems
	EGR 424 (10 wks)	Design of Microcontroller Applications
	EGR 425 (10 wks)	RISC Architecture
Fall 2025	CIS 457	Data Communications
Winter 2026	EGR 426	Integrated Circuit Systems Design
	EGR 436	Embedded Systems Interface
	CIS 457	Data Communications

For more information about the Computer Engineering Program, please contact Dr. Chirag Parikh at parikhc@gvsu.edu.

Combined BSE/MSE: Junior students with a GPA of 3.3 or more are invited to consider a combined degree. Click here for more info.

Biomedical Engineering Minor Click here for more info.

SWS Requirement: *EGR 302: Engineering Decision Making in Society* is an SWS course that is offered in the Fall semester and will meet the engineering ethics requirement, as well as a general education Issues course in the Information, Innovation or Technology Issue category. Otherwise, there are general education courses that can be used to meet the two SWS requirements for graduation. Please see an academic advisor for more information.

Advising Tips for Electrical Engineering Students

Pending Admit Students
You will be able to enroll in Summer 2025 classes when your enrollment period opens. However, you will not be allowed to enroll in upper division engineering courses until you have been admitted to the engineering program. If you are admitted at the end of Winter 2025, you will be able to enroll 1 – 2 business days after you receive your acceptance letter in late April/early May. If you are admitted at the end of Summer 2025, you will be able to enroll 1 – 2 business days after you receive your acceptance letter in early August.

Engineering Ethics Course: *EGR 302: Engineering Decision-Making in Society*
Description: Engineering decisions affect almost everyone in the modern world. This course studies the potential broad impacts of these decisions within social, economic, environmental and global contexts. This course, through case-studies, places engineering in a wider context, emphasizing the application of ethical models to recognize professional responsibilities in engineering situations. This SWS course fulfills the Engineering Ethics requirement and is a course in the Information, Innovation or Technology Issue.

Registration Notes:
Students in the Electrical Engineering (EE) major should complete **four** elective courses from the lists below. A minimum of three courses must be from the core EE electives. The fourth course may be from the CE, BME, ME, or core EE electives.

Core EE Electives
- EGR 415 - Communication Systems (4 credits)
- EGR 418 - Radio Frequency Systems (4 credits)
- EGR 423 - Digital Signal Processing Systems (4 credits) *
- EGR 430 - Electromechanics (4 credits)
- EGR 436 - Embedded Systems Interface (4 credits)
- EGR 443 - Electromagnetic Compatibility (4 credits)
- EGR 455 - Automatic Control (4 credits)
- EGR 457 - Fundamentals of Nanotechnology (4 credits)
- EGR 458 - Introduction to Fiber Optics (4 credits)*

Computer Engineering Electives
- EGR 424 - Design of Microcontroller Applications (4 credits)
- EGR 425 - RISC Architecture (4 credits)
- EGR 426 - Integrated Circuit Systems Design (4 credits)

Biomedical Engineering Electives
- EGR 432 - Biomedical Imaging and Image Processing (3 credits) *
- EGR 433 - Electronic Instrumentation for Biomedical Applications (3 credits)
- EGR 434 - Bioelectric Potentials (3 credits)

Manufacturing Engineering Electives
- EGR 450 - Manufacturing Control Systems (4 credits)

**These courses are not offered in the 2025-2026 academic year.*

For the Electrical Engineering (EE) major, the electives offered during the 2025-2026 academic year are shown below. Please check Banner for any last-minute additions or changes.

Electives for Electrical Engineering Students

Semester	Course	Title
Summer 2025	EGR 425 (10 wks)	RISC Architecture
	EGR424 (10 wks)	Design of Microcontroller Apps
	EGR 450	Manufacturing Control Systems
	EGR 455 (10 wks)	Automatic Control
Fall 2025	EGR 415	Communication Systems
	EGR 457	Fundamentals of Nanotechnology
Winter 2026	EGR 418	RF Systems
	EGR 426	Integrated Circuit Systems Design
	EGR 430	Electromechanics
	EGR 433	Electronic Instrumentation for Bio Apps
	EGR 434	Bioelectric Potentials
	EGR 436	Embedded Systems Interface
	EGR 443	Electromagnetic Compatibility
	EGR 450	Manufacturing Control Systems

For more information about the Electrical Engineering Program, please contact Dr. Heidi Jiao at jiaoh@gvsu.edu.

Combined BSE/MSE: Junior students with a GPA of 3.3 or more are invited to consider a combined degree. Click here for more info.

Biomedical Engineering Minor Click here for more info.

SWS Requirement: *EGR 302: Engineering Decision Making in Society* is an SWS course that is offered in the Fall semester and will meet the engineering ethics requirement, as well as a general education Issues course in the Information, Innovation or Technology Issue category. Otherwise, there are general education courses that can be used to meet the two SWS requirements for graduation. Please see an academic advisor for more information.

Advising Tips for Interdisciplinary Engineering Students

Special IE Notes:

- All Interdisciplinary Engineering students should have a program plan approved from the Interdisciplinary Engineering chair before enrolling.

- Some students initially declare Interdisciplinary Engineering (IE) as a placeholder until they figure out what they really want to do – and that is fine.

- ***If you are serious about majoring in IE, you should contact Dr. Ryan Krauss (**kraussry@gvsu.edu**) so that he can work with you to ensure your academic success and timely graduation.***

Pending Admit Students
You will be able to enroll in Summer 2025 classes when your enrollment period opens. However, you will not be allowed to enroll in upper division engineering courses until you have been admitted to the engineering program. If you are admitted at the end of Winter 2025, you will be able to enroll 1 – 2 business days after you receive your acceptance letter in late April/early May. If you are admitted at the end of Summer 2025, you will be able to enroll 1 – 2 business days after you receive your acceptance letter in early August.

Engineering Ethics Course: *EGR 302: Engineering Decision-Making in Society*
Description: Engineering decisions affect almost everyone in the modern world. This course studies the potential broad impacts of these decisions within social, economic, environmental and global contexts. This course, through case-studies, places engineering in a wider context, emphasizing the application of ethical models to recognize professional responsibilities in engineering situations.

This SWS course fulfills the Engineering Ethics requirement and is a course in the Information, Innovation or Technology Issue.

Registration Notes:

- Some students initially declare Interdisciplinary Engineering (IE) as a placeholder until they figure out what they really want to do – and that is fine. If you are serious about majoring in IE, you should contact Dr. Ryan Krauss (kraussry@gvsu.edu) so that he can work with you to ensure your academic success and timely graduation.

Combined BSE/MSE: Junior students with a GPA of 3.3 or more are invited to consider a combined degree. Click here for more info.

Biomedical Engineering Minor Click here for more info.

SWS Requirement: *EGR 302: Engineering Decision Making in Society* is an SWS course that is offered in the Fall semester and will meet the engineering ethics requirement, as well as a general education Issues course in the Information, Innovation or Technology Issue category. Otherwise, there are general education courses that can be used to meet the two SWS requirements for graduation. Please see an academic advisor for more information.

Advising Tips for Mechanical Engineering Students

Pending Admit Students (those starting co-op this summer)
You will be able to enroll in lower division Summer 2025 classes as well as EGR 250 when your enrollment period opens. Additionally, you may enroll in your general education classes. However, YOU WILL NOT BE ALLOWED TO ENROLL IN UPPER DIVISION ENGINEERING COURSES UNTIL YOU HAVE BEEN ADMITTED TO THE ENGINEERING PROGRAM. If you are admitted at the end of Winter 2025, you will be able to enroll 1 – 2 business days after you receive your acceptance letter in late April/early May. If you are admitted at the end of Summer 2025, you will be able to enroll 1 – 2 business days after you receive your acceptance letter in early August. This is true for all engineering students.

Please do not submit override requests for upper division courses until you have waited 2 business days after receiving your notification that you have been admitted to the upper division.

Engineering Ethics Course: *EGR 302: Engineering Decision-Making in Society*
Description: Engineering decisions affect almost everyone in the modern world. This course studies the potential broad impacts of these decisions within social, economic, environmental, and global contexts. This course, through case-studies, places engineering in a wider context, emphasizing the application of ethical models to recognize professional responsibilities in engineering situations.

This SWS course fulfills the Engineering Ethics requirement and is a course in the Information, Innovation or Technology Issue.

Registration Notes:
Students in the Mechanical Engineering (ME) major must complete **three** elective courses. For this major, the electives offered during the 2025-2026 academic year are shown below. Please check the GVSU online schedule for any last-minute additions or changes.

Electives for Mechanical Engineering Students

Semester	Course	Title
Summer 2025	EGR 350 (10 wks)	Vibration
	EGR 405*	Materials Failure Analysis & Selection
	EGR 441*	Economics, Quality, and Operations
	EGR 445 (10 wks)	Robotics Systems Engineering
	EGR 450*	Manufacturing Control Systems
	EGR 475 (11 wks)	Design of HVAC Systems
Fall 2025	EGR 380	GD&T
	EGR 367/368*	Manufacturing Processes
	EGR 450*	Manufacturing Control Systems
	EGR 453	Biomedical Materials
	EGR 463	Alternative Energy Systems & Applications
Winter 2026	EGR 311	Intermediate Computer Aided Design and Manufacturing
	EGR 352	Kinematics and Dynamics of Machinery
	EGR 367/368*	Manufacturing Processes
	EGR 480 (EGR 403)*	Medical Device Design
	EGR 404*	Polymer Science and Processing
	EGR 447	Engineering Mechanics of Human Motion
	EGR 450*	Manufacturing Control Systems
	EGR 465	Computational Fluid Dynamics
	EGR 466	Turbomachinery
	EGR 480*	Fundamentals of Additive Manufacturing

No more than two of these courses may be applied toward fulfilling the elective requirements of the ME major

For more information about the Mechanical Engineering Program, please contact Dr. Wendy Reffeor reffeorw@gvsu.edu.

Combined BSE/MSE: Junior students with a GPA of 3.3 or more are invited to consider a combined degree. Click here for more info.

Biomedical Engineering Minor Click here for more info.

SWS Requirement: *EGR 302: Engineering Decision Making in Society* is an SWS course that is offered in the Fall semester and will meet the engineering ethics requirement, as well as a general education Issues course in the Information, Innovation or Technology Issue category. Otherwise, there are general education courses that can be used to meet the two SWS requirements for graduation. Please see an academic advisor for more information.

Advising Tips for Product Design and Manufacturing Engineering Students

Pending Admit Students

You will be able to enroll in Summer 2025 classes when your enrollment period opens. However, you will not be allowed to enroll in upper division engineering courses until you have been admitted to the engineering program. If you are admitted at the end of Winter 2025, you will be able to enroll 1 – 2 business days after you receive your acceptance letter in late April/early May. If you are admitted at the end of Summer 2025, you will be able to enroll 1 – 2 business days after you receive your acceptance letter in early August.

Engineering Ethics Course: *EGR 302: Engineering Decision-Making in Society*
Description: Engineering decisions affect almost everyone in the modern world. This course studies the potential broad impacts of these decisions within social, economic, environmental, and global contexts. This course, through case-studies, places engineering in a wider context, emphasizing the application of ethical models to recognize professional responsibilities in engineering situations.

This SWS course fulfills the Engineering Ethics requirement and is a course in the Information, Innovation or Technology Issue.

Registration Notes:

General Emphasis

PDM students pursuing the **General** Emphasis must complete **three** elective courses. For this major, the electives offered during the 2025-2026 academic year are shown below. Please check Banner for any last-minute additions or changes.

Elective Courses for Product Design and Manufacturing Engineering Students - General

Semester	Course	Title
Summer 2025	EGR 312 (10 wks)	Dynamics
	EGR 329	Introduction to Finite Element Analysis
	EGR 405	Materials Failure Analysis and Selection
	EGR 409	Machine Design II
	EGR 441	Quality, Economics, and Operations
	EGR 445 (10 wks)	Robotics Systems Engineering
Fall 2025	EGR 453	Biomedical Materials
	EGR 463	Alternative Energy Systems & Applications
	EGR 311	Intermediate
	STA 315	Design of Experiments
Winter 2026	EGR 311	Intermediate CAD/CAM
	EGR 312	Dynamics
	EGR 352	Kinematics and Dynamics of Machinery
	EGR 403	Medical Device Design
	EGR 404	Polymer Science and Processing
	EGR 480	Fundamentals of Additive Manufacturing
	EGR 447	Engineering Mechanics of Human Motion
	STA 315	Design of Experiments

Design Emphasis

PDM students pursuing the **Design** emphasis must complete **two** elective courses. For this major, the electives offered during the 2025-2026 academic year are shown below. Please check Banner for any last-minute additions or changes.

Elective Courses for Product Design and Manufacturing Engineering Students - Design

Semester	Course	Title
Summer 2025	EGR 409	Machine Design II
	EGR 441	Quality, Economics, and Operations
Fall 2025	EGR 453	Biomedical Materials
	STA 315	Design of Experiments
Winter 2026	EGR 311	Intermediate CAD

	EGR 404	Polymer Science and Processing
	EGR 480	Fundamentals of Additive Manufacturing
	EGR 480 (403)	Medical Device Design
	STA 315	Design of Experiments

Manufacturing Systems Emphasis

PDM students pursuing the **Manufacturing Systems** emphasis must complete **two** elective courses. For this major, the electives offered during the 2025-2026 academic year are shown below. Please check Banner for any last-minute additions or changes.

Elective Courses for Product Design and Manufacturing Engineering Students - Manufacturing

Semester	Course	Title
Summer 2025	EGR 445 (10 wks)	Robotics Systems Engineering
Fall 2025	STA 315	Design of Experiments
	MGT 337	Supply Chain Management
Winter 2026	EGR 413	Materials for Energy Storage
	EGR 480	Fundamentals of Additive Manufacturing
	MGT 337	Supply Chain Management
	STA 314	Statistical Quality Methods
	STA 315	Design of Experiments

Robotics and Controls Emphasis

PDM students pursuing the **Robotics and Controls** emphasis must complete **two** elective courses. For this major, the electives offered during the 2025-2026 academic year are shown below. Please check Banner for any last-minute additions or changes.

Elective Courses for Product Design and Manufacturing Engineering Students - Robotics

Semester	Course	Title
Summer 2025	EGR 312 (10 wks)	Dynamics
	EGR 405	Materials Failure Analysis and Selection
	EGR 441	Quality, Economics, and Operations
Winter 2026	EGR 312	Dynamics
	EGR 352	Kinematics and Dynamics of Machinery

For more information about the Product Design & Manufacturing Engineering Program, please contact Dr. Chris Pung at pungc@gvsu.edu.

Combined BSE/MSE: Junior students with a GPA of 3.3 or more are invited to consider a combined degree. Click here for more info.

Biomedical Engineering Minor Click here for more info.

SWS Requirement: EGR 302 – SWS Engineering Decision Making in Society is an SWS course that is offered in the Fall semester and will meet the engineering ethics requirement, as well as a general education Issues course in the Information, Innovation or Technology Issue category. Otherwise, there are general education courses that can be used to meet the two SWS requirements for graduation. Please see an academic advisor for more information.

Advising Tips for the Combined BSE/MSE Program

The combined BSE/MSE program offers current qualified undergraduate students (Junior students with a GPA of 3.3 or more) the opportunity to complete both an undergraduate and graduate degree. Pursuing a combined degree program can reduce the cost and total time required to complete both a bachelor's and a master's degree.

In this program, students enjoy many advantages:

- Time to earn an MSE degree potentially reduced by 50%
- 9 – 11 credits of your MSE courses can be counted towards your BSE.
- Opportunities for Industry Sponsored Graduate Fellowship (IGF) and Internships
- Scholarship and graduate assistantship opportunities

For more information about the Combined BSE/MSE Program, please contact the Graduate Program Director, Dr. Samhita Rhodes at rhodesam@gvsu.edu.