

Interdisciplinary Engineering (Data Science Emphasis)

Grand Valley State University 2020-21 Catalog

MTH 201 Placement – 4 year program

Secondary Admission Criteria

1) A GPA of 2.7 or above in the Engineering Foundation courses. Engineering Foundation courses are designated by an asterisk (*) on this guide.

2) Completion of each course in the Engineering Foundation with a grade of C (2.0) or above, with no more than one repeat.

3) Completion of preparation for placement in the cooperative engineering education course, EGR 289.

1st Semester Fall: 16 credits

*MTH 201	Calculus 1
*WRT 150	Writing Strategies
OR WRT 120/WRT 130	(may change timeline)
*EGR 100	Introduction to Engineering
*EGR 111	Introduction to Engineering Graphics
*EGR 112	Applied Programming for Engineers
*CHM 115	Chemistry 1

2nd Semester Winter: 15 credits

*MTH 202	Calculus 2
*PHY 230	Physics 1
*EGR 113	Introduction to CAD/CAM
*EGR 185	First-Year Engineering Design
*STA 220	Statistical Modeling for Engineers
*EGR 220	Egr Measurement and Data Analysis

Spring/Summer: 6 credits

General Education Courses (Select 2)

3rd Semester Fall: 17-18 credits

*MTH 203	Calculus 3
*PHY 234 or 231	Physics 2
*EGR 209	Mechanics and Machines
*EGR 226	Microcontroller Programming
*EGR 289	Engineering Co-op Preparation

4th Semester Winter: 16 credits

*MTH 302	Linear Algebra and Differential Equations
*EGR 309	Machine Design 1
*EGR 250	Materials Science and Engineering
*EGR 214	Circuit Analysis 1

Spring/Summer Semester: 6 credits

EGR 290	Engineering Co-op 1
STA 216	Intermediate Applied Statistics

5th Semester Fall: 14-15 credits

EGR 345	Dynamic System Modeling and Control
EGR 367	Manufacturing Processes
STA 321	Applied Regression Analysis
OR EGR 435	Math. Model of Phys. Sys. (Winter Only)
CIS 161	Computational Science
OR CIS 162	Computer Science 1

Winter Semester: 6 credits

EGR 390	Engineering Co-op 2
STA 426	Multivariate Data Analysis

6th Semester Spring/Summer: 14 credits

EGR 362	Thermal and Fluid Systems
EGR 440	Introduction to Production
EGR 441	Engineering Economics, Quality Control, and Manufacturing Operations
ECO 210 OR 211	Economics

Fall Semester: 6 credits

EGR 490	Engineering Co-op 3
	General Education Course

7th Semester Winter: 16 credits

EGR 485	Senior Engineering Project 1
CIS 335	Data Mining
CIS 360	Information Management and Science
IE Elective and/or General Education Courses	(Select 3)

8th Semester Spring/Summer: 11 credits

EGR 486	Senior Engineering Project 2
IE Elective and/or General Education Courses	(Select 3)

It is important to meet with a professional advisor in the PCEC Advising Center on a regular basis. The PCEC Advising Center is located in 101 Eberhard Center. Please call 616-331-6025 or go online at www.gvsu.edu/pcec/advising to schedule an appointment.

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Major Notes

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 – Data Science Emphasis**.
- 3) Click “Submit” and then “Change to New Program.”
- 4) Students are required to complete one IE Elective, students may enroll in STA 314, EGR 641 or EGR 642. Please plan ahead! Course descriptions are listed in the [GVSU Academic Catalog](#).

General Education

<u>Category</u>	<u>Completed?</u>	<u>Category</u>	<u>Completed?</u>	<u>Category</u>	<u>Completed?</u>
Physical Sciences (CHM 115)		Mathematical Sciences (MTH 201)		Global Perspectives	
Life Sciences		Social & Behavioral Sciences (ECO 210/211)		U.S. Diversity	
Arts		Social & Behavioral Sciences		Issues	
Philosophy & Literature		Historical Perspectives		Issues	

- 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.

PCEC Advisors

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