Grand Valley State University
Seymour and Esther Padnos College of Engineering and Computing

Bachelor of Science in Engineering (B.S.E.)

Interdisciplinary Engineering: Environmental Engineering Emphasis

MTH 110 Start, 5 Year Plan

Secondary Admission Required

2023 – 2024 Catalog Year

1st Year

Fall		Winter		Spring/Summer	
MTH 110: Algebra	4	MTH 124: Precalculus	5		
*WRT 150: Strategies in Writing or WRT 120 and WRT 130	4	*CHM 115: Chemistry 1	4		
General Education	3	*EGR 100: Intro to Engineering	1		
General Education	3	*EGR 111: Intro to Engineering Graphics	1		
		*EGR 104: Applied Programming 1	2		
Total	**14**	**Total**	**13**		

2nd Year

Fall		Winter		Spring/Summer	
*MTH 201: Calculus 1	4	*MTH 202: Calculus 2	4		
*EGR 108: Applied Programming 2	2	*PHY 230: Physics 1	5		
*EGR 113: Intro to CAD/CAM	1	*EGR 185: First-Year EGR Design	2		
BIO 105: Environmental Science	3	*STA 220: Statistical Modeling for EGR	2		
General Education	3	*EGR 220: EGR Measure & Data	1		
Total	**13**	**Total**	**14**		

3rd Year

Fall		Winter		Spring/Summer	
*MTH 203: Calculus 3	4	*MTH 302: Linear Algebra/Differential EQ	4	EGR 290: Engineering Co-Op 1	3
*PHY 234 or 231: Physics 2	4-5	*EGR 214: Circuit Analysis 1	3	EGR 312: Dynamics (see notes)	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 209: Mechanics & Machines	4	*EGR 310: Machine Design 1 Lab	1		
*EGR 289: EGR Professionalism	1	*EGR 250: Materials Science & EGR	3		
		*EGR 251: Materials Science & EGR Lab	1		
Total 17-18		**Total**	**16**	**Total**	**6**

4th Year ~ Admission Required

Fall		Winter		Spring/Summer	
EGR 345: Dynamic System Modeling or EGR 346: Mechatronics	4	EGR 390: Engineering Co-Op 2	3	EGR 365: Fluid Mechanics	4
EGR 360: Thermodynamics	4			BIO 215: Ecology	4
BIO 121: General Biology 2	4			General Education	3
ECO 210 or 211: Economics	3			General Education	3
Total	**15**	**Total**	**3**	**Total**	**14**

5th 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 463: Alt Energy Sys & Application	3	EGR 437: Environmental EGR **(CU)**	4	General Education	3
		CHM 230: Intro to Orgo & Biochem	4		
		GEO 360: Earth Res. Transition	3		
		General Education	3		
Total	**6**	**Total 15**		**Total**	**5**

- 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
- Courses to be completed at Cornerstone University are designated by a **(CU)** 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

IE – Environmental EGR Foundation Requirements			
MTH 201	MTH 202	MTH 203	MTH 302
WRT 150 or WRT 130	CHM 115	PHY 230	PHY 234 or PHY 231
EGR 100	EGR 111	EGR 112 (or EGR 104+ EGR 108)	EGR 113
EGR 185	EGR 289	EGR 220 + STA 220	EGR 214+215
EGR 226+227	EGR 209	EGR 309 + 310	EGR 250+251

General Education Requirements	
WRT 150: Strategies in Writing (grade of "C" or higher required) **or** WRT 120 and WRT 130 (grade of "C" or higher required in both)	Life Sciences (BIO 105)
Physical Sciences (CHM 115)	Philosophy and Literature
Arts	Mathematical Sciences (MTH 201)
Social Behavioral Sciences (ECO 210 or 211)	Social Behavioral Sciences
Historical Analysis (consider HSC 202)	U.S. Diversity
Global Perspectives	2 Supplemental Writing Skills Courses (prerequisite: WRT 130 or WRT 150)
2 Issues Courses (prerequisite: must have 55+ credits)	

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 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 – Environmental Engineering Emphasis***.
3) Click "Submit" and then "Change to New Program."

Major Notes:

1) This emphasis is offered in cooperation with Cornerstone University (CU). Students pursuing this emphasis will be required to take some of their coursework at CU. Those courses are designated by a **(CU)** on this guide.
2) It is recommended that anyone on a 5 year EGR plan complete the EGR 104+108 stretch option in place of EGR 112. Please speak with an advisor if you have questions about which option is best for you.
3) It is strongly encouraged to move EGR 209 to Spring/Summer of Year 2 so that EGR 312 can move to Fall of Year 2.
4) Consider taking a course that fulfills the U.S. Diversity category and one non-ECO Social and Behavioral Science course.
5) Consider taking a course that fulfills the Global Perspectives category and one Issues course.
6) An ethics course is required in the engineering program. It is recommended to take **ONE** of the following:
    a. EGR 302 (Engineering Decision-Making in Society), BIO 328, BIO 338, COM 438, MGT 340, MGT 438, MKT 375, PHI 325 or PLS 338 in the Issues category
    b. PHI 102 in the Philosophy and Literature category
    c. For Honors College students, the ethics requirement is fulfilled by completion of the Honors Curriculum
7) ECO 210 or 211 is required for the engineering major AND fulfills one Social and Behavioral Science course.
8) 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***.
9) EGR 312 is a required prerequisite for EGR 365. Students need to plan to take this course with EGR 290 OR EGR 390.
    a. Students are strongly encouraged to take EGR 312 with EGR 290. EGR 312 is a challenging course and EGR 365 is only offered in Spring/Summer. If a student waits to take EGR 312 with EGR 390, they will only get one attempt at EGR 312 before needing to take EGR 365.

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.