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

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

Interdisciplinary Engineering: Data Science Emphasis

MTH 201 Start, 4 Year Plan

Secondary Admission Required

2022 – 2023 Catalog Year

1st Year

Fall		Winter		Spring/Summer	
*MTH 201: Calculus I	4	*MTH 202: Calculus 2	4	General Education	3
*WRT 150: Strategies in Writing or WRT 120 and WRT 130	4	*PHY 230: Physics I	5	General Education	3
*CHM 115: Chemistry I	4	*EGR 113: Intro to CAD/CAM	1		
*EGR 100: Intro to Engineering	1	*EGR 185: First-Year EGR Design	2		
*EGR 111: Intro to Engineering Graphics	1	*STA 220: Statistical Modeling for EGR	2		
*EGR 112: Applied Programing for EGR	2	*EGR 220: EGR Measure & Data	1		
Total	**16**	**Total**	**15**	**Total**	**6**

2nd Year

Fall		Winter		Spring/Summer	
*MTH 203: Calculus 3	4	*MTH 302: Linear Algebra/Differential EQ	4	EGR 290: Engineering Co-Op I	3
*PHY 234 or 231: Physics 2	4-5	*EGR 214: Circuit Analysis 1	3	STA 216: Intermediate Applied Stats	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**

3rd Year ~ Admission Required

Fall		Winter		Spring/Summer	
EGR 345: Dynamic System Modeling	4	EGR 390: Engineering Co-Op 2	3	EGR 362: Thermal & Fluid Sys	4
EGR 367: Mfg Processes	3	STA 426: Multivariate Data Analysis	3	EGR 440: Intro to Production	3
EGR 368: Mfg Processes Lab	1			EGR 441: EGR Economics	4
STA 312: Appl Regression Analysis or EGR 435: Math. Model (Winter Only)	3			ECO 210 or 211: Economics	3
CIS 161: Computational Science or CIS 162: Computer Science 1	3-4				
Total	**14-15**	**Total**	**6**	**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
General Education	3	CIS 335: Data Mining	3	IE Elective or General Education	3
		CIS 360: Info Management & Science	3	General Education	3
		IE Elective or General Education	3	General Education	3
		General Education	3		
		General Education	3		
Total	**6**	**Total**	**16**	**Total**	**11**

- 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

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-Data Science 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 (consider BIO 105)
	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 or EGR 104 + EGR 108		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 250+251		

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 – 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.

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***.

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.