**Study Plan for B.S.E., *INTERDISCIPLINARY ENGINEERING* & Renewable Energy emphasis (Windmill/Alternative Cars track)**

**Student Name:** _____

**(2019-20 Catalog)** ***(MTH 201 Placement - 4 Year Program)*** **Minor:** _____ **Student ID#:** *G* _____

| | | | | | Credits | Grade | Semester Completed |
|---|---|---|---|---|---|---|---|
| **1st Year** | **1st Semester: Fall____** | | | | | | |
| | * | MTH | 201 | Calculus I | 4 | | |
| | * | WRT | 150 | Writ Strategies | 4 | | |
| | * | EGR | 106 | Intro to Egr Design I | 3 | | |
| | * | CHM | 115 | Chemistry I | 4 | | |
| | **2nd Semester: Winter ____** | | | | | | |
| | * | MTH | 202 | Calculus II | 4 | | |
| | * | PHY | 230 | Physics I | 5 | | |
| | * | EGR | 107 | Intro to Egr Design II | 3 | | |
| | * | STA | 220 | Statistical Modeling | 2 | | |
| | * | EGR | 220 | Measure/Data Analysis | 1 | | |
| | **Semester: S/S ____** | | | | | | |
| | * | EGR | 226 | MicroCtrl Pgm Appl | 4 | | |
| | % | ECO | 210/211 | Micro/Macroecon | 3 | | |
| **2nd Year** | **3rd Semester: Fall____** | | | | | | |
| | * | MTH | 203 | Calculus III | 4 | | |
| + | * | PHY | 234/1 | Physics II | 4/5 | | |
| | * | EGR | 214 | Circuit Analysis I | 4 | | |
| | * | EGR | 209 | Mech & Mach | 4 | | |
| | * | EGR | 289 | Engrg Co-op Prep | 1 | | |
| | **4th Semester: Winter ____** | | | | | | |
| | * | MTH | 302 | Lin Alg & DEQ | 4 | | |
| | * | EGR | 309 | Machine Design I | 4 | | |
| | * | EGR | 250 | Materials | 4 | | |
| | ~ | EGR | 312 | Dynamics | 3 | | |
| | **Semester: S/S ____** | | | | | | |
| | | EGR | 290 | Engrg Co-op I | 3 | | |
| **3rd Year** | **5th Semester: Fall____** | | | | | | |
| | & | EGR | | 360 or IE Elective | 4 | | |
| | $ | EGR | | 345 or 346 Dyn Sys/Mechatronics | 4 | | |
| | # | IE | Elec | (EGR 352) | 4 | | |
| | • | GE | SBS/US | (SOC 105) | 3 | | |
| | **Semester: Winter ____** | | | | | | |
| | | EGR | 390 | Engrg Co-op II (SWS) | 3 | | |
| | # | IE | Elec. | (EGR 450) | 4 | | |
| | **6th Semester: S/S ____** | | | | | | |
| | & | EGR | | 362 or IE Elective | 4 | | |
| | ~ | EGR | 365 | Fluids | 4 | | |
| | @ | GE | | P & L (PHI 102) | 3 | | |
| | | GE | | Arts _____ | 3 | | |
| **4th Year** | **Semester: Fall____** | | | | | | |
| | | EGR | 490 | Engrg Co-op III | 3 | | |
| | | EGR | 463 | Alternative Energy | 3 | | |
| | **7th Semester: Winter ____** | | | | | | |
| | | EGR | 485 | Sr Project I | 1 | | |
| | ^ | EGR | 406 | Renewable Energy | 3 | | |
| | | EGR | 413 | Matls Energy Storage | 3 | | |
| | # | IE | Elec. | (EGR 465) | 4 | | |
| | ^ | GEO | 360 | Earth Resources | 3 | | |
| | **8th Semester: S/S ____** | | | | | | |
| | | EGR | 486 | Sr Project II | 2 | | |
| | # | IE | Elec. | (EGR 405) | 3 | | |
| | ^ | BIO | 105 | Environmental Science | 3 | | |
| | | GE | GP | _____ | 3 | | |
| | | GE | HP | _____ | 3 | | |

***PCEC Student Services: (616)331-6025***

* Engineering Foundation course
\+ Students may enroll in PHY 231 instead of PHY 234
• Consider taking a course that doubles as SBS and US (See Gen Ed guide for selections)
@ An ethics course is required in the engineering program (PHI 102 or another ethics course in General Education).
% ECO 210 or 211 is required in the engineering curriculum. Also fulfills one SBS GenEd requirement.
& IE required course Energy (must take EGR 360 or EGR 362)
^ Emphasis required general education course. Please check semester availability ASAP!
$ IE required course Systems and Control (EGR 345 or EGR 346)
~ IE Prerequiste course for upper-level electives
# A total of four electives is required. Please see a faculty advisor ASAP to select electives.

**Secondary Admissions Criteria:**
- A GPA of 2.7 or above in the Engineering Foundation courses

- Completion of each course in the Engineering Foundation with a grade of C (2.0) or above, **with no more than one repeat per Foundations course**

- Completion of preparation for placement in the cooperative engineering education, EGR 289

**Recommendation:**

It is strongly encouraged that students do not begin or break a curriculum thread by taking courses at other institutions; e.g., take the MTH 201 equivalent elsewhere, return to GV and continue in the math thread with MTH

| Electives | Credits | Title | Semester | Course Prerequisites | Energy Focus |
|---|---|---|---|---|---|
| EGR 352 | 4 | Kinematics and Dynamics | Fall | EGR 312 | Windmill, Alternative Cars |
| EGR 405 | 3 | Materials Failure Analysis | Summer | EGR 250 | Windmill, Alternative Cars |
| EGR 450 | 4 | Manufacturing Control Systems | Winter | EGR 345 or 346 | Windmill |
| EGR 465 | 4 | Computational Fluid Dynamics | Winter | EGR 365 | Windmill |
| EGR 435 | 3 | Math Modeling of Phy Sys | Winter | MTH 302 | All |