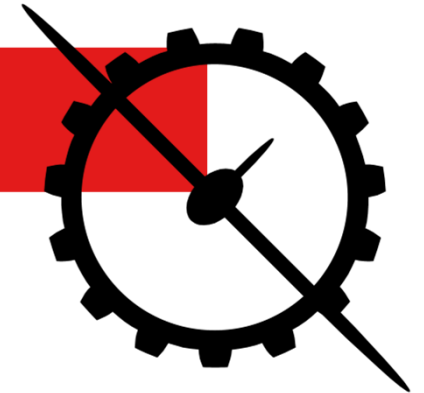


DEPARTMENT OF MECHANICAL AND AEROSPACE ENGINEERING



What You Need to Know About
Year-Long
Mechanical
Engineering
Senior Design

Summary



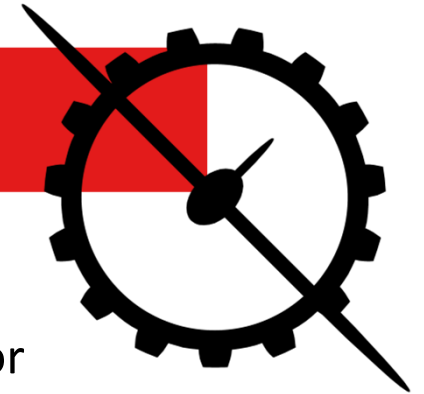
- Beginning fall2019/spring2020, ME capstone senior design will become year-long
- First semester (fall only) will be MAE 415 (3 credits)
- Second semester (spring only) will be MAE 416 (4 credits)
- MAE 415 replaces the ME Design Elective currently showing in first semester senior year of the ME degree plan
- There is no change to the total number of credit hours required for the ME degree (126)

Fall 2019 and Spring/Sum 2020 Graduates



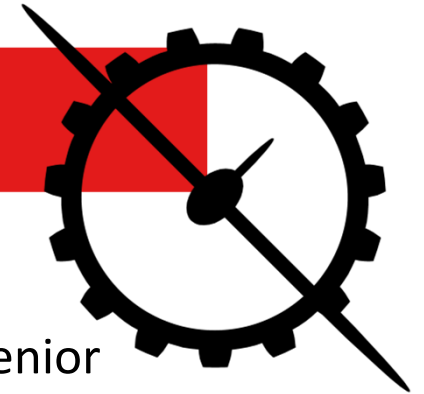
- There will be 2 or 3 one-semester sections of MAE 416 offered in fall 2019 for those graduating in December 2019 (enrollment by permission only)
- There will be 1 one-semester section of MAE 416 offered in spring 2020 for May/July/Aug 2020 graduates who have made unchangeable plans to be away from campus in fall 2019 (co-op, internship, study abroad, etc.) (enrollment by permission only)
- Any senior who is on campus both fall 2019 and spring 2020 and planning to graduate in spring or summer 2020 must enroll in year-long senior design (MAE 415 in fall 2019, MAE 416 in spring 2020)

Fall 2020 Graduates



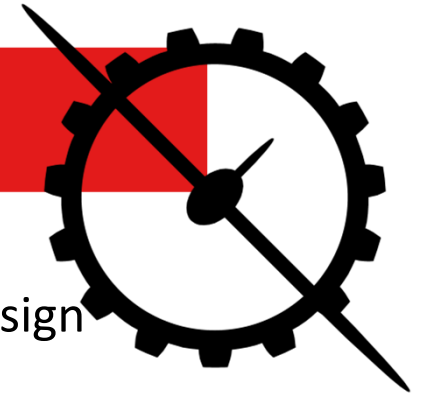
- Every effort should be made to incorporate year-long senior design into fall2019/spring2020 or fall2020/spring2021
- There will be no single-semester MAE 416 sections offered after spring 2020
- Fall 2020 graduates who have planned a one-semester MAE 416 in fall 2019 or spring 2020 will need approval from the MAE academic advising office

Senior Design Requisites



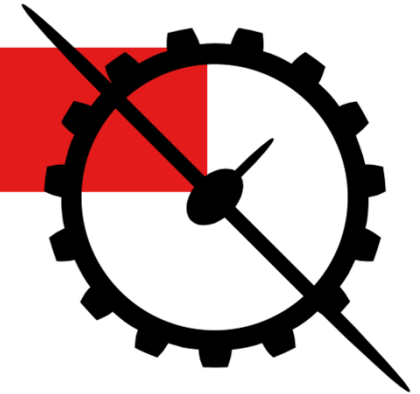
- For fall 2019 ONLY requisites for MAE 415 (first semester senior design) will be either set of (MAE 315 and 316) OR (MAE 302, 308 and 310)
- After fall 2019 requisites for MAE 415 will be all 300-level ME lecture courses (MAE 302, 308, 310, 315, and 316)
- After fall 2019 requisite for MAE 416 (second semester senior design) will be MAE 415
- Most 300-level ME courses are offered in the summer for those who need to complete a requisite for senior design

Entrepreneurship Senior Design



- ME students may choose [Entrepreneurship \(EEP\)](#) senior design in lieu of traditional ME senior design
- Students are not required to be participants of the EEP program to participate in EEP senior design
- EEP senior design is year-long: MAE 482 (3 credit) in fall, MAE 483 (3 credits) + MAE 484 (1 credit) in spring (these substitute for MAE 415 and MAE 416)
- Requisites for this option are a bit looser than for traditional – completion of some ME 300-level lecture courses required for fall2019/spring2020 enrollment (any ECE course requisites can be ignored)

Traditional vs. EEP Senior Design



- Traditional ME senior design
 - Company sponsored, typically 4-5 projects/sponsors per year
 - Work in teams of 5-6 students, multiple teams working on same project
 - Interaction with company throughout year
 - Design, build and test prototype
 - Great opportunity to connect with companies
- Engineering Entrepreneurship (EEP) senior design
 - Multidisciplinary (EE, CPE, ME, BME, CHE, etc.)
 - Work in teams of 4-6 students, teams working on different projects
 - Teams propose idea for project, subject to approval by instructors
 - Develop business/marketing plan concurrently with design and build prototype
 - Great option for those interested in start-ups, business management, entrepreneurship

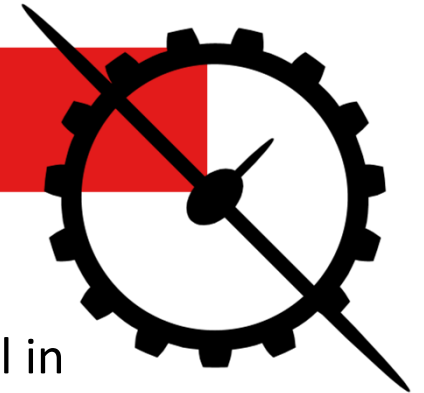
Design Electives: MAE 412 and “old” MAE 415



Students who are eligible for one-semester senior design (MAE 416) in fall 2019 or spring 2020 and need an ME design elective (MAE 412 or “old” MAE 415) will enroll in one of the following:

- Fall 2019
 - **MAE 495-021 *Analysis for Mechanical Engineering Design***: serves as “old” MAE 415 (reserved for fall 2019 graduating seniors, enrollment by permission only, requisites: MAE 315 and 316)
 - **MAE 495-020 *Design of Thermal Systems***: serves as MAE 412 (reserved for fall 2019 graduating seniors, enrollment by permission only, requisites: MAE 302, 308 and 310)
- Spring 2020
 - MAE 412 likely to be offered under its regular number and can be taken as a tech elective by any senior
 - “old” MAE 415 likely to be offered as MAE 495 and can be taken as a tech elective by any senior

Special Cases



- Seniors who already completed MAE 412 and plan to enroll in the year-long senior design (MAE 415 + 416) in fall2019/spring2020 will use MAE 412 as an MAE technical elective
- Seniors who already completed “old” MAE 415 and plan to enroll in year-long senior design in fall 2019/spring 2020 should contact the MAE undergraduate office
- Students with any other special case not covered in this presentation should contact the MAE undergraduate office if academic planning assistance is needed