ENGINEERING (ENGR)

ENGR 175 University Experience-- Engineering 1 Hour
For beginning college freshmen or transfer students with fewer than 24 semester hours of credit. Transition to university experience for engineers students. Topics include study skills, critical thinking, information literacy, exploration of engineering majors and careers, campus resources, effective teamwork skills, and basic computer tools regularly used by engineering students. Engineering design processes and practices are introduced.
Prerequisite(s): MATH 116E (may be taken concurrently) (MATH 116 (may be taken concurrently) or MATH 117 (may be taken concurrently) or MATH 118 (may be taken concurrently) or MATH 136 (may be taken concurrently) or MATH 137 (may be taken concurrently) or MATH 237 (may be taken concurrently) or MATH 116E (may be taken concurrently))
Restriction(s): Students with a semester level of Junior, Sophomore or Senior may **not** enroll.
Recent Term(s) Offered: None

ENGR 295 Introduction to Research Methodology 1 Hour
To familiarize Ogden Research Scholars and other research oriented students with the fundamentals of choosing a research topic, performing a bibliographical search on a subject, topic, classification of instruments, data taking, data reduction, professional ethics and other research oriented topics. The common points of research methodology in the different scientific areas will be accentuated. Examples will be drawn from the various disciplines. Use of computers will be emphasized. (Course does not count toward any major or minor.) Note:Ogden Research Scholar, or 3.2 grade point average at the end of the freshman year, or Ogden College faculty member recommendation is required.
Restriction(s): Students with a semester level of Academy Junior, Academy Senior, Freshman or Sophomore may **not** enroll.

Enrollment is limited to students in Civil Engineering (534) , Civil Engineering-Prep (534P) , Electrical Engineering (537) , Electrical Engineering-Prep (537P) , Mechanical Engineering (543) or Mechanical Engineering-Prep (543P)
Equivalent(s): PHYS 295, BIOL 295, CHEM 295, MATH 295, CS 295
Recent Term(s) Offered: spring 2023

ENGR 360 System Dynamics and Modeling 3 Hours
This course presents an introduction to mathematical modeling of dynamic systems. It takes a unified approach to linear system modeling with lumped parameters for various physical systems including electrical, electro-mechanical, and mechanical systems in both time and frequency domains. An introduction to system identification will be also presented.
Prerequisite(s): EE 210 and MATH 331
Recent Term(s) Offered: fall 2021; fall 2022; fall 2023

ENGR 400 Principles of Systems Engineering 3 Hours
An overview of the field and relevant principles of systems engineering. Topics will prepare students to apply systems engineering theory to the solution of complex system-based engineering problems.
Prerequisite(s): (EE 210 or EM 221 or EM 222) and (STAT 301 or CE 305)
Restriction(s): Students with a semester level of Academy Junior, Academy Senior, Freshman or Sophomore may **not** enroll.

Enrollment is limited to students in Civil Engineering (534) , Civil Engineering-Prep (534P) , Electrical Engineering (537) , Electrical Engineering-Prep (537P) , Mechanical Engineering (543) or Mechanical Engineering-Prep (543P)
Recent Term(s) Offered: spring 2021; fall 2021; fall 2022; summer 2023

ENGR 490 Senior Project 1 2 Hours
Seminar course focused on professional topics including project management and the proposal for a multidisciplinary engineering capstone project. Note: Permission of instructor may be required.
Restriction(s): Students with a semester level of Freshman, Junior or Sophomore may **not** enroll.

Enrollment is limited to students in Civil Engineering (534) , Electrical Engineering (537) or Mechanical Engineering (543)
Course Fee: $120
Recent Term(s) Offered: spring 2021; fall 2021; spring 2022; fall 2022; spring 2023; fall 2023

ENGR 491 Senior Project II 3 Hours
Work in multidisciplinary student teams to execute project designed during ENGR 490. Must be taken in the semester immediately following ENGR 490.
Prerequisite(s): ENGR 490
Recent Term(s) Offered: spring 2021; summer 2021; fall 2021; spring 2022; summer 2022; fall 2022; winter 2023; spring 2023; summer 2023; fall 2023