

# ENGIN. TECH.-ELECTRICAL (ETEE)

---

## **ETEE 1050 - Introduction to Electromechanical Systems (3 Credits)**

The course will introduce the student to the nature of electricity and magnetism, and applications of practical electrical and electromechanical devices and systems. Students will study electrical laws in basic DC and AC circuits, and the behavior of passive and active circuits and components. Students will also be introduced to basic electromechanical components such as relays, switches, motors and generators. The course will emphasize a systems approach to utilizing and testing electromagnetic technology. Both hands-on labs and software simulation will be used to develop an understanding of combining components to form complex systems and the techniques to evaluate the performance of electromechanical systems.

Lecture: 2 hours, Lab: 2 hours

**Prerequisite(s):** MATH 1179 (may be taken concurrently)

## **ETEE 1100 - Engineering Applications of Computers (3 Credits)**

Students will be introduced to microprocessor and microcontroller architectures. Machine, assembly, and high-level languages will be examined. A combination of assembly and a high-level language will be applied to solving problems using a popular microcontroller development environment and target hardware system. Data and graphic information types and formats will be described and used in programs. Acquiring data from internal and external sources, communicating across networks, and directing output to displays and other external interfaces will also be explored. Student lab activities include developing and debugging programs used to control electromechanical devices, measuring operating parameters, collecting data, and displaying information.

Lecture: 2 hours, Lab: 2 hours

**Prerequisite(s):** (MATH 1750 (may be taken concurrently) or MATH 1179) and ETEE 1800

## **ETEE 2500 - Electrical Systems II (Formerly ETEK 2370-Technical Capstone Project) (3 Credits)**

Switching devices including SCRs, TRIACS, DIACS, UJT, and their application in power and motor control circuits are covered in this course. The application of transducers as sensors in industrial control systems is also covered. Use of programmable controllers in industrial control of processes and power circuits is emphasized. The laboratory experiments include SCR and switching devices in the control of power circuits; application of sensors for measurement of heat, position, stress, light and pressure; operation and programming of programmable controllers; measurements in single phase and three phase -Y power circuits, and the operation of motors. Students will apply material learned in this course and in previous courses to a capstone project.

Lecture: 2 hours, Lab: 2 hours

**Prerequisite(s):** ETEE 1500