Electrical / Electronics Technology (EEC)

EEC 1020  DC Fundamentals .................................. 3 Credit Hours

English/ESL Placement: Placement into ENG 1060 or higher (or placement into ESL 2510 or higher for students taking the ESL sequence of courses).

Prerequisite: MAT 1100 with a grade of 'C' or better within the last three years or placement into MAT 1150 within the last two years; or consent of instructor.

This course introduces the basic theories of electricity as they relate to Direct Current such as: the electron theory, Ohm's Law, conductors and insulators, series circuits, parallel circuits, series/parallel circuits, magnetism, electromagnetic devices, electrical nomenclature, units of measurement, resistors, graphic and electrical symbols. Practical laboratory exercises are integrated with the theory to acquaint the student with the basic processes of constructing functional circuits and the correct use of basic measuring instruments, such as analog and digital multimeters. Refer to current Schedule of Classes for software version(s). BILLABLE CONTACT HOURS: 4

EEC 1040  AC Fundamentals .................................. 3 Credit Hours

English/ESL Placement: Placement into ENG 1060 or higher (or placement into ESL 2510 or higher for students taking the ESL sequence of courses).

Prerequisite: EEC 1020
Prerequisite: MAT 1100 with a grade of 'C' or better within the last three years or placement into MAT 1150 within the last two years; or consent of instructor.

This course will provide students with the fundamental knowledge of AC single phase and the comparison with Direct Current. The effects of inductance and capacitance in AC circuits is emphasized and reinforced by problem assignments dealing with phase relationships. The need and methods for power factor correction are explained. Practical lab experiments are integrated with theory to help students analyze and confirm predicted circuit behavior. This includes the correct use of the oscilloscope and wattmeter. Refer to current Schedule of Classes for software version(s). BILLABLE CONTACT HOURS: 4

EEC 1060  Basics of Computer Electronics ............... 4 Credit Hours

Equivalent: ECT 1060

English/ESL Placement: Placement into ENG 1060 or higher (or placement into ESL 2510 or higher for students taking the ESL sequence of courses).

Prerequisite: MAT 1150 or consent of instructor.

This course will introduce the student to the basics of digital electronics as they relate to computer electronics. Topics include: number systems, binary codes, basic logic gates, other logic gates, simplifying logic circuits using Boolean algebra and Karnaugh Maps, code conversion, binary arithmetic and arithmetic circuits, flip-flops, counters, and shift registers. The course will include simulation projects. BILLABLE CONTACT HOURS: 4

EEC 1080  Introduction to Microcontrollers ............... 4 Credit Hours

Equivalent: ECT 2080

English/ESL Placement: Placement into ENG 1060 or higher (or placement into ESL 2510 or higher for students taking the ESL sequence of courses).

Prerequisite: MAT 1150 or consent of instructor.

This course will introduce the student to fundamentals of microcontrollers and basic applications. Topics include: Basic Stamp Microcontroller interfacing with LEDs, pushbuttons, servo motors, variable resistors, 7-Segment display, photo sensors, and piezoelectric transducer. An industry-standard microcontroller will be utilized. BILLABLE CONTACT HOURS: 4

EEC 2000  Electronics I ...................................... 4 Credit Hours

Equivalent: EEC 1270, ELT 1270

English/ESL Placement: Placement into ENG 1060 or higher (or placement into ESL 2510 or higher for students taking the ESL sequence of courses).

Prerequisite: EEC 1040 or consent of instructor.

This course introduces the student to the analysis of basic electronic circuits. Topics include: diodes and applications, special-purpose diodes, bi-polar junction transistors (BJT), transistor bias circuits, BJT amplifiers, power amplifiers, field-effect transistors (FET), and FET amplifier and switching circuits. The course will include simulation projects. BILLABLE CONTACT HOURS: 4