

Electrical Trades Technology (ETT)

ETT 1110 Industrial Electrical Systems 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 and EEC 1040 or consent of instructor.

This course is primarily for industrial electrical apprentices, presenting the broad spectrum of industrial systems that might be encountered in a typical industrial environment. Based on an intensive study of AC polyphase circuits, (reinforced by some laboratory experimentation), the course content is expanded to include: (1) electrical energy sources for industry; (2) distribution systems; (3) industrial control systems; (4) industrial electrical loads; and (5) indicating systems for industry. Field trips to local industries may be incorporated according to relevancy and availability. BILLABLE CONTACT HOURS: 3

ETT 1250 National Electrical Code 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 and EEC 1040 or consent of instructor.

This course is designed to provide students or apprentices with the knowledge and application of the national, state, and local electrical codes for the safe installation of electrical wiring and equipment. The topics considered are scope and purpose, definitions, wiring design and protection, wiring methods and materials, equipment for general use, special occupancies, special equipment, special condition, communication systems, tables and examples, and diagrams for the solutions of practical wiring problems. Students will utilize the National Electrical Code (NEC) and appropriate written and application activities to master the concepts and apply their knowledge of the NEC. This course fulfills forty five (45) contact hours of National Electrical Code Instruction for State of Michigan registered Electrical Apprentices. BILLABLE CONTACT HOURS: 3

ETT 2500 Electrical Machines 4 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 1040 or consent of instructor.

This course is designed to investigate the theory and application of rotating machines commonly found in industrial, commercial, and residential applications: single-phase AC motors, three-phase AC electric motors, and DC electric motors. Students will learn industry relevant skills including operation, installation, analyzing performance, and selecting electric machines for various applications. This is a 'hands-on' course including physical labs. BILLABLE CONTACT HOURS: 5

ETT 2700 Electrical Control Wiring 4 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 1040 or consent of instructor.

This course is designed to prepare students for the installation, maintenance and repair of industrial controls. Students will install control wiring in an electrical panel; installing wiring into limit switches, solenoids, pressure switches, variable-frequency-drive and PLC. Students will work with a 3-phase motor, pushbuttons, switches, valves and a 24 VDC power supply. Finally, students will write some PLC software to verify wiring. This is a 'hands-on' course including labs. BILLABLE CONTACT HOURS: 5