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 1020 and EEC 1040 or consent of instructor.
This course is designed to investigate the theory and application of AC and DC machines. The student will install, wire, maintain, and troubleshoot rotating machines. In addition to all DC motor configures and polyphase motors are studied in detail. Classroom and laboratory evaluation of AC motors will include industrial type induction motors, synchronous motors, capacitor start/run motors, and universal motors. Methodology and characteristics of deceleration and rotation reversal are evaluated. BILLABLE CONTACT HOURS: 3

ETT 2700  Electrical Controls ............................ 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 1020 and EEC 1040 or consent of instructor.
This course is designed to prepare the students for the installation, maintenance and repair of industrial controls. Students will learn to analyze control circuits using ladder logic, wiring diagrams, and PLC-logic. Lab experiments will provide opportunities for constructing and troubleshooting functional control circuits to achieve specific results, such as speed control reversal, acceleration, deceleration, jogging and dynamic braking. Students will learn to select and apply electromechanical and solid state electronic controls and circuit protective devices. BILLABLE CONTACT HOURS: 5