

ELECTRICAL TECHNOLOGY (EET)

EET 100 (3 credit hours)

Electrical Safety in the Workplace

Introduces students to electrical hazards that are associated with working around electricity and the precautions that must be taken to ensure a safe working environment. Focuses on potential hazards that may be encountered on the job such as electric shock and arc flash. Covers personal protective equipment, Lock-Out-Tagout practices, tool safety, equipment safety, and guidelines for working in and around hazardous environments according to OSHA and the NFPA 70E. Lecture: 3 credits (45 contact hours)

Attributes: Technical

Components: LEC: Lecture

EET 110 (4 credit hours)

Voice & Data Installer Level I

Introduces students to the telecommunication industry. Provides entry-level telecommunications cabling installers with the background, knowledge, and basic skills needed to function effectively on the job. Prepares students with little or no telecommunication installation experience. Lecture: 4 credits (75 contact hours).

Pre-requisite: Basic physics/electricity courses are recommended but not required.

Attributes: Technical

Components: LAB: Laboratory, LEC: Lecture

EET 116 (3 credit hours)

Fiber Optics Systems

Provides a technical level of understanding in the areas of networking connectivity, data communications concepts and communication protocols. Introduces students to communications and networking concepts including hardware, software, and transmission media; access methods and protocols; and network configurations area are addressed. Emphasizes local area networks, and installation of a basic network. Lecture: 3.0 credits (45 contact hours).

Pre-requisite: EET 110 with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Attributes: Technical

Components: LEC: Lecture

EET 119 (5 credit hours)

Basic Electricity

Introduces basic electricity concepts applicable to AC and DC circuits pertinent to the electrical technology industry. Provides an in-depth study of Ohm's Law, series, parallel, and series-parallel circuit characteristics. Focuses on providing students with an overview of common electrical safety practices, AC generation, AC and DC Principles, magnetic principles, transformers, capacitors, inductors, and basic electrical testing equipment along with a focus on the construction, calculation, measurement, and troubleshooting of various AC and DC circuits by way of laboratory exercises and classroom lecture. Lecture/Lab: 5.0 credits (45 contact hours Lecture / 60 contact hours Lab)

Pre-requisite: MAT 55 or equivalent placement level or consent of program advisor(s).

Attributes: Technical

Components: LEC: Lecture

EET 127 (1 credit hours)

Electrical Technology Capstone

Serves as the capstone course for the Electrical Technology degree program and all of its concentrations. Integrates prior learning outcomes into a single integrated learning experience. Includes an exit exam that all program graduates must take. Lecture: 1 credit (15 contact hours).

Pre-requisite: Consent of Instructor.

Attributes: Technical

Components: LEC: Lecture

EET 150 (2 credit hours)

Transformers

Focuses on the operation, installation and application of AC single-phase and three-phase transformers. Emphasizes the testing and maintaining transformer equipment, with safety integrated as a core component of the study. Lecture: 2 credits (30 contact hours).

Pre-requisite: (ELT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 151.

Attributes: Technical

Components: LEC: Lecture

EET 151 (1 credit hours)

Transformers Lab

Focuses on the operation, installation and application of AC single-phase and three-phase transformers. Emphasizes the testing and maintaining transformer equipment, with safety integrated as a core component of the study. Pre-requisite (ELT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Lab: 1 credit (30 contact hours).

Co-requisite: EET 150.

Attributes: Technical

Components: LAB: Laboratory

EET 154 (2 credit hours)

Electrical Construction I

Introduces students to the materials and procedures used in construction wiring. Prerequisite: (ELT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Lecture: 2 credits (30 contact hours).

Co-requisite: EET 155.

Attributes: Technical

Components: LEC: Lecture

EET 155 (2 credit hours)

Electrical Construction I Lab

Provides students hands-on experiences with electrical materials and equipment in construction wiring. Prerequisite: (ELT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Laboratory: 2 credits (60 contact hours).

Co-requisite: EET 154.

Attributes: Technical

Components: LAB: Laboratory

EET 198 (2 credit hours)

Practicum

Provides supervised on-the-job work experience related to the student's educational objectives. (Students participating in the Practicum Education program do not receive compensation for their work.) 2.0 credits (150 contact hours).

Pre-requisite: Consent of Electrical Technology program advisor(s).

Attributes: Technical

Components: PCM: Practicum

EET 200 (2 credit hours)**Robotic Systems I**

Introduces students to the history, terminology, theory, and common applications of robotic systems. Provides instruction in basic robot programming techniques, file execution and manipulation, coordinate systems, and file maintenance. Focuses students on robotic system components and preventative maintenance tasks. Prepares students to identify safety devices and utilize safety procedures while working with robotic systems. Integrated Lecture/Lab: 2.0 credits (45 contact hours).

Attributes: Technical

Components: LAI: Integrated Laboratory, LEI: Integrated Lecture

EET 201 (2 credit hours)**Robotic Systems II**

Introduces students to advanced robot programming concepts used in manufacturing. Prepares students to work with various power systems used with a robotic system. Provides a basic introduction of concepts and techniques used to maintain electrical and mechanical robotic systems. Provides an introduction into vision systems used within a manufacturing environment. Prepares students to identify safety devices and utilize safety procedures while working with robotic systems. Integrated Lecture/Lab: 2.0 credits (45 contact hours).

Pre-requisite: EET 200 Robotic Systems I.

Attributes: Technical

Components: LAI: Integrated Laboratory, LEI: Integrated Lecture

EET 202 (2 credit hours)**Robotic Maintenance**

Introduces students to robotic maintenance commonly performed on robots in manufacturing. Prepares students to back up software, isolate all electrical and mechanical power. Prepares students to perform preventative maintenance procedures according to manufacturer specifications. Integrated Lecture/Lab: 2.0 credits (45 contact hours).

Pre-requisite: EET 201 Robotic Systems II OR IMT 200 Industrial Robotics and Robotic Maintenance.

Attributes: Technical

Components: LAI: Integrated Laboratory, LEI: Integrated Lecture

EET 203 (2 credit hours)**Robotic Vision Systems**

Introduces students to vision systems commonly used with robots in manufacturing environments. Prepares students to setup, calibrate, and utilize vision systems. Prepares students to master the robot, create tool and user frames used with the vision system and process, and program the robot to respond to vision results. Provides hands on applications of procedures and utilization of common vision systems found in industry. Integrated Lecture/Lab: 2.0 credits (45 contact hours).

Pre-requisite: EET 201 Robotic Systems II OR IMT 200 Industrial Robotics and Robotic Maintenance.

Attributes: Technical

Components: LAI: Integrated Laboratory, LEI: Integrated Lecture

EET 250 (4 credit hours)**National Electrical Code**

Emphasizes the importance of the National Electrical Code as it applies to electrical installations: electrical safety issues, prevention of fire due to the use of electrical energy, prevention of loss of life and property from the hazards that might arise from the use of electrical energy, and proper selection of electrical equipment for hazardous and non-hazardous environments. Provides a learning resource in the preparation for electrical licensing examinations. Lecture: 4 credits (60 contact hours).

Pre-requisite: ELT 110 or EET 119 with minimum grade of "C" or consent of Electrical Technology Program advisor(s).

Attributes: Technical

Components: LEC: Lecture

EET 252 (2 credit hours)**Electrical Construction II**

Expands the knowledge and skills needed to work in commercial and industrial construction wiring. Lecture: 2 credits (30 contact hours).

Pre-requisite: Consent of Instructor or EET 154.

Co-requisite: EET 253.

Attributes: Technical

Components: LEC: Lecture

EET 253 (2 credit hours)**Electrical Construction II Lab**

Provides hands-on experiences needed to work in commercial and industrial construction wiring. Laboratory: 2 credits (60 contact hours).

Co-requisite: EET 252.

Attributes: Technical

Components: LAB: Laboratory

EET 254 (3 credit hours)**Electrical Construction**

Focuses on the study of materials and procedures and expands the knowledge and skills needed to work in commercial and industrial construction wiring. Lecture: 3 credits (45 contact hours).

Pre-requisite: (ELT 110 OR EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 255.

Attributes: Technical

Components: LEC: Lecture

EET 255 (4 credit hours)**Electrical Construction Lab**

Provides hands-on experiences with electrical materials and equipment related to commercial and industrial construction wiring. Laboratory : 4 credits (120 contact hours).

Pre-requisite: (ELT 110 OR EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 254.

Attributes: Technical

Components: LAB: Laboratory

EET 264 (2 credit hours)**Rotating Machinery**

Focuses on the underlying principles of rotating electrical equipment including DC and AC motors and generating equipment construction, operating applications, and the maintenance of DC and AC motors and generating equipment. Lecture: 2 credits (30 contact hours).

Pre-requisite: (ELT 110 OR EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 265.

Attributes: Technical

Components: LEC: Lecture

EET 265 (2 credit hours)**Rotating Machinery Lab**

Focuses on the principles of operation, application and maintenance of single-phase and three-phase AC motors and AC alternators, DC motors, DC generators. Introduces students to the standards of the National Electrical Code and its use. Lab: 2 credits (60 contact hours).

Pre-requisite: (ELT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 264.

Attributes: Technical

Components: LAB: Laboratory

EET 266 (3 credit hours)**Rotating Machinery and Transformers**

Focuses on the principles of operation and application of single-phase and three-phase AC transformers to include: analysis of voltage, current and power parameters and connection configurations. Gives an in-depth study of direct and alternating current rotating machinery that produces and utilizes electrical energy. Lecture: 3.0 credits (45 contact hours).

Pre-requisite: (ELT 110 OR ELT 119 with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 267.

Attributes: Technical

Components: LEC: Lecture

EET 267 (3 credit hours)**Rotating Machinery and Transformers Lab**

Applies the principles of operation, application and maintenance of single-phase and three-phase AC transformers, motors and alternators, and DC motors and generators. Focuses on the compliance with current National Electric Code standards to insure safe installation methods. Lab: 3.0 credits (90 contact hours)

Pre-requisite: (ELT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 266.

Attributes: Technical

Components: LAB: Laboratory

EET 268 (3 credit hours)**Rotating Machinery Electrical Motor Controls I**

Focuses on the construction, operation and maintenance of DC motors and generators and AC motors and alternators. Addresses the diversity of control devices and applications used in industry today. Emphasizes the importance safety and electrical lockouts are also included. Lecture: 3.0 credits (45 contact hours).

Pre-requisite: (ELT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 269.

Attributes: Technical

Components: LEC: Lecture

EET 269 (4 credit hours)**Rotating Machinery and Motor Controls I Lab**

Provides practical experience in the use of control devices and their applications in industry today. Focuses on the construction, operation and maintenance of AC motors and alternators, and DC motors and generators. Emphasizes the importance of safety and electrical lockouts. Laboratory: 4 credits (120 contact hours).

Pre-requisite: (ELT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 268.

Attributes: Technical

Components: LAB: Laboratory

EET 270 (2 credit hours)**Electrical Motor Controls I**

Addresses the diversity of control devices and applications used in industry today. Emphasizes the importance of safety and electrical lockouts. Lecture: 2 credits (30 contact hours).

Pre-requisite: (ELT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 271.

Attributes: Technical

Components: LEC: Lecture

EET 271 (2 credit hours)**Electrical Motor Controls I Lab**

Provides practical experience in the use of control devices and their applications in industry today. Emphasizes the importance of safety and electrical lockouts. Lab: 2 credit (60 contact hours).

Pre-requisite: (ELT 110 or EET 119) with a minimum grade of "C" or consent of the Electrical Technology program advisor(s).

Co-requisite: EET 270.

Attributes: Technical

Components: LAB: Laboratory

EET 272 (2 credit hours)**Electrical Motor Controls II**

Introduces advanced study of motor controls in industry. Focuses on solid state relays, hall effect sensors, proximity detectors and photo detectors. Provides "hands-on" instruction to include sketching, installing, and troubleshooting the following; three phase controls, variable speed drives using relays as well as solid state devices. Provides an introduction to the installation and programming of Programmable Logic Controllers. Lecture: 2 Credits (30 contact hours).

Pre-requisite: EET 270 OR EET 264 OR EET 268 with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 273.

Attributes: Technical

Components: LEC: Lecture

EET 273 (2 credit hours)**Electrical Motor Controls II Lab**

Provides hands-on experience in advanced studies in electrical controls used in industry including three-phase motor control and variable speed control using solid state devices and Programmable Logic Controllers. Prerequisite: EET 271 or EET 265 or EET 269 with a minimum grade of "C" or consent of Electrical Technology program advisor(s). Laboratory: 2 credits (60 contact hours).

Co-requisite: EET 272.

Attributes: Technical

Components: LAB: Laboratory

EET 274 (3 credit hours)**Electrical Motor Controls**

Addresses the diversity of control devices and applications used in industry today. Emphasizes the importance of safety and electrical lockouts. Focuses on the advanced study of motor controls in industry. Focuses on solid state relays, hall effect sensors, proximity detectors and photo detectors. Examines the sketching, installing and troubleshooting the following: three phase controls, variable speed drives, relays, solid state devices, and programmable controls. Lecture: 3.0 credits (45 contact hours).

Pre-requisite: (ELT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 275.

Attributes: Technical

Components: LEC: Lecture

EET 275 (4 credit hours)**Electrical Motor Controls Lab**

Provides practical experience in the use of control devices and their applications in industry today. Emphasizes the importance of safety and electrical lockouts. Provides hands-on experience in advanced studies in electrical controls used in industry including three-phase motor control and variable speed control using solid state devices and programmable controls. Lab: 4.0 credits (120 contact hours).

Pre-requisite: (ELT 110 or EET 119) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 274.

Attributes: Technical

Components: LAB: Laboratory

EET 276 (2 credit hours)**Programmable Logic Controllers**

Introduces principles and applications of programmable logic controllers including installation, logic fundamentals, and numbering systems; basic programming of inputs, outputs, timers, and counters, comparators, basic data manipulation, and safety circuits of industrial PLCs. Lecture: 2 credits (30 contact hours).

Pre-requisite: EET 270 or EET 268 or EET 274 with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 277.

Attributes: Technical

Components: LEC: Lecture

EET 277 (2 credit hours)**Programmable Logic Controllers Lab**

Provides practical applications of programmable logic controllers including installation, logic fundamentals, and numbering systems; basic programming of inputs, outputs, timers, and counters, comparators, basic data manipulation, and safety circuits of industrial. Lab: 2 credits (60 contact hours).

Pre-requisite: EET 271 or EET 269 or EET 275 with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 276.

Attributes: Technical

Components: LAB: Laboratory

EET 280 (4 credit hours)**Multi-Platform Programmable Logic Controllers**

Introduces students to multiple platforms of programmable logic controllers (PLC). Prepares students to wire, communicate with, program and troubleshoot multiple brands of PLCs. Introduces students to basic programming of inputs, outputs, internal relay, timers, counters, comparator, math and data manipulation instructions. Provides hands on lab application of multiple platforms of programmable logic controllers found in industry. Integrated Lecture/Lab: 4 credits (90 contact hours).

Pre-requisite: EET 276 and EET 277 with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Attributes: Technical

Components: LAI: Integrated Laboratory, LEI: Integrated Lecture

EET 281 (1 credit hours)**Special Problems I**

A course designed for the student who has demonstrated specific special needs. Laboratory: 1 credit (45 contact hours).

Pre-requisite: Permission of Instructor.

Attributes: Technical

Components: LAB: Laboratory

EET 283 (2 credit hours)**Special Problems II**

A course designed for the student who has demonstrated specific special needs. Laboratory: 2 credits (90 contact hours).

Pre-requisite: Permission of Instructor.

Attributes: Technical

Components: LAB: Laboratory

EET 285 (3 credit hours)**Special Problems III**

A course designed for the student who has demonstrated specific special needs. Laboratory: 3 credits (135 contact hours).

Pre-requisite: Permission of Instructor.

Attributes: Technical

Components: LAB: Laboratory

EET 286 (2 credit hours)**Programmable Logic Controllers II**

Focuses on sequencer instructions, shift registers, process control instructions, networking, communications, human to machine interfaces, and troubleshooting techniques used with programmable logic controllers. Lecture: 2 credits (30 contact hours).

Pre-requisite: (EET 276) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 287.

Attributes: Technical

Components: LEC: Lecture

EET 287 (2 credit hours)**Programmable Logic Controllers II Lab**

Provides hands on lab applications dealing with sequencers, shift registers, networks, communication software, human to machine interfaces, analog devices, and troubleshooting. Laboratory: 2 credits (60 contact hours).

Pre-requisite: (EET 277) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Co-requisite: EET 286.

Attributes: Technical

Components: LAB: Laboratory

EET 290 (4 credit hours)**Troubleshooting Industrial Controls and Motors**

Introduces students to basic electrical troubleshooting concepts pertinent to the electrical technology industry. Provides an in-depth study of electrical troubleshooting using schematics, wiring diagrams, digital multi-meters, programmable logic controllers, and motor analyzers. Prepares students to learn how to troubleshoot common electrical faults using a multi-meter. Focuses primarily on providing students with an overview of common electrical faults and how to pinpoint them using a programmable logic controllers. Integrated Lecture/Lab: 4 credits (90 contact hours).

Pre-requisite: (EET 276 and EET 277) with a minimum grade of "C" or consent of Electrical Technology program advisor(s).

Attributes: Technical

Components: LAI: Integrated Laboratory, LEI: Integrated Lecture

EET 295 (4 credit hours)**Alternative Energy Photovoltaic and Wind Electrical Generations Systems**

Introduces students to the methods and equipment necessary for the installation and maintenances of photovoltaic and, wind electrical generation system. Covers the standards and requirements set forth by the National Electric Code and the National Association of Certified Energy Practitioners for alternative energy electrical generation systems. Lecture: 3 credits (45 contact hours). Lab: 1 credit (30 contact hours).

Pre-requisite: (ELT110 or EET119 and EET154 and EET155 and EET252 and EET253 or EET 254 and EET 255 and EET250) or electrical experience and consent of Electrical Technology program advisor(s).

Attributes: Technical

Components: LAB: Laboratory, LEC: Lecture

EET 298 (1-8 credit hours)**Practicum**

Provides supervised on-the-job work experience related to the student's educational objectives. (Students participating in the Practicum do not receive compensation). This course may be taken for 1 - 8 credits. Practicum: 1-8 credits (75-600 contact hours).

Pre-requisite: Consent of Electrical Technology program advisor(s).

Attributes: Technical

Components: PCM: Practicum

EET 299 (1-8 credit hours)**Cooperative Education Program**

Provides supervised on-the-job work experience related to the student's educational objectives. (Students participating in the Cooperative Education program receive compensation for their work). This course may be taken for 1 - 8 credits.

Pre-requisite: Consent of Electrical Technology program advisor(s).

Attributes: Technical

Components: COP: Co-op