

ELECTRICIAN APPRENTICESHIP COURSE SUMMARIES

COURSE ETA3400: ELECTRICAL PRINCIPLES

Students solve trade-related mathematical problems and describe how changes in voltage, current or resistance affect the electrical circuit.

Prerequisite: ETA3900: Apprenticeship Safety

COURSE ETA3405: ELECTRICAL CONCEPTS

Students analyze series and parallel circuits.

Prerequisite: ETA3900: Apprenticeship Safety

COURSE ETA3410: RESISTIVE CIRCUITS

Students connect and analyze a series-parallel resistive circuit.

Prerequisite: ETA3405: Electrical Concepts

COURSE ETA3415: EDISON 3-WIRE SYSTEM

Students describe an Edison 3-wire distribution system commonly found in homes and in commercial establishments.

Prerequisite: ETA3410: Resistive Circuits

COURSE ETA3420: POWER & EFFICIENCY

Students calculate the efficiency of circuits and equipment.

Prerequisite: ETA3405: Electrical Concepts

COURSE ETA3425: BATTERIES & MAGNETISM

Students describe common batteries, including their care and handling and recharging precautions, and develop an understanding of magnetism and the operation of motors, generators, transformers, relays and meters.

Prerequisite: ETA3420: Power & Efficiency

COURSE ETA3430: METERS & CONNECTIONS

Students describe the proper use and care of various electrical meters and describe types of conductors and how and when they are used.

Prerequisite: ETA3420: Power & Efficiency

COURSE ETA3435: SWITCHING CIRCUITS

Students analyze low-voltage switching circuits.

Prerequisites: ETA3410: Resistive Circuits, ETA3430: Meters & Connections

COURSE ETA3440: RELAYS & CONTROLS

Students understand the operation of relays and their control circuits and produce and interpret schematic and wiring diagrams.

Prerequisite: ETA3435: Switching Circuits

COURSE ETA3445: SWITCHES & ALARMS

Students understand the basic concepts and operation of low-voltage switching systems and develop an understanding of how residential alarm and smoke alarm systems are installed and interconnected.

Prerequisites: ETA3410: Resistive Circuits, ETA3440: Relays & Controls

COURSE ETA3450: INTRODUCTION TO CODE

Students develop an understanding of Part I of the Canadian Electrical Code (CEC), which provides standards for the installation of electrical equipment to ensure that buildings are provided with adequate electrical service and that the systems work properly and safely, and understand terms as they apply in the CEC.

Prerequisite: ETA3430: Meters & Connections

COURSE ETA3455: CONDUCTORS & GROUNDING

Students determine the loading of services, feeders and branch circuits for single dwellings; describe components, installation and proper grounding of overhead and underground services to a single dwelling; and understand terms as they apply in the Canadian Electrical Code.

Prerequisite: ETA3450: Introduction to Code

COURSE ETA3460: WIRING & INSTALLATION

Students determine the type of conductors that are required and how they should be installed; understand rules dealing with storage batteries, ground-fault circuit interrupters, arc-fault breakers and branch circuit requirements; and understand the rules ensuring safe installation of lighting equipment.

Prerequisite: ETA3455: Conductors & Grounding

COURSE ETA3465: DIAGRAMS & DRAWINGS

Students identify Class 1 and Class 2 circuits and connect and analyze control circuits that use relays.

Prerequisite: ETA3460: Wiring & Installation

COURSE ETA3470: ETA PRACTICUM A

Students, on the work site, continue to develop and refine those competencies developed in related Career and Technology Studies (CTS) occupational areas, previous practicums and other experiences.

Prerequisite: None

COURSE ETA3475: ETA PRACTICUM B

Students, on the work site, continue to develop and refine those competencies developed in related Career and Technology Studies (CTS) occupational areas, previous practicums and other experiences.

Prerequisite: None

COURSE ETA3480: ETA PRACTICUM C

Students, on the work site, continue to develop and refine those competencies developed in related Career and Technology Studies (CTS) occupational areas, previous practicums and other experiences.

Prerequisite: None

COURSE ETA3485: ETA PRACTICUM D

Students, on the work site, continue to develop and refine those competencies developed in related Career and Technology Studies (CTS) occupational areas, previous practicums and other experiences.

Prerequisite: None

COURSE ETA3900: APPRENTICESHIP SAFETY

Students develop knowledge, skills and attitudes in the practice of workshop health and safety, communication and career planning.

Prerequisite: None