

University of Toledo

Electrical Engineering Technology

Master Syllabus

Course Title: Electrical Drafting

Course Code & Number: EET 1410

Credit Hour Total: 3 Semester Hours

Lecture Contact Hours: 2 **Lab Contact Hours:** 2

Coordinator: Ahmad Farhoud

Texts: AutoCAD Electrical 2011 for Electrical Control Designers, Tickoo and Pandita, CADCIM Technologies.

Software: AutoDesk AutoCAD Electrical

Program Required Course **Prerequisite:** None

A. Course Description

This course concerns the use of electrical and electronic symbols, familiarization with industry standards and codes and familiarization with various schematics and electrical drawings. The coursework is performed on personal computers using CAD software.

B. Related Program Outcomes (a, g, h)

- Apply current software tools to generate electrical schematics and drawings.
- The ability to communicate effectively as evidenced by the ability to create computer generated electrical schematics and drawings.
- Use of latest version of the software to keep up with latest technology.

C. Course Objectives

- Learn the basic commands necessary to utilize the AutoCAD software.
- Learn the basic symbols for the creation of electrical drawings, consistent with industry standards and codes.
- Create computer generated schematics and electrical drawings.

D. Course Outline – Major Content Areas

- Introduction to AutoCAD Electrical 2011
- Working with Projects and Drawings, Electrical Engineering Standards
- Working with Wires
- Creating Ladders
- Schematic Components
- Schematic Editing

- Connectors, Point-to-Point Wiring Diagrams, and Circuits
- Panel Layouts
- Schematic and Panel Reports
- PLC Modules
- Terminals
- Settings, Configurations, and Templates

E. Laboratory Topics

- Exploring AutoCAD Electrical
- Create a new drawing with preferred settings, project description, and exchanging data between two drawings
- Inserting Wires into a Drawing, Modifying Wires, Creating Wire Types
- Inserting a New Ladder, Modifying an Existing Ladder
- Inserting Schematic Components, Annotating and Editing the Symbols
- Editing an Existing Record in the Schematic Component or Circuit Dialog Box, Inserting Components from Panel Lists, Swapping and Updating Blocks
- Schematic Editing
- Electrical Auditing
- Connectors, Point-to-Point Wiring Diagrams, and Circuits
- Using Point-to-Point Wiring Diagrams
- Adding Multiple Phase Ladders and Wires
- Creating Panel Layouts from Schematic Lists
- Generating Schematic Reports
- Inserting Parametric PLC Modules, Using the Spreadsheet to PLC I/O Utility Tool
- Inserting Terminal Symbols, Annotating and Editing Terminal Symbols
- Advanced Settings, Configurations, and Templates