

ECET 232: AutoCAD Electrical

Description

Students will gain the skills needed to work effectively with the AutoCAD Electrical software. They will learn how to use the software tools to create schematic drawings, ladder logic diagrams, point to point diagrams, panel drawings, and PLC I/O circuits using automated commands for symbol insertion, component tagging, wire numbering, and drawing modification. Students will learn how to customize AutoCAD Electrical symbols, circuits, and databases. Additional topics covered include: title block linking, reporting tools, templates, and project files.

Contact Information

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Pre-requisites

- C in ECET 141
- C in ECET 190

Course Type

- *Online Lecture/Lab:* 3 Hours per Week
- *Out of Class Work:* 4 to 6 Hours per Week

Credits: 2.0

Intended Learning Outcomes

Upon successful completion of this course, a student will be able to:

- Produce electrical drawings using AutoCAD Electrical design software.
- Apply automated commands to enable symbol insertion, component tagging, wire numbering, and drawing modification.
- Construct unique electrical symbols, circuits, and databases using the customizing features of AutoCAD.
- Generate professional industry standard documents using title block linking, reporting tools, templates, and project files.

Grading System:

- Letter Grades as per Camosun College Policies

IMPORTANT NOTES:

Course Completion Requires:

- Class/Lab attendance is mandatory
- All course material must be submitted at least 1 day before the final project
- You must achieve a minimum of 60% on your final exam
- You must have an average of 50% on the rest of the course work

A Note on Late Material:

- All late course material is reduced by 40% and then an additional 5% per day
- All material must be handed in to qualify for the final project

COURSE EVALUATION:

Exercises	40%
Tests	20%
Final Project	40%

TEXT BOOKS AND REFERENCES:

- ◆ Required Text: AutoCAD Electrical 2020 – 11th Edition
Sham Tickoo
ISBN: 978-1-64057-081-8
- ◆ D2L
- ◆ Web Resources

Notes:

- You must complete all the work by yourself
 - Some collaboration and learning from each other is expected and encouraged but the submitted work must be your own
- Class attendance is **MANDATORY**, failure to attend will result in an F grade
- A **20% penalty** will be applied to the current lab for **Late Attendance**
- Lab grades will not be awarded for missed labs without a valid reason (i.e. a doctor's note if sick)
 - Please communicate with the instructor prior to missing a class or lab or if you are going to be late

Course Outline (subject to change):

Introduction

- Autodesk Account
- Schematics vs One Line Drawings
- AE Interface

Project Manager

- Project Manager Interface
- New Project
- Working with Drawing
- Organization

Drawing Templates

- Title block creation
- Attributes
- Layers
- WD_M Block

Working with Wires

- Inserting
- Modifying
- Wire Types
- Wire Numbers
- Wire Markers
- Cable Markers
- Source Destination Arrows
- Multiwire Circuits and 3 Phase
- Fan In – Fan Out

Creating Ladders

- Inserting New
- Modifying
- Renumbering
- Grid Labels

Schematic Components

- Inserting
- Icon Menu
- Catalogue Browser
- Annotating
- Editing
- Parent Child Relationship
- Creating Project Specific Catalogue Database

Schematic Editing

- Scoot and Move Tool
- Copying
- Aligning
- Updating from Database
- Retagging Drawings
- Editing Attributes

Connectors, Point to Point Wiring Diagrams and Circuits

- Inserting
- Move/Copy
- Modifying
- Wiring
- Splices

Panel Layouts

- WD_PNLM Block
- Creating from Schematic List
- Editing Footprints
- Installation Codes
- Nameplates and Balloons
- Resequencing Item Numbers

Reports – Schematic and Panel

- Bill of Materials (BOM)
- Components
- PLC I/O Address and Descriptions
- Connector Reports
- Cable Summary
- Editing

PLC Modules

- Inserting Parametric/Non Parametric
- Editing
- Inserting I/O Points

Terminals

- Inserting
- Jumpers

Creating Symbols

- Creation
- Naming Conventions

Settings, Configurations and Templates

- Taught throughout each previous module