COURSE TITLE	**PANEL WIRING WITH AUTOCAD ELECTRICAL**
COURSE CODE	**01EE1114**
COURSE CREDITS	**1**

Objective:

1 To equip learners with the professional workflow for designing industrial control systems, enabling them to translate logical circuit schematics into accurate physical panel layouts using AutoCAD Electrical.

Course Outcomes: After completion of this course, student will be able to:

1 Initialize and configure AutoCAD Electrical projects and drawing files.

2 Draft electrical circuit diagrams using standard component libraries.

3 Generate 2D panel footprints directly from schematic data.

4 Link and verify connectivity between schematic diagrams and physical panel layouts.

Pre-requisite of course:NONE

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
0	0	2	0	0	0	25	25

Contents : Unit	Topics	Contact Hours
1	**Introduction to AutoCAD Electrical** Introduction to AutoCAD Electrical & Interface, Interface Components and Commands, Workspace Settings, Electrical Help, Drawing Files, Electrical Components and Wires, Design Methodologies	5
2	**Basics of Electrical Drawings** Need of Drawings, Electrical Drawings, Circuit Diagram, Wiring Diagram, Wiring Schedule, Block Diagram, Parts List, Symbols in Electrical Drawings Conductors, Connectors and Terminals, Inductors and Transformers, Resistors Capacitors, Fuses, Switch Contacts, Switch Types, Diodes and Rectifiers, Earthing, Wire and Specifications, Types of Wires, Labelling	7
3	**Single Wires/Components** Referencing, Ladders, Insert Wires, Edit Wires, Add Rungs, Wire Setup, Wire Numbers, Source & Destination Signal Arrows, Parent/Child Components	4
4	**Multiwire and Circuits** Dashed Link Lines, 3-Phase Ladders, Multiple Wire Bus, 3-Phase Components 3-Phase Wire Numbering, Cable Markers, Fan In/Out, Insert Saved Circuits, Copy / Move Circuit, Circuit Builder	4

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Contents : Unit	Topics	Contact Hours
5	**Panel Drawings** Create a Panel Layout from a Schematic List, Insert Footprint, Insert Component, Edit Footprint, Assign Item Numbers, Add Balloons, Panel Layout, Annotation and Reports, Exercise	10
Total Hours		**30**

Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
1	**Experiment No. 01** To draw the Basic shapes like lines, arcs, curves, shape filling.	2
2	**Experiment No. 02** To draw the Basic Electrical symbols.	2
3	**Experiment No. 03** To draw basic electronics symbols.	2
4	**Experiment No. 04** To draw multiwires and circuit using electrical CAD.	2
5	**Experiment No. 05** To draw house wiring diagram and layout.	2
6	**Experiment No. 06** To draw construction feature of D.C motor.	2
7	**Experiment No. 07** To draw 3 point and 4 point D.C starters.	2
8	**Experiment No. 08** To draw electrical panel layout.	2
9	**Experiment No. 09** To draw single line diagram of power system.	2
10	**Experiment No. 10** Simple power and control circuit diagrams.	2
Total Hours		**20**

Textbook :

1 AutoCAD Electrical 2024 Black Book: 9th Edition, Gaurav Verma and Matt Weber, Cadcamcae Works, 2023

References:

1 AutoCAD Electrical 2020: A Tutorial Approach, AutoCAD Electrical 2020: A Tutorial Approach, Sham Tickoo, CADCIM Technologies, 2020

2 AutoCAD Electrical 2022 for Electrical Control Designers, 13th Edition, AutoCAD Electrical 2022 for Electrical Control Designers, 13th Edition, Sham Tickoo, CADCIM Technologies, 2021

3 AutoCAD Electrical 2018 Black Book, AutoCAD Electrical 2018 Black Book, Gaurav Verma, BPB Publications, 2018

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking / Creative**
0.00	0.00	40.00	40.00	20.00	0.00

Instructional Method:

1 The course delivery method will depend upon the requirement of content and need of students.

2 Students will use supplementary resources such as online videos and books.

Supplementary Resources:

1 https://caddcentre.com/courses/autocad-electrical-software-certification-course/

2 https://www.autodesk.com/support/technical/article/caas/sfdcarticles/sfdcarticles/Learning-Materials-for-AutoCAD-Electrical.html

3 https://www.udemy.com/course/complete-course-in-autocad-electrical-2021/

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