

# **REPORT ON ELECTRICAL-CAD**

## **Objective of the workshop:**

To equip participants with practical skills in designing and drafting electrical circuits using specialized CAD software such as Electrical-CAD Electrical or EPLAN. The workshop aims to bridge theoretical knowledge with real-world applications by teaching students how to create accurate wiring diagrams, control circuit layouts, and panel designs.

Participants will learn to use standard electrical symbols, generate technical documentation like bills of materials and terminal lists, and understand how CAD tools enhance design accuracy, efficiency, and professionalism. This hands-on experience prepares attendees for industry-level electrical design and project planning.

Venue: Power system lab of Electrical and Electronics  
Department, MBC CET

Coordinated by: Mr. Rakesh Raju

CADD Centre, Pala

## **Coverage of workshop:**

"Five day's workshop on Electrical-CAD" was organized by Mar Baselios Christian College of Engineering & Technology, Kuttikkanam, Peermade on 20th February 2024 to 24<sup>th</sup> February. Around 11 EEE students attended the workshop. The session was instructed by Mr Rakesh Raju from CAD Centre, Pala. The course content is as follows:

A leading computer-aided design (CAD) software widely used in various industries such as architecture, engineering, and construction. Throughout the five-day workshop, participants delved into the fundamental concepts and practical applications of Electrical-CAD under the guidance of experienced instructor.

## **DAY:1**

The workshop started at 9:00 am and was inaugurated by HOD Prof. Resmara S. Class Coordinators and Faculty members were present during the event.

The first day of the workshop served as an introduction to Electrical-CAD, focusing on familiarizing participants with the software's interface, tools, and basic functionalities. Participants were introduced to the concept of computer-aided design (CAD) and its importance in various industries. The session commenced with an overview of Electrical-CAD's workspace, including the ribbon, command line, and drawing area.

Throughout the day, participants learned essential navigation techniques, such as zooming, panning, and rotating the drawing view. Basic drawing commands like Line, Circle, and Rectangle were introduced, allowing participants to create simple geometric shapes. Additionally, they explored the modification tools to edit and manipulate objects within the drawing.

Hands-on exercises and demonstrations were integrated to reinforce learning, enabling participants to practice using Electrical-CAD's basic tools and commands. By the end of the day, participants gained confidence in navigating the Electrical-CAD environment and executing basic drawing tasks.

## **DAY:2**

The second day focused on enhancing participants' skills in drawing with precision and efficiency. Participants learned about snap tools, grids, and coordinate systems, essential for ensuring accuracy in drawings. They explored various methods to input precise coordinates and dimensions, enabling them to create drawings with exact measurements.

Advanced drawing tools such as Polar Tracking and Object Snap Tracking were introduced to aid participants in drawing accurately aligned objects. Additionally, participants learned about the importance of layers in organizing drawings and assigning properties to objects. They practiced creating and managing layers to maintain drawing clarity and organization.

The day also covered techniques for efficiently editing and modifying drawings, including commands like Copy, Mirror, and Array. Participants engaged in practical exercises to apply these editing tools, further refining their drawing skills and efficiency in Electrical-CAD.

### **DAY:3**

On the third day, participants delved into the essential aspects of annotation and dimensioning in Electrical-CAD. They learned how to add text, labels, and annotations to drawings to convey important information and enhance clarity. Participants explored various text styles, formatting options, and annotation tools available in Electrical-CAD.

Dimensioning techniques were also covered extensively, including linear, angular, and radial dimensions. Participants learned how to add dimensions accurately to drawings and ensure compliance with industry standards and conventions. Practical exercises enabled participants to apply dimensioning techniques to their drawings effectively.

The day concluded with discussions on best practices for annotation and dimensioning, emphasizing the importance of clear and concise communication in technical drawings.

### **DAY:4**

The fourth day of the workshop introduced participants to advanced drawing tools and techniques in Electrical-CAD. Participants learned about more complex drawing tools, including polylines, splines, and hatches, enabling them to create intricate shapes and patterns.

Practical exercises and demonstrations facilitated participants' understanding and application of advanced drawing tools, empowering them to create more sophisticated and dynamic drawings.

### **DAY:5**

The final day of the workshop focused on customization and productivity tools in Electrical-CAD. Participants learned how to customize the Electrical-CAD environment to suit

their workflow preferences, including modifying the workspace, creating custom tool palettes, and configuring shortcut keys.

### **PO JUSTIFICATION**

**PO1 – Engineering Knowledge**

Students apply fundamental and advanced electrical concepts to create circuit designs and system layouts using CAD tools.

**PO2 – Problem Analysis**

Enables analysis and optimization of circuit designs to meet real-world constraints and specifications.

**PO3 – Design and Development of Solutions**

Directly involves creating effective electrical system designs like wiring diagrams, control panel layouts, and schematics.

**PO4 – Conduct Investigations of Complex Problems**

Students can simulate and verify designs, analyze errors, and validate performance through CAD-based virtual testing.

**PO5 – Modern Tool Usage**

Core relevance, as Electrical CAD is a widely used modern engineering design tool in the industry.

**PO9 – Individual and Team Work**

Workshop activities often involve collaboration, peer review, and team-based design exercises.

**PO12 – Life-long Learning**

Encourages adaptability to evolving design tools and platforms, supporting continuous professional development.

### **PSO JUSTIFICATION**

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**PSO1 – Design, Analyze, and Test Components and Systems**

Directly supports system design, testing, and analysis using software tools like AutoCAD Electrical, EPLAN, etc.

**PSO2 – Specify and Analyze Electronic Systems**

Helps in preparing professional schematics for control circuits, analog/digital systems, and electrical layouts.

## POSTER:

MAR. BASELIOS CHRISTIAN  
COLLEGE OF ENGINEERING & TECHNOLOGY  
KUTTIKANAM, PEERMADE

5 DAY WORKSHOP  
ON ELECTRICAL-CAD

ER. DON S. KURIAN

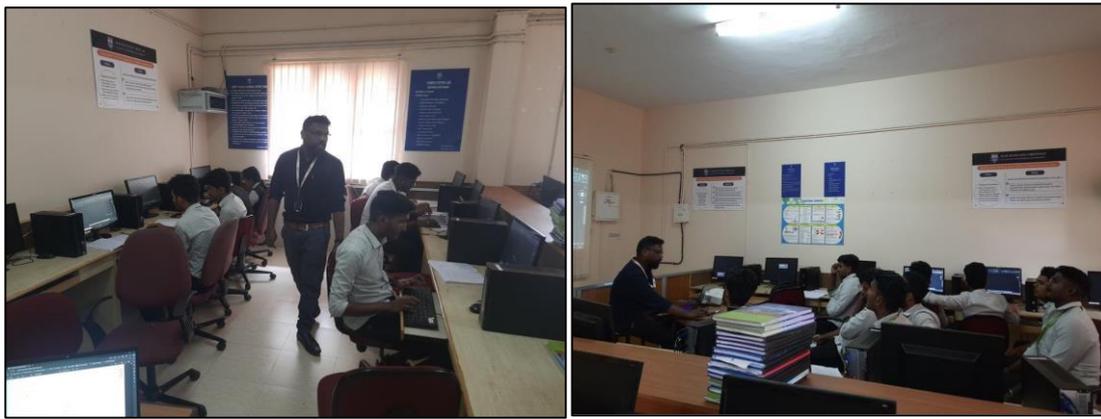
**CADD  
CENTRE**

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## WORKSHOP GLIMPSES:





## **CONCLUSION:**

This report provides an overview of the workshop's objectives, curriculum, methodologies, and outcomes. It outlines the key topics covered during each session and highlights the participants' engagement and progress throughout the program. Additionally, it offers insights into the workshop's effectiveness in enhancing participants' proficiency in Electrical-CAD and its potential impact on their professional endeavors.

Through a combination of theoretical instruction, hands-on exercises, and interactive discussions, participants were immersed in the world of Electrical-CAD, gaining proficiency in drawing and editing techniques, precision drafting, annotation, and advanced functionalities. The workshop fostered a collaborative learning environment where participants were encouraged to explore, experiment, and problem-solve within the Electrical-CAD software.

This report serves as a comprehensive overview of the Electrical-CAD workshop, documenting its objectives, activities, and outcomes, and providing valuable insights into the participants' learning journey and the workshop's overall effectiveness.

