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Power Electronics & Drive Systems

COURSE OVERVIEW

This course provides a focused introduction to the principles, components, and control strategies used in modern power electronics and electric drive systems. It explains how converters, inverters, and motor drives are designed, integrated, and controlled to achieve efficient power conversion in industrial, commercial, and renewable-energy applications. Participants will explore semiconductor devices, switching techniques, drive topologies, and system-level performance considerations, gaining both theoretical grounding and practical insight into real-world applications. Through exposure to hands-on exercises, participants will be prepared to analyze, specify, and support power electronic systems used in motors, automation, and energy technologies.

WHO SHOULD ATTEND?

This course is ideal for electrical engineers, electronics engineers, control engineers, automation specialists, maintenance and operations personnel, and technical managers involved in motor drives, power conversion, renewable energy systems, or industrial electrical applications.

COURSE OUTCOMES

Delegates will gain the skills and knowledge to:

- Analyze and design power electronic converter circuits.
- Select appropriate semiconductor devices for different applications.
- Develop control strategies for motor drive systems.
- Implement power quality improvement techniques.
- Troubleshoot and maintain power electronic equipment.
- Integrate drive systems with renewable energy sources.

KEY COURSE HIGHLIGHTS

At the end of the course, you will understand;

- Power semiconductor devices and switching characteristics.
- DC-DC converter topologies and control techniques.
- Inverter designs and pulse-width modulation strategies.
- AC and DC motor drive principles and applications.
- Power quality issues and mitigation methods.
- Thermal management and protection circuits.
- Power industry standards and efficiency optimization techniques.

All our courses are dual-certificate courses. At the end of the training, the delegates will receive two certificates.
1. A GTC end-of-course certificate
2. Continuing Professional Development (CPD) Certificate of completion with earned credits awarded