***INDUSTRIAL ELECTRICIAN COURSE***

**ABOUT THE TRAINER:**

"The concerned trainer is a professional with a robust background in Electrical and Electronics. Holding a Bachelor's degree in Electronics Technology, he seamlessly integrates theoretical and practical expertise, providing participants with a comprehensive educational experience.

Certified by the National Vocational and Technical Training Commission (NAVTTC) as an assessor, he is dedicated to maintaining excellence in technical education. With over 14 years of experience, he currently contributes his expertise to Pakistan's largest power sector organization. His practical experience includes designing, troubleshooting, and consulting for Electrical/Electronics industrial systems.

As the pioneer of Industrial Electrician course at the Pakistan Industrial Technical Assistance Centre (PITAC), he has trained over 200 students, equipping them with both theoretical insights and practical skills."

**COURSE OBJECTIVES:**

The objectives of an Industrial Electrician course, specially designed for individuals without any electrical background and beneficial even for engineers, include:

***Fundamental Knowledge:***

Provide students with a solid understanding of electrical principles, theories, and concepts relevant to industrial applications.

***Safety Procedures***

Emphasize safety protocols and procedures to ensure that students can work safely in industrial environments, including the proper use of personal protective equipment (PPE).

***Electrical Systems Understanding***

Develop skills in interpreting and analyzing electrical schematics, blueprints, and technical drawings for effective system troubleshooting and maintenance.

***Practical Skills:***

Incorporate practical, hands-on training to reinforce theoretical concepts and develop proficiency in using tools and equipment commonly used in industrial electrician roles, making it accessible to beginners.

***Troubleshooting Techniques***

Teach effective troubleshooting methodologies to diagnose and rectify electrical faults in a systematic and efficient manner.

***National Electrical Code (NEC) Compliance:***

Familiarize students with the relevant electrical codes and standards, emphasizing compliance to ensure the safety and reliability of industrial electrical systems.

***Automation and Control Systems:***

Introduce students to industrial automation, programmable logic controllers (PLCs), and control systems commonly used in industrial settings.

***Instrumentation Skills***

Provide training in instrumentation techniques, including the calibration and maintenance of various sensors and measuring devices.

***Workplace Communication***

Develop effective communication skills, as industrial electricians often collaborate with other professionals and need to convey technical information clearly.

***Professional Ethics***

Cultivate a professional attitude, work ethics, and teamwork capabilities, preparing individuals for the collaborative nature of industrial work environments, regardless of their prior experience.

***Emerging Technologies***

Keep students informed about the latest technologies and trends in industrial electrical systems to ensure their skills remain relevant in a rapidly evolving field.

**COURSE OUTLINE:**

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| **Week** | **Topics** |
| Week 1 | * Basic Electrical Concepts
* Types of switches , Applications and selection criteria’s
* Domestic Wiring Planning and Installation
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| Week 2 | * Human Safety and Short Circuit Protection
* Different electrical circuits’ applications
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| Week 3 | * Cable Selection
* Circuit Breaker Selection
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| Week 4 | * Different domestic circuits
* Selection of relay
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| Week 5 | * Different relay circuits
* Magnetic Contactor and Other hardware selection for switch gear
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| Week 6 | * Three Phase Motor Forward Reverse Control
* Three Phase Motor Star delta Control and Applications
 |
| Week 7 | * Timer Applications and Selection
* Counters Application and selection
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| Week 8 | * Power Factor Improvement and Capacitor Bank Selection
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