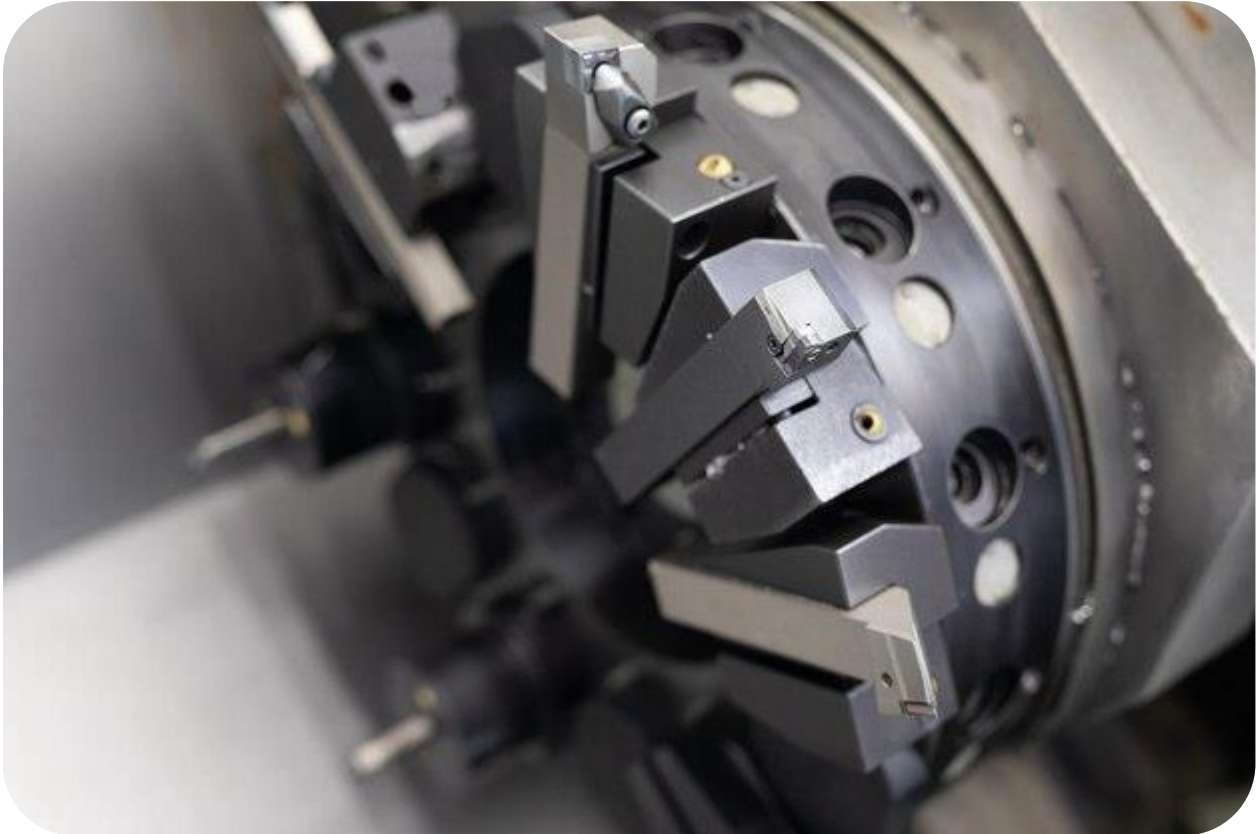




Induction Motors - Basics

Course Introduction:

This course provides foundational knowledge about induction motors, which are widely used in various industrial applications. Participants will learn about the operating principles, types, construction, and performance characteristics of induction motors.

Course Objectives:

Upon the successful completion of this course, each participant will be able to:-

- Understand the basic principles of induction motor operation.
- Identify different types and configurations of induction motors.
- Learn about the construction and components of induction motors.
- Analyze performance characteristics and efficiency factors.
- Gain insights into common applications and troubleshooting techniques.

Who Should Attend?

- Electrical engineers and technicians
- Maintenance personnel
- Facility managers and operators
- Individuals interested in motor control and automation

Course Outline:

Day 1: Introduction to Induction Motors

- **Session 1: Overview of Electric Motors**
 - Types of electric motors and their applications
 - Importance of induction motors in industry
- **Session 2: Basic Operating Principles**
 - Electromagnetic induction and motor operation
 - Rotating magnetic fields and rotor dynamics

Day 2: Types of Induction Motors

- **Session 1: Squirrel Cage Induction Motors**
 - Construction and working principle
 - Advantages and limitations
- **Session 2: Wound Rotor Induction Motors**
 - Construction and working principle

- Applications and performance characteristics

Day 3: Construction and Components

- **Session 1: Motor Construction**
 - Stator and rotor design
 - Materials used in construction
- **Session 2: Key Components**
 - Bearings, windings, and cooling systems
 - Role of the enclosure and insulation

Day 4: Performance Characteristics

- **Session 1: Motor Ratings and Specifications**
 - Understanding horsepower, voltage, and efficiency ratings
 - Load characteristics and torque-speed curves
- **Session 2: Efficiency and Losses**
 - Types of losses in induction motors (copper, iron, mechanical)
 - Methods to improve motor efficiency

Day 5: Applications and Troubleshooting

- **Session 1: Common Applications of Induction Motors**
 - Industrial and commercial uses
 - Selection criteria for specific applications
- **Session 2: Troubleshooting Techniques**
 - Common problems and maintenance practices
 - Diagnostic tools and techniques for motor reliability

Conclusion

- Recap of key concepts covered in the course
- Discussion on the future trends in induction motor technology
- Q&A session to address specific participant queries

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques

- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course locations. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session