

# Craft Skills

## Motor Theory



## Course Number

EMS-105

## Course Purpose

This course provides information on the principles of operation associated with motors and motor components, and the AC/DC theory of operation, including torque, pullout torque, and slip.

Upon completion of this course, you should be able to:

- Describe the general characteristics of electric motors
- Describe the construction and operation of DC motors
- Identify the types of DC motors
- Describe how DC motors are controlled
- Describe the construction and operation of AC motors
- Identify the types of AC motors
- Describe how AC motors are controlled
- Identify the information on a motor nameplate
- Describe DC and AC motor maintenance activities
- Describe the National Electric Testing Association guidelines for testing motors

## COURSE AGENDA

### DAY 1

- Explaining Motor Theory
- Defining Motor Terminology
- Wiring Motor Connections

### DAY 2

- Applying Motor Control Methods
- Testing Direction and Speed Controls

### DAY 3

- Identifying Replacement Considerations
- Recognizing Special Maintenance Requirements
- Performing Rotating Machinery Maintenance and Testing
- Troubleshooting and Repairing
- Lab Exercises
- Final Lab
- Review
- Written Exam

## WHO SHOULD ATTEND

This course is designed for electrical maintenance technicians.

## PREREQUISITES

To successfully complete this course, the following prerequisites are required:

- None

## STUDENT MATERIALS

To enhance and facilitate the students' learning experiences, the following materials are provided as part of the course package:

- Student Manual
  - Includes the key concepts, definitions, examples, and activities presented in this course
- Lab Book
  - Provides learning activities and hands-on practice

## HANDS-ON PRACTICE

Throughout this course, you will have the opportunity to practice the skills you have learned through a variety of hands-on exercises. These exercises focus on the skills introduced in each lesson.

You will also have the opportunity to combine and practice groups of key skills by completing multiple integrated practices during the course.

## NEXT LEARNING LEVEL

Once you have mastered the skills covered in this course, you may want to attend specific training, such as:

- Generator Theory

## COURSE LENGTH

This is a three-day course.

### TO REGISTER

To register for this or any other Rockwell Automation training course, contact your local authorized Allen-Bradley® Distributor or your local Sales/Support office for a complete listing of courses, descriptions, prices, and schedules.

You can also access course information via the Web at <http://www.rockwellautomation.com/training>

To be respectful of the environment, Rockwell Automation is transitioning some of its training courses to a paperless format. Students are asked to complete downloads and bring personal devices to these classes. A full list of digital/paperless courses is currently available through your local distributor.

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