

Craft Skills

Industrial Electronics



**Rockwell
Automation**



Allen-Bradley
by ROCKWELL AUTOMATION

Course Number

ICS-100

Course Purpose

This course provides information on the function and circuit analysis of power supplies, amplifiers, integrators, comparators, and oscillators.

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

- Discuss the characteristics and uses of semiconductor devices.
- Discuss the characteristics and uses of bipolar transistors
- Describe the operation of diodes
- Describe the operation of transistors
- Describe the operation of operational amplifiers
- And much more

COURSE AGENDA

DAY 1

- Explaining Diode Operations
- Using Diodes in Circuits
- Comparing Diode Types
- Differentiating Rectifier Types
- Filtering Rectified Waveforms Using the Following Filters:
 - Capacitive
 - Choke
 - Multiple Section
 - Pi
 - RC Input Filter

DAY TWO

- Dividing Voltage Using Series and Parallel Voltage Dividers
- Using Current Dividers
- Regulating Voltage
- Multiplying Voltage
- Applying SCRs to Circuits
- Using Zener Diodes as Regulators
- Applying Varistors
- Describing LED Operation Methods
- Differentiating NPN and PNP Bipolar Transistors
- Biasing Transistors

DAY THREE

- Testing Transistors
- Wiring Transistor Circuits for Amplification
- Using Opto-Electronic Devices
- Applying Integrated Circuits
- Review
- Final Lab
- Written Exam

WHO SHOULD ATTEND

This course is suitable for electrical maintenance technicians, electronic technicians and I.C. 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 Guide which includes the hands-on exercises

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:

- Basic Digital Circuits

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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