

Basic Digital Circuits

OEM: Rockwell Automation • Duration: 3 Days (24 hrs) • Code: ICS-105

COURSE MODULES & TOPICS

Objectives

- Convert a number between binary and decimal
- Describe the difference between analog and digital circuits
- Describe the gates found in digital logic
- Simplify expressions using Boolean algebra
- Describe how to combine logic gates
- Describe the circuits found in sequential logic

Prerequisites

- Understanding of electrical theory and electrical systems

Student Materials

- Student Manual includes the key concepts, definitions, examples, and activities presented in this course
- Lab Guide includes the hands-on exercises

Next Level Learning

- Instrumentation Overview (ICS-110)

Course Agenda

Day 1

- Introduction
- Using alternative number systems
- Interpreting boolean expressions
- Reading digital signal diagrams
- Expressing binary data
- Applying logic gates
- Creating truth tables

Day 2

- Using integrated circuit families
- Deriving logic equations
- Detailing flip-flop circuits
- Wiring encoders and decoders
- Using counters
- Addressing registers
- Explaining RAM characteristics

Day 3

- Troubleshooting digital circuits
- Review
- Troubleshooting exercises
- Final exam

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