Automatic Identification Systems

Catalogue Number	3051-0000
Category	Electronics and Electrical Control
Duration	15 Hours

Activity 1: Getting Started

- Identification
- Task: Entering Serial Numbers Manually
- What is Automatic Identification
- AutoID Technologies
- The Automatic Identification Systems Module

Activity 2: Introduction to Barcode

- What is Barcode?
- History of Barcode Technology
- Why Barcode Technology?
- Task: Scanning a Barcode
- Barcode Applications
- Task: Entering and Retrieving Information for a Barcode
- Barcode Standards
- Barcode Facts

Activity 3: Barcode Symbologies

- Symbologies
- Barcode Density
- Barcode Structure
- UPC Symbology
- Task: Calculating the Check Character for a UPC Barcode
- Industrial Symbologies
- Interleaved 2 of 5 Symbology
- Task: Calculating the Check Character for an I 2 of 5 Barcode
- Code 39 Symbology
- Code 128 Symbology

Activity 4: Reading and Decoding Barcode

- Barcode System Components
- Task: Entering Serial Numbers Automatically
- Types of Barcode Readers
- How Barcodes are Decoded
- Scanner Operating Parameters
- Task: Scanning in Trigger and Continuous

Activity 5: Scanner Operating Parameters

- Additional Scanner Operating Parameters
- Task: Adjusting the Beep Tone
- Task: Scanning Barcodes at Varying Distances
- Delays
- Task: Changing the Intercharacter Delay
- Task: Changing the Interblock Delay
- Miscellaneous Parameters
- Project: Designing a Barcode System for a Clinic
- Task: Implementing the Barcode System
- Looking to the Future: Two Dimensional Barcode Data

Activity 6: Introduction to Magnetic Stripe

- What is Magnetic Stripe Technology?
- History of Magnetic Stripe Technology
- Why Use Magnetic Stripe Cards?
- Task: Re-Encoding Data on a Magnetic Stripe Card
- Magnetic Stripe Standards
- Magnetic Stripe Tracks
- Magnetic Stripe Card Systems
- Magnetic Stripe Card Readers

Activity 7: Creating Magnetic Stripes

- Magnetism
- How Magnetic Stripe Cards are Created
- Task: Encoding Information in a Magnetic Stripe Card
- Coercivity
- Personalizing Magnetic Stripe Card Readings
- Project: Designing a Magnetic Stripe Card System
- Task: Observing the Effects of a Magnetic Field

Activity 8: Introduction to Smart Cards

- AutoID Card Technologies
- Introducing Smart Cards
- History of Smart Cards
- Advantages of Smart Card Systems
- Smart Card Applications
- Task: Accessing Information Stored in a Smart Card

Activity 9: How Smart Cards Work

- Memory vs. Microprocessor Smart Cards
- Contact vs. Contactless Smart Cards
- Smart Card Standards
- Smart Card System Components
- Project: Designing a Smart Card System for a University

Activity 10: Introduction to Radio Frequency Identification

- Evaluating Barcode Technology
- Task: Scanning Barcodes Under Challenging Conditions
- What is Radio Frequency Identification
- Task: Scanning RFID Tags Under Challenging Conditions
- History of RFID Technology
- Advantages of RFID Technology
- Applications of RFID
- RFID Standards

Activity 11: Radio Frequency Identification System

- RFID System Components
- How Does RFID Work?
- Task: Shopping
- Types of RFID Tags
- RFID System Types
- Project: Designing an RFID System for Wildlife Conservation
- RFID: A Look in to the Future

Activity 12: Introduction to Biometrics

- Personal Identification
- What is a Biometric Identification System?
- What are Biometrics?
- How Does a Biometric System Work?
- Accuracy of Biometric Systems
- Pros and Cons of Biometric Technology
- Applications of Biometric Systems

Activity 13: Fingerprint and Hand Geometry

- Fingerprint Biometric Systems
- Hand Geometry Biometric Systems
- Task: Designing a Biometric Identification System

Activity 14: Additional Biometric Identification Systems

- Eye Biometric Systems
- Behavioral Biometrics
- Voice Biometric Systems
- Signature Recognition Systems

Activity 15: Conclusion

- The Future of Automatic Identification
- Designing an Automatic Identification System

Comprehensive Post-Test