



ES111 Fundamentals of Electronic Systems Program Outline

This program is made up of 14 course modules. Below is a breakdown of topics that will be covered along with a minimum time commitment for each section. The total minimum commitment is eight hours.

Overview - 34 minutes

- RLWS Corporate Video
- Voltmeter Introduction
- Course Expectations
- Overall Themes
- Course Walkthrough

Mechanical Basics - 17 minutes

- Terminology
- Visual Inspection
- Conditions and Effects
- Environmental Conditions

Basic Scale Electronics - 1 hour 2 minutes

- Metric System
- Electronic Terminology
- Ohm's Law
- Circuits
- Taking Measurements
- Grounding
- Voltmeter Lab Exercise

Power Conditioning and ESD - 1 hour 1 minute

- Avoiding Static
- Electrostatic Discharge
- ESD Prevention
- Power Conditioning
- Grounding

Basic Load Cell Theory - 52 minutes

- Design and Function
- Wiring Identification
- Load Cell Identification
- Measurements
- IP Rating System
- Troubleshooting

Basic Indicators - 22 minutes

- Indicator Overview
- Indicator Setup
- Indicator Menu
- Calibration
- Configuring Capacity

Advanced Indicators - 17 minutes

- 920i Overview
- 1280 Overview
- Identifying Specials
- iRev and Revolution
- 1280 Web Server

Revolution - 17 minutes

- Download and Install
- Wiring Requirements
- Checking COM Port
- Verifying Firmware
- Getting Connected
- Troubleshooting

Data Communications - 22 minutes

- Communication Types
- Serial Communication
- Distance Limitations
- Data Formats
- EtherNet IP or Ethernet TCP/IP
- 9-Pin Serial Pinout

Print Formatting - 27 minutes

- Print Modes
- Print Formats
- Modifying Formats
- Format Syntax
- Using an ASCII Chart
- Using Revolution

Forklift Scales - 27 minutes

- Major Parts
- Theory of Operation
- Revolution
- Calibration
- Troubleshooting
- Troubleshooting LED Lights

J-Boxes and Trimming - 47 minutes

- Purpose
- Selection
- Board Identification
- Signal Trimming
- Excitation Trimming
- Troubleshooting

Troubleshooting - 27 minutes

- Scientific Method
- Divide and Conquer
- Mechanical Load
- Environmental Factors
- Instrumentation
- Serial Communications
- My Scale Is Broken Scenario

Final Exam - 45 minutes

- Multiple Choice
- True False
- Certificate Earned at 70% or Better