

## LabVIEW Real-Time Application Development Course (Online)

### Overview

This instructor-led online course is an adaptation of the LabVIEW Real-Time Application Development course delivered Online. This course is a hands-on training on the fundamental concepts for developing robust, reliable, and deterministic measurement and control systems. The course material focuses on robust system architectures, real-time programming techniques, and time-saving development tips. At the end of the course, you will be able identify and determine the important factors to effectively create and communicate with your Real-Time application. By combining interactive learning technology delivered over the Internet with live instruction, this online course delivers many of the benefits of an instructor-led classroom course while reducing your training and development costs.

**Duration** – 2 days (4 two-hour online sessions)

### Audience

- LabVIEW Real-Time Module users preparing to develop applications to target RT series real time hardware
- Users developing or optimizing deterministic closed-loop control systems
- Users developing applications for deployment in industrial environments or remote locations
- Users who cannot attend classroom-based LabVIEW Real-Time training
- Users and technical managers evaluating LabVIEW Real-Time or NI Developer Suite in purchasing decisions

### Prerequisites

- LabVIEW Basics, or equivalent experience

### REGISTRATION

Register online at [ni.com/training](http://ni.com/training) or call (800) 890-2062 • Fax: (512) 683-9300  
[info@ni.com](mailto:info@ni.com)

Outside North America, contact your local NI office. Worldwide Contact Info: [ni.com/global](http://ni.com/global)

NI can also customize and hold this class to meet your training needsuary.

**Ordering Information** 910743-69

### After attending this course you will be able to:

- Determine if a real-time solution is appropriate for a given problem
- Choose the best target hardware for a given real-time application
- Understand how to implement a deterministic and reliable application
- Choose an appropriate communication method
- Benchmark your application
- Deploy your application

### Suggested Next Courses

- LabVIEW Intermediate
- LabVIEW Advanced Application Development
- Data Acquisition and Signal Conditioning
- LabVIEW FPGA

### NI Products Used During the Course

- LabVIEW Professional Development System, Version 7.1
- LabVIEW Real-Time Module
- LabVIEW Execution Trace Toolkit
- RT Series Compact FieldPoint System
- RT Series PXI Embedded Controller
- E-Series DAQ board with DAQ Signal Accessory

## Preliminary Course Outline - LabVIEW Real-Time Application Development Online

### Introduction to Real-Time

- What is real time?
- RT Host
- RT Target
- RT Input and Output hardware

### Configuring your hardware

- Overview of hardware setup and installation
- Configuring the target
- Configuring your input and output
- Connecting to the target

### Real-Time Architecture

- Target and Host Architecture
- Multithreading
- Sleeping
- Improving Determinism
- Passing Data

### Timing Applications and Acquiring Data

- Timing Control Loops
- Software timing
- Hardware timing
- Benchmarking

### Implementation: Communication

- Front Panel Communication
- Network Communication
- RT Communication Wizard

### Deploying your application

- Introduction to deployment
- Application Builder
- Launching executables
- Communicating with deployed application