

TestStand II: Customization Course

Overview

Building on the TestStand I: Introduction course, the TestStand II: Customization course demonstrates how to customize the functionality built in to TestStand. Advanced features of the TestStand environment are taught such as multithreading and multi-UUT (Unit Under Test) testing, advanced reporting techniques, and using the TestStand application program interface (API). This course also contains information on how to integrate advanced user management into your test management system, and concludes with system design projects that present possible system designs and implementations.

Duration – Two Days

Audience

- TestStand I: Introduction course attendees
- New TestStand users
- Users and technical managers evaluating TestStand in purchasing decisions
- TestStand users pursuing the Certified TestStand Developer certification

Prerequisites

- TestStand I: Introduction course or equivalent experience
- Knowledge of test executive software and familiarity with LabVIEW, LabWindows/CVI or C programming

NI Products Used During the Course

- TestStand Version 3
- LabVIEW Version 7
- LabWindows/CVI Version 7

REGISTRATION

Register online at ni.com/china/events or call (800) 820-3622 • Fax: 021-65556244
china.events@ni.com

Worldwide Contact Info: ni.com/global

NI can also hold this class onsite at your facility.

Ordering Information 910621-XX

-01 NI Corporate or Branch, -11 Regional, -21 Onsite

After attending this course you will be able to:

- Use the TestStand API in designing your test system
- Configure TestStand applications to be used by different operators
- Develop customized TestStand applications
- Harness the power of testing multiple units under test
- Understand the different TestStand process models and how to modify them
- Customize report generation
- Develop and customize an Operator Interface

Suggested Next Courses:

- TestStand Advanced: System Design

TestStand II: Customization Course Outline

Day 1

Introduction to using the TestStand API

This discusses how to utilize the TestStand Application Programming Interface (API) when you are designing your test systems. The lesson discusses the TestStand API and what classes and object are available. It also explains some common uses of the TestStand API and where to find additional resources. Topics include:

- What the TestStand API
- Common uses of TestStand API
- Where to find additional TestStand API resources

Advanced User Management

This lesson explains how the user management features in TestStand work and how to utilize the more advanced user management features. You learn about the Login/Logout process and how to programmatically perform many of the user management procedures, such as creating and deleting users, getting user information, and setting various user privileges and properties. Topics include:

- Login/logout procedure
- Using the TestStand API to create or delete users
- Configuring user properties using the TestStand API

Multithreading and Multi-UUT Testing

This lesson discusses the meaning and advantages of performing multithreading and multi-UUT testing using TestStand. The lesson explains the functionality provided by the process models that TestStand provides for easily integrating these types of testing. You will learn how to use synchronization steps types in a multithreaded test environment. The lesson also covers TestStand's ability to perform remote executions. Topics include:

- Test system concepts
- Useful multithreading process models
- Test synchronization options
- Remote execution

Modifying the Process Models and Overriding the Callbacks

This lesson discusses how the various process models work, how to modify the process models, and how to use callbacks in your test sequences. Topics include:

- Structure of TestStand process models
- Modifying process models
- Creating and overriding callbacks

Day 2

Modifying the Operator Interface

This lesson describes how the operator interface works, the minimum programming required to build an operator interface, and how to modify the built-in operator interfaces. The lesson describes how to use the TestStand User Interface controls to simplify programming an operator interface. Topics include:

- Overview of the operator interface
- TestStand User Interface controls
- Posting and detecting custom UIMessages

Modifying Result Collection and Report Generation

This lesson teaches you how to modify result collection, how to add extra result data, and how to customize report generation. Topics include:

- Modifying result collection
- Customizing report generation
- Automatic reporting flags
- Overriding report callbacks

System Design Projects

This lesson presents a variety of open ended design project ideas for you to implement based on the knowledge you have gained from the TestStand II: Customization course. These exercises reinforce the topics covered in the course. Topics include:

- Dynamic sequence calling
- Creating a simple process model
- Storing LabVIEW references
- Passing arguments to new executions
- Time delay custom step type
- Creating a sequence builder tool
- Asynchronous report generation