

# WINDOWS POWERSHELL SCRIPTING AND TOOLMAKING (M55039)

Course Code: 6544

Build the tools that will allow you to better administer your Windows server and client products.

In this course, you will learn to build reusable tools by using Windows PowerShell 5.0/5.1. This course focuses on the Windows PowerShell scripting language and on the concepts and techniques needed to design tools, including and output requirements and functional requirements. You will learn functions to deal with anticipated errors using standard PowerShell patterns and practices. By course completion, you will be armed with the knowledge and skills to better administer a wide variety of server and client products and technologies that offer Windows PowerShell integration, including Microsoft Exchange Server, Microsoft Windows Active Directory Domain Services, Microsoft SharePoint Server, and more.

## What You'll Learn

- ☒ Write tools, including scripting, parameterizing commands, and providing verbose output
- ☒ Debug tools and provide error handling within tools
- ☒ Combine tools into script and manifest modules
- ☒ Create custom formatting views
- ☒ Create tools that are consistent in naming and operation with native Windows PowerShell tools

In this course, you will learn to build reusable tools by using Windows PowerShell 5.0/5.1.

## Who Needs to Attend

- Administrators that have little or no programming experience but who have a working knowledge of Windows PowerShell and who are able to use Windows PowerShell to run complex, interactive commands. Students of this course may administer a wide variety of server and client products and technologies that offer Windows PowerShell integration, including Microsoft Exchange Server, Microsoft Windows Active Directory Domain Services, Microsoft SharePoint Server, and more.

## Prerequisites

- Experience at basic Windows administration
- Experience using Windows PowerShell to query and modify system information
- Experience using Windows PowerShell to discover commands and their usage
- Experience using WMI and/or CIM to query system information

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VIRTUAL CLASSROOM LIVE

\$2,995 CAD

5 Day

## Virtual Classroom Live Outline

### 1. Preparing for Scripting

- Securing the Scripting Environment
- Understanding Variables and Operators
- Understanding Scripting Constructs and Scope

### 2. Parameterizing a Command

- Designing Parameters
- Implementing Parameters

### 3. Creating a Script Module

- Designing Script Modules
- Implementing Script Modules

### 4. Handling Errors

- Designing Error Handling
- Implementing Error Handling

### 5. Writing Commands that Use Pipeline Input and Output

- Understanding Pipeline Parameter Binding
- Implementing Pipeline Parameter Input
- Implementing Pipeline Parameter Input

### 6. Creating Hierarchical Command Output

- Designing Complex Command Output
- Implementing Complex Command Output
- Using Object Hierarchies

### 7. Debugging Scripts

- Designing Scripts for Debugging

- Implementing Script Debugging

## **8. Customizing Default Formatting**

- Designing Formatting
- Implementing Custom Formatting

## **9. Adding Advanced Parameter Attributes and Command Documentation**

- Implementing Advanced Parameter Attributes
- Implementing Help Documentation

## **10. Creating Controller Scripts**

- Designing Script Execution
- Implementing a Controller Script

## **11. Creating HTML-Based Reports**

- Creating Basic HTML Reports
- Creating Enhanced HTML Reports

## **12. Creating Basic Workflows**

- Understanding Workflows
- Implementing Workflows

## **13. Working with XML Data**

- Understanding XML
- Implementing XML Manipulation

## **14. Using Advanced Scripting Techniques**

- Using External Functionality
- Adding Graphical User Interface Elements

## **15. Creating Proxy Functions**

- Designing Proxy Functions
- Implementing Proxy Functions

## **16. Building Tools in Windows PowerShell**

- Designing the Tool
- Implementing the Tool
- Testing the Tool

## Virtual Classroom Live Labs

### **Lab 1: Parameterizing a Command**

- Identify changeable values
- Declare parameters
- Use parameters in place of changeable values
- Test the script

### **Lab 2: Creating a Script Module**

- Creating a Script Module
- Saving the script module

- Adding a module-level variable
- Controlling module member visibility
- Testing the script module

### **Lab 3: Handling Errors**

- Using the Try...Catch Construct
- Handling Command Errors
- Handling Non-Command Errors
- Logging Errors to a File
- Displaying Warning Messages

### **Lab 4: Writing Commands that Use Pipeline Input and Output**

- Adding Pipeline Input Capability to Parameters
- Working with Pipeline Input
- Creating Custom Output Objects
- Outputting Objects to the Pipeline

### **Lab 5: Creating Hierarchical Command Output**

- Retrieving and Enumerating Data
- Creating Child Objects
- Creating the Parent Object
- Displaying and Object Hierarchy
- Persisting an Object Hierarchy

### **Lab 6: Debugging Scripts**

- Using Write-Debug
- Using PSBreakpoints

### **Lab 7 : Customizing Default Formatting**

- Adding a Custom Type Name to an Object
- Creating a DefaultDisplayPropertySet Type Extension
- Creating a Custom View
- Adding Type Extensions and Views to Modules and Creating a Module Manifest

### **Lab 8: Adding Advanced Parameter Attributes and Command Documentation**

- Defining Aliases and Help Messages
- Defining Parameter Validation
- Adding Comment-Based Help
- Writing a Command that Uses -Confirm and -WhatIf

### **Lab 9: Creating Controller Scripts**

- Creating a Controller Script
- Parameterizing a Controller Script
- Testing a Controller Script
- Debugging a Controller Script

### **Lab 10: Creating Reports by using HTML**

- Creating Reports by using HTML
- Converting Objects into HTML Fragments

- Combining HTML Fragments
- Adding Basic Formatting
- Creating Enhanced HTML Fragments
- Applying Conditional Formatting

#### **Lab 11: Creating Basic Workflows**

- Importing the PSWorkflow Module
- Converting a Function to a Basic Workflow
- Parallelizing Commands

#### **Lab 12: Working with XML Data**

- Loading XML
- Manipulating XML as an Object Hierarchy
- Selecting XML Elements by using XPath
- Modifying XML
- Saving XML

#### **Lab 13 : Creating Proxy Functions**

- Generating a Proxy Function Template
- Modifying the Template
- Using the Proxy Function
- Bypassing a Proxy Function

#### **Lab 14: Building Tools in Windows PowerShell**

- Designing the Tool
- Implementing the Tool
- Testing the Tool

Jun 2 - 6, 2025 | 8:30 AM - 4:30 PM EDT

Jun 9 - 13, 2025 | 11:30 AM - 7:30 PM EDT

Jul 7 - 11, 2025 | 8:30 AM - 4:30 PM EDT

Jul 21 - 25, 2025 | 11:30 AM - 7:30 PM EDT

Aug 4 - 8, 2025 | 8:30 AM - 4:30 PM EDT

Aug 18 - 22, 2025 | 8:30 AM - 4:30 PM EDT

Sep 8 - 12, 2025 | 11:30 AM - 7:30 PM EDT

Sep 15 - 19, 2025 | 8:30 AM - 4:30 PM EDT

Oct 6 - 10, 2025 | 11:30 AM - 7:30 PM EDT

Oct 27 - 31, 2025 | 8:30 AM - 4:30 PM EDT

Nov 3 - 7, 2025 | 11:30 AM - 7:30 PM EST

Nov 10 - 14, 2025 | 8:30 AM - 4:30 PM EST

Dec 8 - 12, 2025 | 8:30 AM - 4:30 PM EST

Jan 19 - 23, 2026 | 11:30 AM - 7:30 PM EST

Jan 26 - 30, 2026 | 8:30 AM - 4:30 PM EST



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PRIVATE GROUP TRAINING

5 Day

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