# Automating Administration with PowerShell

## Description

This course provides students with the fundamental knowledge and skills to use PowerShell for administering and automating administration of Windows servers. This course provides students the skills to identify and build the command they require to perform a specific task. In addition, students learn how to build scripts to accomplish advanced tasks such as automating repetitive tasks and generating reports. This course provides prerequisite skills supporting a broad range of Microsoft products, including Windows Server, Windows Client, Microsoft Azure, and Microsoft 365. In keeping with that goal, this course will not focus on any one of those products, although Windows Server, which is the common platform for all of those products, will serve as the example for the techniques this course teaches.

**Classroom Registration Price (CHF)**
3900
**Virtual Classroom Registration Price (CHF)**
3650
**Course Content**
**Module 1: Getting started with Windows PowerShell**

- Windows PowerShell overview
- Understand Windows PowerShell command syntax
- Find commands and get help in Windows PowerShell

**Module 2: Windows PowerShell for local systems administration**

- Active Directory Domain Services administration cmdlets
- Network configuration cmdlets
- Server administration cmdlets
- Windows PowerShell in Windows 10

**Module 3: Working with the Windows PowerShell pipeline**

- Understand the pipeline
- Select, sort, and measure objects
- Filter objects out of the pipeline
- Enumerate objects in the pipeline
- Send and pass pipeline data as output

**Module 4: Using PSProviders and PSDrives**

- Using PSProviders
- Using PSDrives

**Module 5: Querying management information by using CIM and WMI**

- Understand CIM and WMI
- Query data by using CIM and WMI
- Make changes by using CIM and WMI

## Module 6: Working with variables, arrays, and hash tables

- Use variables
- Manipulate variables
- Manipulate arrays and hash tables

## Module 7: Windows PowerShell scripting

- Introduction to scripting with Windows PowerShell
- Script constructs
- Import data from files
- Accept user input
- Troubleshooting and error handling
- Functions and modules

## Module 8: Administering remote computers with Windows PowerShell

- Use basic Windows PowerShell remoting
- Use advanced Windows PowerShell remoting techniques
- Use PSSessions

## Module 9: Managing Azure resources with PowerShell

- Azure PowerShell
- Introduce Azure Cloud Shell
- Manage Azure VMs with PowerShell
- Manage storage and subscriptions

## Module 10: Managing Microsoft 365 services with PowerShell

- Manage Microsoft 365 user accounts, licenses, and groups with PowerShell
- Manage Exchange Online with PowerShell
- Manage SharePoint Online with PowerShell
- Manage Microsoft Teams with PowerShell

## Module 11: Using background jobs and scheduled jobs

- Use background jobs
- Use scheduled jobs

## Lab / Exercises

- Official Microsoft Labs

## Documentation

- Access to Microsoft Learn (online learning content)

## Participant profiles

- IT Professionals who are already experienced in general Windows Server, Windows client, Azure, and Microsoft 365 administration
- IT Professionals already experienced in server administration, including Microsoft Exchange Server, Microsoft SharePoint Server, and Microsoft SQL Server

## Prerequisites

- Experience with Windows networking technologies and implementation
- Experience with Windows Server administration, maintenance, and troubleshooting

## Objectives

- Describe the functionality of Windows PowerShell and use it to run and find basic commands
- Identify and run cmdlets for local system administration
- Work with the Windows PowerShell pipeline
- Use PSProviders and PSDrives to work with other forms of storage
- Query system information by using WMI and CIM
- Work with variables, arrays, and hash tables
- Create basic scripts in Windows PowerShell
- Administer remote computers with Windows PowerShell
- Manage Azure resources with PowerShell
- Manage Microsoft 365 services with PowerShell
- Use background jobs and scheduled jobs

**Niveau**
Avancé
**Duration (in Days)**
5
**Reference**
AZ-040T00