MS-PL500T00: MICROSOFT POWER AUTOMATE RPA DEVELOPER

DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
5 Days	Intermediate	Microsoft Power Platform	Instructor-led	NA

INTRODUCTION

Candidates for this course automate time-consuming and repetitive tasks by using Microsoft Power Automate. They review solution requirements, create process documentation, and design, develop, troubleshoot, and evaluate solutions. Candidates work with business stakeholders to improve and automate business workflows. They collaborate with administrators to deploy solutions to production environments, and they support solutions.

AUDIENCE PROFILE

If you're a developer with a keen interest in providing automated solutions for your organization, this certification could be a great fit for you. You automate time-consuming and repetitive tasks by using Microsoft Power Automate. You review solution requirements, create process documentation, and design, develop, deploy, integrate, troubleshoot, and evaluate solutions. Working with business stakeholders, you help to improve and automate business workflows.

PREREQUISITES

Before attending this course, learners need to have the following skills or experience:
‒ Basic understanding of Power Platform.
‒ Experience in software development.
‒ Experience building cloud flows
‒ Basic understanding of Microsoft Power Automate
‒ A basic understanding of Microsoft Power Platform.
‒ Familiarity with Microsoft Power Platform, Power Apps.
‒ General developer experience.

COURSE OBJECTIVES

After completing this course, students will be able to:
‒ Power Platform Robotic Process Automation overview
‒ Build and optimize cloud flows in Power Automate
‒ Desktop flows and Robotic Process Automation in Power Automate
‒ Connecting and sharing cloud flows to desktop flows in Power Automate for desktop
‒ Custom connectors for Microsoft Power Platform

COURSE CONTENT

Module 1: Introduction to Microsoft Power Platform developer resources
In this module, students will be given a broad-scoped overview of the developer experience as it relates to Microsoft Power Platform. It will cover a high-level introduction how the ecosystem is represented, with the intended audience being a software developer with limited experience in working with Microsoft Power Platform.
Lessons:
‒ Introduction to Microsoft Power Platform for developers
‒ Overview of Dataverse and the Common Data Model
‒ Extending Power Platform with Azure

‒ Power Platform environments
‒ Exercise - Prepare development environment
‒ Check your knowledge
‒ Summary
In this module you will be able to:
‒ Explain what solution components exist within Microsoft Power Platform.
‒ Explain key components of Microsoft Dataverse and the Common Data Model.
‒ Explain what Azure solution elements relate to Microsoft Power Platform.
‒ Explain what AI Solutions exist as it relates to Microsoft Power Platform.
‒ Navigate the Developer Guide successfully in support of their

Microsoft Power Platform development efforts.

Module 2: Manage solutions in Power Apps and Power Automate
Microsoft Power Apps and Power Automate include such package features as apps from Microsoft Power Apps, site maps, flows, entities, customer connectors, and more. In this module, students will learn how to manage solutions with Power Automate.
Lessons:
‒ Introduction
‒ Add and remove apps, flows, and entities in a solution
‒ Edit a solution-aware app, flow, and table

– Exercise - Import and export solutions
– Build and deploy a complex solution with flows, apps, and entities
– Automate solution management
– Check your knowledge
– Summary

In this module, you will:
– Package existing items into a solution.
– Create solutions.
– Edit existing solution-aware apps, flows in a solution.
– Import and export solutions.
– Deploy complex solutions with many components.
– Learn about component dependency on other components.

Module 3: Introduction to Power Automate process mining

In this module, students will learn the basics of process mining and introduces key concepts of the Power Automate Process Mining desktop application.
Lessons:
– Introduction
– Process mining concepts and its role in hyperautomation
– Use process mining
– Process mining in Power Automate
– Process mining in Power Automate web portal
– Power Automate Process Mining desktop app
– Check your knowledge
– Summary

This module explains the following concepts:
– Process mining and its role in hyperautomation
– How to use process mining
– Process mining in Power Automate and the web portal
– Power Automate Process Mining desktop application

Module 4: Optimize your business process with process advisor

With the process advisor capability in Power Automate, students will learn to record existing business processes and analyse them to increase efficacy by tracking completion times and mapping various actions that are involved. The first step to automating a solution is knowing the process,

and process advisor helps simplify that task.
Lessons:
– Introduction
– Get familiar with process advisor
– Create your first recording
– Edit recordings and group actions
– Analyse recordings and interpret results
– Automation recommendations
– Check your knowledge
– Summary

This module explains how to:
– Create your first recording.
– Edit recordings and group actions.
– Analyse recordings and interpret results.

Module 5: Get started with Power Automate

In this module, students will learn about Power Automate, which is an online workflow service that automates actions across the most common apps and services.
Lessons:
– Introducing Power Automate
– Create your first flow
– Exercise - Create recurring flows
– Exercise - Monitor incoming emails
– Exercise - Share flows
– Troubleshoot flows
– Module assessment
– Summary

In this module, you will:
– Create a flow that automatically saves email attachments.
– Learn how to create a button flow to send yourself a reminder.

Module 6: Introduction to expressions in Power Automate

In this module, students will learn how to get the most out of their data using functions to create expressions.
Lessons:
– Introduction to expressions
– Get started with expressions
– Notes make things easier
– Types of functions
– Write complex expressions
– Exercise - Creating a manual flow and using expressions
– Check your knowledge
– Summary

This module explains how to:

– Use one or more functions to create expressions.
– Use functions to retrieve data, change data, evaluate data, and more.

Module 7: Best practices for error handling in Power Automate flows

This module will focus on how students can use Configure run after, an option that is available for flow actions, to help isolate errors. It also overviews the built-in error reports.
Lessons:
– Introduction
– Configure run after option
– Power Automate analytics
– Check your knowledge
– Summary

This module explains how to:
– Gain insight into the settings options for flow actions.
– Learn about the Configure run after option.
– Use the Configure run after option to handle errors.
– Discover Microsoft Power Automate analytics.

Module 8: Overview of HTTP connectors in Power Automate

In this module students will learn how HTTP connectors use Representational State Transfer (REST) architecture, which allows users to interact directly with data by using web requests. Additionally, it allows flow makers to use the full potential of the web service offerings in a secure manner while still using Power Automate flows. This module will focus on the built-in and premium HTTP connectors.
Lessons:
– Introduction
– HTTP Webhook built-in connector
– HTTP with Microsoft Entra ID connector
– When an HTTP request is received built-in connector
– Check your knowledge
– Summary

This module explains how to:
– Discover the built-in and premium HTTP connectors.
– Learn about the HTTP Webhook connector.
– Review the HTTP with Azure AD connector.

– Learn about the When an HTTP request is received built-in connector.

Module 9: Troubleshoot slow-running flows in Power Automate
In this module, students learn how integration of Power Automate flows and SharePoint has resulted in an exponential growth of flows that are triggered by adding, editing, or deleting Microsoft Lists or documents. Occasionally, flows fail or are stuck while running. Flows streamline repetitive tasks and paperless processes, so it is important to know how to troubleshoot failures and return flows to successful runs.
Lessons:
– Introduction
– Use the Compose and Variable actions to view data
– Power Automate analytics
– Microsoft Power Platform admin center
– Redesign your flow
– Check your knowledge
– Summary
In this module, you will:
– Discover SharePoint connector limits.
– Use the Compose and Variable actions to view data.
– Learn about Power Automate analytics.
– Review data policies.
– Redesign your flows.

Module 10: Build your first Power Automate for desktop flow
In this module, students will learn the basics of Power Automate for desktop flows. Additionally, learn how to build the first flow to help automate a repetitive task, freeing up time for more important endeavours.
Lessons:
– Introduction
– Set up the environment
– Explore Power Automate for desktop
– Create your first Power Automate for desktop flow
– Record Power Automate for desktop actions
– Edit and test recorded actions
– Check your knowledge
– Summary
In this module, you will:

– Learn how to use Power Automate to create a new desktop flow.
– Record actions that are performed in a desktop-based application.
– Perform a test run of the new desktop flow.

Module 11: Configure flow control in Power Automate for desktop
In this module, students will learn the ability to alter the order in which actions and functions are implemented is called flow control. Power Automate for desktop enables flow control through the flow control actions.
Lessons:
– Introduction
– Flow control actions
– Check your knowledge
– Summary
In this module, you will:
– Learn how flow control works.
– Learn how to use the flow control group of actions to direct and manipulate the flow.

Module 12: Adjust process behaviour using conditional actions with Power Automate for desktop
This module helps students understand how conditional actions allow you to modify flow actions at runtime, based on information available in the environment.
Lessons:
– Introduction to conditional actions
– Conditional actions
– The If group of actions
– Exercise - If group of actions
– The Switch group of actions
– Check your knowledge
– Summary – Conditionals
In this module, you will:
– Use "If" conditionals
– Deploy "Switch" conditionals in order to compare a single variable with multiple possible values
– Explore additional options when evaluating conditions
– Provide default and alternative behaviours for flows based on the environment data

Module 13: Handle variables in Power Automate for desktop
In flow development, students may need to reuse information in

various actions. Variables act like storage bins that save valuable information for later use when a flow is running.
Lessons:
– Introducing variables
– Create, edit, and use variables
– Variable data types
– Advanced data types
– Input and output variables
– Variable manipulation
– Sensitive variables
– Exercise - Create, access and manipulate variables
– Check your knowledge
– Summary
This module explains how to:
– Create, edit, and manipulate variables.
– Examine the variables pane.
– Become familiar with various variable data types and their properties.
– Configure input and output variables.

Module 14: Define input and output parameters in Power Automate
Varying your input and output parameters allows your outcomes to change, or be variable, for every run of your flow. This module defines input and output parameters for desktop flows, which allows your flows to comprehensively handle tasks and processes with conditional input and output.
Lessons:
– Introduction
– Set up in Power Automate
– Define an input variable
– Set input variables
– Define output variables
– Add UI elements and test
– Check your knowledge
– Summary
This module explains how to:
– Create a desktop flow with predefined inputs.
– Record actions that are performed in the Contoso invoicing desktop application by using your predefined inputs and capturing application data for output.
– Perform a test run of a new desktop flow with a new set of inputs.

Module 15: Automate repetitive tasks using loops in Power Automate for desktop

In this module, students will learn how loops are used to automate repetitive tasks by executing a block of actions multiple times.
Lessons:
– Introduction to loops
– Loop actions
– Simple loop actions
– For each loop actions
– Loop condition actions
– Exercise - Loops
– Check your knowledge
– Summary

In this module, you will:
– Use simple loops to perform a given number of repetitions and iterate through data
– Deploy loop conditions in order to repeat actions until a condition is met
– Iterate through the items of a list using for each loops
– Explicitly end loops when required

Module 16: Generate Power Automate for desktop flows by recording

In this module, students will learn how the recorder can be used to automatically generate blocks of actions, based on the user's interaction with the workstation.
Lessons:
– Introduction to the Power Automate for desktop recorder
– Create desktop flows using the recorder
– Exercise - Use the recorder to automate web applications
– Exercise - Use the recorder to automate desktop applications
– Check your knowledge
– Summary

In this module, you will:
– Use the recorder to generate actions automating local Windows UI-based tasks
– Deploy the recorder to automate interactions with a web browser
– Preview and edit the automatically generated actions during and after the recording

Module 17: Scripting in Power Automate for desktop

In this module, students will learn how Power Automate for desktop enables you to automate complex scenarios using scripts in VBScript,

JavaScript, PowerShell, and Python.
Lessons:
– Introduction
– Scripting actions
– Exercise - Calculate modulo with VBScript
– Exercise - Use JavaScript to find the last day of the current month
– Check your knowledge
– Summary

This module explains:
– How to use scripting actions.
– Create two flows using VBScript and JavaScript.

Module 18: Web automation in Power Automate for desktop

This module looks at how Web applications are critical components of most organizations. Power Automate for desktop supports the automation of all major browsers through its browser automation actions.
Lessons:
– Introducing web automation
– Launch, close, and handle browsers
– Handle web pages and forms
– Extract data from web pages
– Direct web access and scripting
– Exercise - Extract stocks from MSN
– Check your knowledge
– Summary

In this module, you will:
– Learn how to configure browser automation actions.
– Learn how to extract data from web pages.
– Create a flow that extracts gainer stocks from the MSN website.

Module 19: Configure exception and error handling in Power Automate for desktop

This module introduces exception handling, which is a mechanism that allows Power Automate for desktop to handle and recover from unexpected circumstances and issues that might occur during a flow run.
Lessons:
– Introduction
– About exceptions
– Exception handling
– Exercise – Exception handling
– Check your knowledge
– Summary

In this module, you will:
– Configure the exception handling properties of individual actions.

Module 20: Connect a cloud flow to desktop flows in Power Automate for desktop

Implementing business processes or completing everyday tasks often requires you to use multiple systems, data sources, or a combination of desktop applications and cloud services. This module explains how to use gateways to connect desktop flows to other technology and cloud services and use robotic process automation (RPA) to its fullest potential.
Lessons:
– Introduction
– Setup process in Power Automate for desktop
– Create a new cloud flow
– Connect your cloud and desktop flows
– Test your new connection
– Check your knowledge
– Summary

This module explains how to:
– Learn how to install the Power Automate for desktop application and how to create a desktop and cloud flow.
– Set up an on-premises data gateway to enable the cloud flow to run the desktop flow on your device.
– Add the desktop flow to the new cloud flow.
– Test the new desktop and cloud flows.

Module 21: Share a cloud flow with Power Automate

When you create a new Power Automate cloud flow, you are the only one who can view, edit, and run it. By sharing a cloud flow, you can allow other users within your organization to run or help edit your automation. In this module, students will learn how and when to share cloud flows and which types to use.
Lessons:
– Introduction
– Share by using co-ownership
– Share by using the run-only option
– Use the Send a copy feature
– Exercise - Send a copy
– Solutions and sharing
– Check your knowledge

- Summary

This module explains these concepts:

- Learn the ways that you can share a cloud flow and the benefits of each.
- Discover whom you can share cloud flows with.
- Learn the differences in sharing various types of cloud flows.
- Learn how connections are handled when you share cloud flows.
- Find out about different options for sharing through co-ownership.
- Learn about run-only permissions.
- Discover the differences between sharing solution and non-solution cloud flows.

Module 22: Get started with custom connectors in Microsoft Power Platform

Connectors help make it easier for app and flow makers to connect to other apps, data, and devices in the cloud. In this module, students will learn how to configure and use custom connectors with Microsoft Power Apps, Microsoft Power Automate, and Microsoft Azure Logic Apps.

Lessons:

- Introduction
- Demo of the maker portal experience
- Explore custom connector configuration options
- Exercise - Create a new connector in a solution
- Use a custom connector
- Exercise - Use a connector from Power Automate
- Check your knowledge
- Summary

This module explains how to:

- Learn about the role of custom connectors.
- Build a connector and use it in a Power Automate flow.

Module 23: Discover and use Web APIs with Power Apps

In this module, students will learn how they can build custom connectors to have their Power Apps applications interact with web APIs.

Lessons:

- Introduction

- What are custom connectors
- Exercise - Create a custom connector from Visual Studio
- Exercise - Create a custom connector from Azure API Management
- What is OpenAPI and why you should use it
- Exercise - Create a custom connector from an OpenAPI document
- Test the custom connector
- Exercise - Test the custom connector
- Exercise - Use the custom connector in Power Apps canvas app
- Module assessment
- Summary

This module explains how to:

- Create a custom connector using Visual Studio
- Create a custom connector using Azure API Management
- Create a custom connector using an OpenAPI document
- Use a custom connector in a Power Apps app to call a web API

Module 24: Configure custom connectors with authenticated APIs in Microsoft Power Platform

Custom connectors can provide access to custom or third-party APIs that are accessible via public endpoints. In this module, students will learn how to configure custom connectors with authenticated APIs in Microsoft Power Platform.

Lessons:

- Introduction
- Authentication options
- Use APIs with Azure AD
- Configure Microsoft Entra ID authentication
- Exercise - Use graph API from a custom connector
- Share and move between environments
- Check your knowledge
- Summary

In this module, you will:

- Learn about authentication options.
- Learn how to use APIs with Microsoft Entra ID.
- Use a graph API from a custom connector.
- Share and move between environments.

Module 25: Configure policy templates for custom connectors in Microsoft Power Platform

Policies allow you to modify the behaviour of a custom connector at runtime. You can use policies to perform data conversion, route requests, set parameter values, and more. You can configure policies directly in the custom connector API properties file before import, or you can do it from the maker portal in the custom connector designer by applying policy templates.

Lessons:

- Introduction
- Use expressions to access runtime values
- Use policies for data conversion
- Configure host URL and routing
- Add or update values
- Exercise - Use a policy template to dynamically set the host URL
- Check your knowledge
- Summary

In this module, you will:

- Discover how policies can modify the behaviour of custom connectors at runtime.
- Apply policy templates to a custom connector.

Module 26: Create Microsoft Power Platform OpenAPI custom connectors

You can define extensions to OpenAPI to configure specific features that are supported by custom connectors in Microsoft Power Platform. This module covers authentication, actions, and triggers that are used with OpenAPI connectors.

Lessons:

- Introduction
- Use OpenAPI extensions
- Use the dynamic list of values extensions
- Use dynamic schema
- Exercise - Use OpenAPI extensions
- Check your knowledge
- Summary

In this module, you will:

- Learn about OpenAPI extensions.

ASSOCIATED CERTIFICATION & EXAM

This course will prepare delegates to write the PL-500: Microsoft Power Platform Developer exam.