Robotic Process Automation Foundation

Syllabus

May 2022

1 Introduction

The Service Automation Framework provides advice and guidance for the design and delivery of automated services. The Robotic Process Automation Foundation (RPAF) focuses on the fundamentals of RPA technology, and how organizations can use RPA to automate workflows and processes.

This syllabus covers the Robotic Process Automation Foundation (RFAF®) examination. It is based on the *Service Automation Framework Body of Knowledge* and the *Robotic Process Automation Handbook*.

The primary purpose of the syllabus is to provide a basis for accreditation for the Robotic Process Automation Foundation (RPAF) certification and qualification. It documents the learning outcomes related to the use of Service Automation Framework and describes the scope of the requirements a candidate is expected to meet to demonstrate that these learning outcomes have been achieved at each qualification level.

The target audience for this document is:

- Exam Board
- Exam Panel
- APMG Assessment Team
- Accredited Training Organizations.

This syllabus informs the design of the exams and provides accredited training organizations with a more detailed breakdown of what the exams will assess. Details on the exam structure and content are documented in the Robotic Process Automation Foundation Examination Design.

2 Robotic Process Automation Foundation Qualification

2.1 Purpose of the Robotic Process Automation Foundation Qualification

The Robotic Process Automation Foundation (RPAF) course is an introduction to RPA concepts and technologies, and how they can be used in professional organizations to increase quality and efficiency. By using Robotic Process Automation, organizations can automate repetitive processes and tasks, making processes leaner and more effective.

Robotic Process Automation has quickly risen in popularity in recent years, mainly driven by an increased focus on automation practices in the financial and insurance industry. Gartner research indicates RPA technologies can help reduce operational costs with 30% by 2024. The main benefits of Robotic Process Automation include improved customers satisfaction, increased operational efficiency, and higher levels of quality.

The RPA Foundation course is a vendor-neutral, comprehensive, and practical course that explains the fundamentals of RPA technology, as well as the workflow design aspects and techniques. The course covers practical guidance that will teach you how to set up bots that execute processes, and how your organization can set the first steps with the implementation of RPA. The course curriculum of the RPA Foundation course is fully aligned with the structure of the Service Automation Framework.

In this course, participants will get an overview of the fundamental drivers and technologies that make up Robotic Process Automation. Participants will learn how to design automated processes, and how to use robots and scripts to automate workflows and processes. Additionally, the course also covers quality criteria for RPA design, as well as implementation best practices.

This course positions learners to successfully complete the Robotic Process Automation Foundation certification exam.

2.2 Course Objectives

The course objectives of the Robotic Process Automation Foundation course include a practical understanding of:

- The history of robotic process automation and its core benefits.
- The business drivers for robotic process automation.
- How RPA can help organizations reduce operational costs, whilst remain high-quality of service.
- The inter-relationship between Robotic Process Automation, Service Automation and Business Process Automation.
- The technical structure and components of RPA platforms.
- RPA workflow design methodologies and activity planning (variables, arguments, data types and collections.
- Specification of sequence and control flow in workflow design.
- Common RPA functions and techniques, including Excel automation, database automation, text extraction and email automation.
- Monitoring aspects of RPA, including logs, audit, alerts, and role management.
- RPA quality controls and exception handling of workflows.
- Automation Orchestration for managing automation tasks and actions
- The structure and setup of RPA projects in organizations and the setup of the RPA Centre of Excellence.
- Continual improvement practices for RPA

2.3 Target Audience

The target audience of the Robotic Process Automation Foundation course includes Management, Operations, Developers and Testing professionals such as:

- Anyone starting or leading an automation transformation program
- Application Developers
- Automation Architects
- Automation Engineers
- Business Managers
- Change Agents
- Consultants
- IT Directors
- IT Managers
- IT Team Leaders
- Product Owners
- Scrum Masters
- System Integrators
- Tool Providers

There is no mandatory prerequisite to obtain the Service Automation Foundation Qualification.

2.4 Examination Structure

Successfully passing (65%) the 60-minute examination, consisting of 40 multiple-choice questions, leads to the Robotic Process Automation Foundation (RPAF) Certificate. The examination and certification process is administered by APMG-International on behalf of the Service Automation Framework Alliance.

2.5 Learning Materials

Participants to the Robotic Process Automation Foundation course will receive the following study materials:

- Sixteen (16) hours of instructor-led training and exercise facilitation
- Learner Manual (excellent post-class reference)
- Participation in unique exercises designed to apply concepts
- Sample documents, templates, tools and techniques
- Access to additional value-added resources and communities

3 Assessment Model

Each learning outcome in the High-Level Performance Definition requires the candidate to demonstrate specific knowledge and skills. For each learning outcome a number of learning outcome measures are identified which are evaluated in the examination, in accordance with the Examination Design, to confirm that the learning outcome has been achieved. These learning outcome measures are shown as syllabus topics and define the scope of the standard required to achieve the qualification.

A classification widely used when designing assessments for certification and education is the Bloom's Taxonomy of Educational Objectives. This classifies learning objectives into six ascending learning levels, each defining a higher degree of competencies and skills. (Bloom et al, 1956, Taxonomy of Educational Objectives).

APMG have incorporated this into a Learning Outcomes Assessment Model that is then used to develop each qualification's Assessment Model. The model provides a simple and systematic means for assessing and classifying the learning outcome measures.

This structured approach helps to ensure:

- The appropriate level is identified for a qualification
- A clear delineation in learning level content between different qualifications
- Wording is standardized and syllabi are presented consistently across APMG's qualification portfolio
- Exam questions and papers are consistent in their design.

The Foundation qualification examines at levels 1 (recall) and 2 (understand). The Master qualification tests at levels 2 (understand), 3 (apply) and 4 (analyse).

Service Automation Framework Assessment Model				
	1. Recall	**2. Understand**	**3. Apply**	**4. Analyse**
APMG Learning Level Definition	*Remember previously learned information*	*Grasp the meaning and make sense of information*	*Use information to perform a skill or task*	*Identify whether information has been used appropriately according to the rules and guidance*
Generic APMG Headers *For introducing the learning outcome measures (topics) in the Syllabus*	Recall terms and key facts about concepts, principles and procedures from the reference material	Understand key facts, concepts, principles and procedures from the reference material	Apply key facts, concepts, principles and procedures to a given scenario	Differentiate between appropriate and inappropriate use of the reference material in a given scenario
Qualification Example	Recall terms and key facts about concepts, techniques, design elements and processes relating to the syllabus area	Understand the concepts, techniques, design elements and processes relating to the syllabus area	Apply particular concepts, techniques, design elements and processes relating to the syllabus area to a given scenario	Differentiate between appropriate and inappropriate use of particular concepts, techniques, design elements and processes relating to the syllabus area to a given scenario

4 Qualification Scope

The definition of scope for each qualification is presented in the syllabus tables at the end of this document. Each syllabus area is a unit of learning that relates to the reference material or training course module.

The following syllabus areas and learning outcomes are identified.

Syllabus Area Code	**Syllabus Area Title**	**Exam Questions**
RPAF1	Introduction to RPA	6
RPAF2	RPA Platforms and Architectures	4
RPAF3	RPA Process Design and Implementation Process	6
RPAF4	Structuring RPA Workflows, Functions and Techniques	4
RPAF5	Monitoring and Control RPA	5
RPAF6	RPA Techniques and Use Cases	5
RPAF7	Automation Orchestration	4
RPAF8	Setting Up RPA Projects	6
	Total	**40**

5 Syllabus Presentation

For each syllabus area the learning outcome measures are presented in order of learning level and are introduced by a standard header. There is only one header at each learning level for each syllabus area. The wording in this header is derived from the Assessment Model. Each measure is specific to a learning level.

Each of the syllabus areas is presented in a similar format as follows:

Syllabus Area Code **LC [2]**		**Syllabus Area:** ***SAF Syllabus Area* (XX) Theme** [1]	**Foundation**	**Practitioner**	**Primary References**
Level	Topic				
Recall terms and key facts about the concepts, principles and procedures relating to Service Automation Concepts and Key Drivers [3] **Specifically to recall:**					
01 [4]	01 [5]	[6] The definition of the practice Service Automation and the main elements that are part of this definition.	[7] ✓		[8] P175-178 P177-182
01	02				

Key to the Syllabus Area table

1	Syllabus Area	Unit of learning, e.g. course module, key activity area or section of the reference guide.
2	Syllabus Area Code	A unique 2-character code identifying the syllabus area.
3	Learning Level Header	Header introducing the syllabus topics *(learning outcome measures)* for a given learning level.
4	Level	Learning level of the learning outcome measure..
5	Topic Reference	Number of the topic within the learning level.
6	Topic Description *(Learning Outcome Measure)*	Precise and specific description of what is required of the candidate to demonstrate that a learning outcome has been achieved.
7	Foundation/Practitioner	Shows at which qualification level the topic is assessed. Note: A measure is only applied at one qualification level.
8	Primary Reference	The main reference supporting the learning outcome measure.

6 Detailed Syllabus Description

The table below specifies the learning outcomes of the RPA Foundation Qualification, and the assessment criteria used to assess a candidate's achievement of these learning outcomes, after a course of study.

Each of the syllabus areas is presented in a similar format as follows:

Syllabus Area Code **RPAF1**		**Syllabus Area:** ***Introduction to Robotic Process Automation***	**Foundation**	**Practitioner**	**Primary References**
Describe the concept of Robotic Process Automation and its key business drivers in the professional organizations. **Specifically, to recall:**					
01	01	Describe the key characteristics of a High Performing Back Office • Centralized • Standardized • Optimized • Technology-enabled • Automated	✓		Module 1
01	02	Describe the definition of Robotic Process Automation	✓		Module 1
01	03	Describe the characteristics of Swivel Chair Processes • Rule-driven • Voluminous • Data-Intensive • Repetitive • Digital Inputs	✓		Module 1
01	04	Understand the business Drivers of RPA • Operational Efficiency o Reduction of Cost o Process Efficiency o Process Accuracy o Regulatory and Compliance • Customer Satisfaction o Decreased Delivery Time o Process Transparency o Intuitive UI	✓		Module 1
01	05	Understand the differences between RPA, SAF and BPM	✓		Module 1
01	06	Understand the nature and purpose of different RPA Centres of Excellences: • Centralized • Federated • Hybrid	✓		Module 1

Syllabus Area Code		Syllabus Area:	Foundation	Practitioner	Primary References
RPAF2		***RPA Platforms and Architectures***			
Describe and explain how RPA Platforms are structured, the core components of RPA platforms, and the RPA Solution Architecture **Specifically, to recall:**					
01	01	Describe the fundamental technical capabilities of RPA Platforms • Artificial Intelligence • Screen Scraping • Business Process Automation	✓		Module 2
01	02	Describe the nature and purpose of the components of the RPA Solution Architecture • Robot Designer • Control Center • Orchestration • Runtime Application	✓		Module 2
01	03	Describe decision criteria for RPA Technology evaluations • Technical Criteria • Cost • Ease of Use • Vendor Support	✓		Module 2
01	04	Describe critical considerations for RPA Technology Adoption • Security • Credentialing • Privacy	✓		Module 2

Syllabus Area Code		Syllabus Area:	Foundation	Practitioner	Primary References
RPAF3		***RPA Process Design***			
Explain how to design RPA Processes and key techniques for RPA Process Design **Specifically, to recall:**					
01	01	Describe the stages to design automated processes: • Identifying the process • Create a high-level process design • Define the As-Is Process Map • Define the To-Be Process Map	✓		Module 3
01	02	Describe the ten steps for analysing a business process, and understand how these steps contribute to sound process design	✓		Module 3
01	03	Describe the purpose and application of the Service Automation Blueprinting technique	✓		Module 3

Syllabus Area Code		Syllabus Area:	Foundation	Practitioner	Primary References
RPAF3		***RPA Process Design***			
01	04	Describe the seven components of a Service Automation Blueprint: • Demographics • Psychographics • User Actions • Physical Evidence • Technology Interface • Supporting Processes • Company Functions	✓		Module 3
01	05	Describe the six stages of RPA Implementation and their corresponding activities	✓		Module 3
01	06	Describe stakeholders during the RPA Implementation Process and the activities they support	✓		Module 3

Syllabus Area Code		Syllabus Area:	Foundation	Practitioner	Primary References
RPAF4		***Structuring RPA Workflows, Functions and Techniques***			
Explain how RPA Workflows can be structured, and the most important techniques that are used to structure RPA Workflows: **Specifically, to recall:**					
01	01	Describe the different types of robots in RPA solutions: • Attended Robots • Unattended Robots	✓		Module 4
01	02	Describe the difference and application of common variable types: • String • Boolean • Float • Date-and-Time • Data Table • Array	✓		Module 4
01	03	Describe the purpose and properties of arguments, and how they differ from variables	✓		Module 4
01	04	Describe the fundamental design characteristics of RPA workflows: • Input actions • Output actions	✓		Module 4

Syllabus Area Code		Syllabus Area:	Foundation	Practitioner	Primary References
RPAF5		***Monitoring and Control in RPA***			
Understand how advanced monitoring and control workflows can be used to design and structure advanced RPA workflows: **Specifically, to recall:**					
01	01	Describe the definition of control flow and its purpose in RPA solutions	✓		Module 5
01	02	Describe the characteristics and application of decision-based control flow: • IF statements • SWITCH statements	✓		Module 5
01	03	Describe the characteristics and application of iteration-based control flow: • WHILE statement • DO WHILE statement • FOR EACH statement	✓		Module 5
01	04	Describe the nature and purpose of Low-code RPA platforms	✓		Module 5
01	05	Describe the concept and application of error handling in RPA solutions and platforms	✓		Module 5

Syllabus Area Code		Syllabus Area:	Foundation	Practitioner	Primary References
RPAF6		***RPA Techniques and Use Cases***			
Understand how data manipulation and data extraction techniques are used to create valuable use cases for organizations: **Specifically, to recall:**					
01	01	Describe the concept of data manipulation and common data manipulation operations: • Retrieving • Adding • Deleting • Modifying	✓		Module 6
01	02	Describe the following data manipulation techniques: • Data conversion • String manipulation • Regular Expressions (RegEx)	✓		Module 6
01	03	Describe the differences between common String Manipulation techniques	✓		Module 6

Syllabus Area Code		Syllabus Area:	Foundation	Practitioner	Primary References
RPAF6		*RPA Techniques and Use Cases*			
01	04	Describe the differences between different Data Table manipulation techniques	✓		Module 6

01	05	Describe the purpose and application of different data extraction techniques:
		• Output Actions
		  o Get Text
		  o Get Full Text
		  o Get Visible Text
		  o Get OCR Text
		• Other Techniques
		  o Screen Scraping
		  o Data Scraping
		  o PDF Extraction
			✓		Module 6

Syllabus Area Code		Syllabus Area:	Foundation	Practitioner	Primary References
RPAF7		*Automation Orchestration*			
Understand what orchestration is and how it is used in RPA solutions **Specifically, to recall:**					
01	01	Describe the definition of orchestration and how it is used in RPA solutions	✓		Module 7
01	02	Describe and explain the primary functions of orchestration • Serving as the control room • Monitoring the robots remotely • Ensuring correct delivery of package to the robots • Managing the queue • Scheduling of Robots • Triggering of Robots • Storing and Indexing Logs	✓		Module 7
01	03	The common capabilities of orchestration solutions: • Provisioning • Deployment • Configuration • Queueing • Monitoring • Logging • Inter-connectivity	✓		Module 7

Syllabus Area Code		Syllabus Area:	Foundation	Practitioner	Primary References
RPAF7		*Automation Orchestration*			
01	04	Describe controls to safeguard the autonomy of orchestration: • Define a security policy • Define a credentialing policy • Define a privacy policy	✓		Module 7

Syllabus Area Code		Syllabus Area:	Foundation	Practitioner	Primary References
RPAF8		*Setting Up RPA Projects*			
Understand the critical capabilities and success factors of RPA Projects **Specifically, to recall:**					
01	01	Describe four stages of RPA Maturity and their key characteristics: • Start-Up RPA Program • Emerging RPA Program • Growing RPA Program • Performing RPA Program	✓		Module 8
01	02	Describe the ten capability areas that organizations would need to address to progress along the RPA program maturity model. • Technology Capabilities • Program Management	✓		Module 8
01	03	Describe the four steps of RPA implementation and their key characteristics: • RPA Initiative Kick-Off • Process Identification • Preparation for RPA • RPA Implementation	✓		Module 8
01	04	Describe common metrics to measure RPA Program Success: • Efficiency • Employee Engagement • Compliance • Productivity • Cost	✓		Module 8
01	05	Describe key roles and responsibilities for RPA Governance: • Executive Leadership • RPA Technology Council • Business Management Champions	✓		Module 8

Syllabus Area Code		Syllabus Area:	Foundation	Practitioner	Primary References
RPAF8		*Setting Up RPA Projects*			
01	06	Describe the key roles and responsibilities of an RPA Project Team: • Infrastructure Engineer • RPA Developer • Project Manager • Technical Lead • Solution Architect • Business Analyst	✓		Module 8