

**Information Booklet cum Syllabus**  
**Of**  
**Robotics Process Automation (RPA)**  
**Revision-I**



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**National Institute of Electronics and Information Technology**  
An Autonomous Scientific Society under  
Ministry of Electronics and Information Technology, Government of India

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## 1. **About Course**

The Robotic Process Automation (RPA) specialization offers comprehensive knowledge and professional-level skills focused on developing and deploying software robots. It starts with the basic concepts of Robotic Process Automation.

## 2. **NIELIT**

National Institute of Electronics and Information Technology, NIELIT, (Erstwhile DOEACC Society) is an autonomous scientific society of the Ministry of Electronics & Information Technology, Government of India. The Society is registered under the Societies Registration Act, 1860. NIELIT was set up to carry out Human Resource Development and related activities in the area of Information, Electronics & Communications Technology (IECT). NIELIT is engaged both in Formal & Non-Formal Education in the areas of IECT besides development of industry oriented quality education and training programmes in the state-of-the-art areas. NIELIT has endeavored to establish standards to be the country's premier institution for Examination and Certification in the field of IECT. It is also one of the National Examination Body, which accredits institutes/organizations for conducting courses in IT and Electronics in the non-formal sector.

## 3. **Objective of Course**

Aim of the course is to make learner familiar with the concepts of Robotic Process Automation. RPA eliminates the need of human intervention in performing repetitive, less complex tasks just by dragging and dropping technique. As the software provides more reusable and shareable components between teams and projects, more people can work on the same type of job effectively.

### **Learning Outcomes:**

By the end of this course the participants will get acquainted with:

- Rapidly growing technology.
- Flowcharts and diagrams to create their own simple workflow.
- Learn to use several types of data inside a workflow.
- Gain expertise in Desktop, Web and Citrix Automation.

## 4. **Job Roles of Course**

After successful completion of the qualification the candidates shall be employed in the industries for following occupations:

- RPA Developer
- RPA Engineer
- RPA Expert

## 5. **Eligibility**

Pursing Diploma/Graduation

## 6. Total duration of the Course

80 Hours (Theory: 30 Hrs, Practical/Tutorial: 50 Hrs)

## 7. Course Details

### 7.1.Course Outline and Objective of Each Unit

S. No.	Unit Name	Duration (Theory) in Hours	Duration (Practical) in Hours	Total Learning Hrs.	Learning Objectives
1.	Introduction to RPA Technology	3	0	3	Able to understand the Fundamental and basic principles of Robotics Process Automation, Applications in various Industries.
2.	UiPath Architecture and Operating Model, UiPathStudio	2	3	5	Able to install the UiPath Studio and understand difference between different versions.
3.	Workflow	2	4	6	Able to understand deep knowledge of variable, arguments and different workflows.
4.	Control Flow Activities	2	3	5	Using of different Control flow activities and its use.
5.	Recording	2	3	5	Able to create workflow in UiPath using these activities.
6.	Selectors	2	3	5	Able to understand Selectors, wild card operator and its use.
7.	Errors, Exception and Debugging	2	3	5	Able to capture run time exception and handling of such type of exceptions.
8.	Excel Automation	2	3	5	Able to use different activities while using excel sheet.
9.	PDF Automation	2	3	5	Able to automate PDF related activities.

10.	Word Automation	2	3	5	Able to automate Word related activities.
11.	Email Automation	2	4	6	Able to send bulk email by using UiPath Application as well as different activities also.
12.	Web Scraping	1	4	5	Able to scrap data from any website and store into any database like excel.
13.	Document Under Standing	2	3	5	Extract data from multiple PDF files.
14.	Orchestrator	1	5	6	Run process through UiPath cloud so that user can use it from anywhere.
15.	Real Time Example	3	6	9	Able to implement real time problem.

## 8. Detailed Syllabus

Unit Name	Contents	Hrs.
Introduction to RPA Technology	<ul style="list-style-type: none"> <li>• List of RPA tools</li> <li>• Predecessors of RPA</li> <li>• Emergence and Evolution of RPA</li> <li>• Future of RPA</li> <li>• Differentiating RPA from Automation</li> <li>• Defining RPA and its Benefits</li> <li>• Types of Bots</li> <li>• Application areas of RPA</li> </ul>	3
UiPath Architecture and Operating Model, UiPathStudio	<ul style="list-style-type: none"> <li>• UI Path Installation</li> <li>• Steps to Install UiPath Studio</li> <li>• Starting UiPath Studio</li> </ul>	5
Workflow	<ul style="list-style-type: none"> <li>• Variable</li> <li>• Arguments</li> <li>• Different Pannels</li> <li>• Types of workflows/files in UiPath</li> <li>• Flow chart</li> <li>• State Machine</li> <li>• Sequence</li> </ul>	6

Control Flow Activities	<ul style="list-style-type: none"> <li>• Assign activity</li> <li>• Delay activity</li> <li>• Break activity</li> <li>• While activity</li> <li>• Do while activity</li> <li>• For each activity</li> <li>• If activity</li> <li>• Switch activity</li> </ul>	5
Recording	<ul style="list-style-type: none"> <li>• UiPath Studio Recording</li> <li>• Actions that can be recorded</li> <li>• Recorder Overview</li> <li>• Components of Recording Wizard</li> <li>• Comparison of Recording Types</li> <li>• Automatic Recording Activities</li> <li>• Manual Recording activities</li> <li>• Basic Recorder</li> <li>• Desktop Recorder</li> <li>• Web Recorder</li> </ul>	5
Selectors	<ul style="list-style-type: none"> <li>• What is Selector</li> <li>• Selector Editor</li> <li>• Selectors with wild cards</li> <li>• UI Explorer in Selector</li> <li>• UI Explorer Window</li> <li>• Full Selectors And Partial Selectors</li> </ul>	5
Errors, Exception and Debugging	<ul style="list-style-type: none"> <li>• Common Exceptions</li> <li>• Try Catch</li> <li>• Retry Scope</li> <li>• ContinueOnError Property</li> <li>• Global Exception Handler</li> </ul>	5
Excel Automation	<ul style="list-style-type: none"> <li>• Excel Application Scope</li> <li>• Excel- Related Activities</li> <li>• Data Table Activities</li> </ul>	5
PDF Automation	<ul style="list-style-type: none"> <li>• Installation of UiPath PDF Activity Package.</li> <li>• UiPath PDF Activities</li> <li>• PDF Automation</li> </ul>	5
Word Automation	<ul style="list-style-type: none"> <li>• Word Automation</li> <li>• Word Activities Pack</li> <li>• Difference between word document activity and word activity</li> <li>• Word Application Scope</li> <li>• Read Text with Word Application Scope</li> <li>• Read Text Without Word Application Scope</li> <li>• Replace Text Activity</li> <li>• Write text activity</li> <li>• Read text and then write to word file</li> <li>• Convert doc file to pdf</li> </ul>	5
Email Automation	<ul style="list-style-type: none"> <li>• Email Automation</li> <li>• Key Benefits of Email Automation</li> </ul>	6

	<ul style="list-style-type: none"> <li>• Read Email using UI Path</li> <li>• Real Time Example of Email Automation</li> </ul>	
Web Scraping	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• Scraper tools and</li> <li>• A simple web scraping exercise using UiPath Studio</li> </ul>	5
Document Under Standing	<ul style="list-style-type: none"> <li>• Introduction</li> <li>• Document Understanding Process</li> <li>• Built to process various document types</li> <li>• Out-of-the-box AI solutions</li> <li>• Accuracy improving over time</li> <li>• End-to-end automation of complex processes</li> <li>• Extracting Data from receipts Invoices retrained with one additional field</li> <li>• Framework Component</li> <li>• ML Packages</li> <li>• Pipelines</li> <li>• Document Manager</li> <li>• OCR Services</li> </ul>	5
Orchestrator	<ul style="list-style-type: none"> <li>• Introduction to Orchestrator</li> <li>• How to Login to UI Path Orchestrator</li> <li>• How to Create: <ul style="list-style-type: none"> <li>• ➤ Machine</li> <li>• ➤ Robots</li> <li>• ➤ Process</li> <li>• ➤ Jobs</li> </ul> </li> <li>• Assets</li> <li>• Trigger</li> </ul>	6
Real Time Example	<ul style="list-style-type: none"> <li>• Various Real Time Example will be discussed as per the covered syllabus.</li> </ul>	9

## 9. Examination Pattern:

- On completion of Course and after filling up the feedback form there will be a final assessment test. Date and Time for the test will be informed by the Course Coordinator / Instructor.
- The Online Test will be of 60 minutes duration, containing 50 Multiple Choice Questions (MCQs). There will not be any negative marking.
- The certificate will be issued only if the candidate maintains 75% attendance and score at least 50% marks in the test.

## 10. Hardware Requirements:

- A window Computer
- Intel Core- i3 2.6 GHz 64 bit or above
- RAM 4 GB minimum 8 GB recommended
- Storage (free disk space)- 32 GB
- Network- 5Mbps(minimum) 20 Mbps or higher recommended

## 11. Software Requirements:

- UiPath
- Microsoft Office applications
- Browsers
- Anti Virus Software

## 12. Reference Books/Study Material

Learning Robotic Process Automation by Alok Mani Tripathi

## 13. Practical Assignments

### Assignment 1.

Create a sequence that asks the user for his first and last name, and give him choices to order from his favorite snacks, and then displays his answers.

### Assignment 2.

Design a Process to perform a basic calculation using Arguments.

### Assignment 3.

Create a workflow which shows the welcome message only if the user enters the correct password.

### Assignment 4.

Design a process to read all PDF files from a folder and then close them all.



**Assignment 5.**

Design a process to Extract Initial name from full name

**Assignment 6.**

Create an automation to change the background color of excel cell/ range in Ui Path.

**Assignment 7.**

Create a process to read unread mails from an inbox of your Gmail account

**Assignment 8.**

Design a process to Generate Covid-19 report and send this report to required recipients.

**Assignment 9.**

Create a Process which reminds a user to take his medicine after every 4Hr.

### 14. Sample Questions

Create a sequence that asks the user for his first and last name, and give him choices to order from his favorite snacks, and then displays his answers.
Write a program to calculate current age?
Design a Process to perform a basic calculation using Arguments.
Build a Guessing game using Flow Chart
Design a workflow for <i>transactional</i> process using State Machine
Create a workflow which shows the welcome message only if the user enters the correct password.
Design a workflow for an integer variable will increase from 5 to 50 in increments of 5.
Create an automation process that goes through each element of an array write the length of array and each element to output panel.
Create a workflow that will input data from a spreadsheet into the form fields of RPA Challenge.
Design a process to read all PDF files from a folder and then close them all.
Automate word file using basic recording
Automate Calculator Application using Desktop recoding
Create a Gmail Login Steps using Web Recoding
Create a process to login to Amazon website and recover if browser crashes.
Handel the Format exception and System exception in basic calculation program.
Design a process to Extract Initial name from full name
Design a process to insert integer and decimal value into a string without using + operator.
Design a process to read text from multiple word documents
Design a process to Merge Multiple word files into one file
Create an automation for PDF to Text Conversion