

DEPARTMENT OF COMPUTER SCIENCE & DESIGN

COURSE MODULE OF THE SUBJECT TAUGHT FOR THE SESSION 2026-27 - (ODD SEM)

Course Syllabi with CO's

Faculty Name: Prof. Yogesh N				Academic Year: 2026 - 2027			
Department: Computer Science & Design							
Course Code	Course Title	Core / Elective	Prerequisite	Contact Hours			Total Hrs/
				L	T	P	
BCG701	Robotic Process Automation Design and Development (UiPath)	Core	Basic computer fundamentals, Familiarity with MS-Office applications.	3	0	2	40T+20P
Course Objectives	1. Understand fundamental concepts of automation using UiPath StudioX. 2. Learn and Understand UI Automation activities. 3. Learn and Understand Mail Automation and Word Automation activities. 4. Learn and Understand Excel Automation activities. 5. Learn and Understand File Automation and Presentation Automation activities.						
Topics Covered as per Syllabus							
Module-1							
Robotic Process Automation: Overview: Return on Investment (ROI), Automation Types, UiPath StudioX.							
Common Concepts: Notebook, Activity Inputs, Activity Outputs, Common Properties, Common Activities, Write Line: Message Box, Input Dialog. Modify Text., Text to Left/Right, Delay, if, Switch., Repeat Number of Times, Skip Current, Exit Loop, Get Username/Password, Get Orchestrator Asset, Save For Later, Wait for Download, Group.							
Module-2							
UI Automation: Sample Overview, Activities Reference, Use Application/Browser, Go To URL, Navigate Browser, Highlight, Take Screenshot, Check App State, Click, Type Into, Select Item, Check/Uncheck, Get Text, Get Attribute, Extract Table Data, Hover, Keyboard Shortcuts, Get Active Window, Maximize Window, Minimize Window, Hide Window, Restore Window, Move Window. App/Web Recorder.							
Module-3							
Mail Automation: Sample Overview: Desktop Outlook Setup, File System Structure, Activities Reference: Use Desktop Outlook App, Use Gmail, For Each Email, Mark Email as Read/Unread, Forward Email, Save Email Attachments, Save Email, Send Email, Send Calendar Invite. Move Email. Reply to Email. Archive Email. Delete Email.							

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Word Automation: Sample Overview: Word Setup, File System Structure, Activities Reference: Use Word File, Save Document As, Read Text, Set Bookmark Contant, Replace Text in Document, Append Text, Insert Data Table in Document, Replace Picture, Add Picture, Save Document as PDF.

Module-4

Excel Automation: Sample Overview, Activities Reference, Use Excel File, Insert Sheet, Rename Sheet, Duplicate Sheet, Delete Sheet, For Each Excel Sheet, Insert Column, Text To Columns, Delete Column, Insert Rows, Delete Rows, Find First/Last Data Row, For Each Excel Row, Write Cell, Create Pivot Table, Format as Table, Change Pivot Data Source, Refresh Pivot Table, Append Range, Copy Range, Sort Range, Clear Sheet/Range/Table, Auto Fill, Fill Range, Write Range, Read Cell Formula, Read Cell Value, Format Cells, Export to CSV., Save Excel File, Save Excel File As..., Save Excel File As PDF, VLookup, Filter, Run Spreadsheet Macro.

Module-5

File Automation: Sample Overview. Activities Reference: Get Folder Info, Folder Exists, Create Folder, Delete Folder, Copy Folder., Move Folder, For Each File In Folder, Compress/Zip Files, Extract/Unzip Files, Get File Info, File Exists, Create File, Delete File, Copy File, Move File, Write Text File, Append Line., Read Text File.

Presentation Automation: Sample Overview, File System Structure., Activities Reference, Use PowerPoint Presentation, Copy Paste Slide, Delete Slide, Add New Slide, Replace Text in Presentation, Add Text to Slide., Add Data Table to Slide, Add Image/Video to Slide, Add File to Slide., Run Presentation Macro, Save PowerPoint File As., Save Presentation as PDF.

Laboratory Component:

1. Develop automation in UiPath StudioX to demonstrate the following activities: Write Line: Message Box, Input Dialog. Modify Text., Text to Left/Right and Delay.
2. Develop automation in UiPath StudioX to demonstrate the following activities: if, Switch., Repeat Number Of Times. , Skip Current, Exit Loop.
3. Develop UI automation in UiPath StudioX to demonstrate the following activities: Use Application/Browser, Go To URL, Navigate Browser, Highlight and Take Screenshot.
4. Develop UI automation in UiPath StudioX to demonstrate the following activities: Check App State, Click, Type Into, Select Item, Check/Uncheck, Get Text, Get Attribute, Extract Table Data and Hover.
5. Develop UI automation in UiPath StudioX to demonstrate the following activities: Get Active Window, Maximize Window, Minimize Window, Hide Window, Restore Window and Move Window.
6. Develop Word automation in UiPath StudioX to demonstrate the following activities: Use Word File., Save Document As, Read Text, Replace Text in Document, Append Text, Replace Picture, Add Picture, Save Document as PDF.
7. Develop Excel automation in UiPath StudioX to demonstrate the following activities: Use Excel File, Insert Sheet, Rename Sheet, Duplicate Sheet, Delete Sheet, For Each Excel Sheet, Insert Column, Text To Columns, Delete Column.

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8. Develop Excel automation in UiPath StudioX to demonstrate the following activities: Insert Rows, Delete Rows, Find First/Last Data Row, For Each Excel Row, Write Cell, Create Pivot Table., Save Excel File As..., Save Excel File As PDF.
9. Develop Excel automation in UiPath StudioX to demonstrate the following activities: Refresh Pivot Table, Append Range, Copy Range, Sort Range, Clear Sheet/Range/Table, Auto Fill, Fill Range, Write Range, Read Cell Formula., Read Cell Value, Format Cells, Export to CSV.
10. Develop File automation in UiPath StudioX to demonstrate the following activities: Get Folder Info, Folder Exists, For Each File In Folder, Compress/Zip Files, Extract/Unzip Files, Get File Info, File Exists, Create File, Delete File, Copy File, Move File, Write Text File, Append Line., Read Text File.
11. Develop Presentation automation in UiPath StudioX to demonstrate the following activities: Use PowerPoint Presentation, Copy Paste Slide, Delete Slide, Add New Slide, Add Text to Slide., Add Data Table to Slide, Add Image/Video to Slide, Save PowerPoint File As., Save Presentation as PDF.

List of Textbooks

1. Adeel Javed, Anum Sundrani, Nadia Malik, Sidney Madison Prescott, Robotic Process Automation using UiPath StudioX: A Citizen Developer's Guide to Hyper automation, 1st Edition, Apress, April 2021.
2. Tom Taulli, The Robotic Process Automation Handbook: A Guide to Implementing RPA Systems, 2020, ISBN 13 (electronic): 978-1-4842-5729-6, Publisher: Apress.
3. Alok Mani Tripathi, Learning Robotic Process Automation, Publisher: Packt Publishing Release Date: March 2018 ISBN: 9781788470940.

Course Outcomes

1. Demonstrate Common RPA concepts using UiPath StudioX.
2. Develop UI automation in UiPath StudioX.
3. Implement Mail automation and Word automation in UiPath StudioX.
4. Develop Excel automation in UiPath StudioX.
5. Implement File automation and Presentation automation in UiPath StudioX.

Internal Assessment Marks:

- The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%.
- The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50) and for the SEE minimum passing mark is 35% of the maximum marks (18 out of 50 marks).
- A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/course if the student secures a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

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CIE for the theory component of the IPCC (maximum marks 50)

- CIE marks for the theory component are 25 marks and that for the practical component is 25 marks.
- 25 marks for the theory component are split into 15 marks for two Internal Assessment Tests (Two Tests, each of 15 Marks with 01-hour duration, are to be conducted) and 10 marks for other assessment methods. The first test at the end of 40-50% coverage of the syllabus and the second test after covering 85-90% of the syllabus.
- Scaled-down marks of the sum of two tests and other assessment methods will be CIE marks for the theory component of IPCC (that is for 25 marks).
- The student has to secure 40% of 25 marks to qualify in the CIE of the theory component of IPCC. (i.e., 10 marks).

CIE for the practical component of the IPCC

- 15 marks for the conduction of the experiment and preparation of laboratory record, and 10 marks for the test to be conducted after the completion of all the laboratory sessions.
- On completion of every experiment/program in the laboratory, the students shall be evaluated including viva-voce and marks shall be awarded on the same day.
- The CIE marks awarded in the case of the Practical component shall be based on the continuous evaluation of the laboratory report. Each experiment report can be evaluated for 10 marks. Marks of all experiments' write-ups are added and scaled down to 15 marks.
- The laboratory test (duration 02/03 hours) after completion of all the experiments shall be conducted for 50 marks and scaled down to 10 marks.
- Scaled-down marks of write-up evaluations and tests added will be CIE marks for the laboratory component of IPCC for 25 marks.
- The student has to secure 40% of 25 marks to qualify in the CIE of the practical component of the IPCC. (i.e., 10 marks).

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The Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Subject Code:	BCG701	TITLE: Robotic Process Automation Design and Development (UiPath)							Faculty Name:	Prof. Yogesh N			
List of Course Outcomes	Program Outcomes											Total	
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11		
CO-1	2	2	-	-	3	-	-	-	-	-	-	7	
CO-2	2	2	3	-	3	-	-	-	-	-	-	10	
CO-3	2	2	3	2	3	-	-	-	-	-	-	12	
CO-4	2	2	3	2	3	-	-	-	-	-	-	12	
CO-5	2	2	3	2	3	-	-	-	-	-	-	12	
Total	10	10	12	6	15	-	-	-	-	-	-	53	

Note: 3 = Strong Contribution, 2 = Average Contribution, 1 = Weak Contribution, - = No Contribution

The Correlation of Course Outcomes (CO's) and Program Specific Outcomes (PSO's)

Subject Code:	BCG701	TITLE: Robotic Process Automation Design and Development (UiPath)		Faculty Name:	Prof. Yogesh N
List of Course Outcomes	Program Specific Outcomes			Total	
	PSO-1		PSO-2		
CO-1	3		3	6	
CO-2	3		3	6	
CO-3	3		3	6	
CO-4	3		3	6	
CO-5	3		3	6	
Total	15		15	30	