Year: B. Tech III (Semester V)

Subject Name: Robotics Process Automation **Subject Code:** BTCO14504
Type of course: Professional Elective I
Prerequisite (if any):

List of Courses where this course will be prerequisite:

Rationale: This course will provide students with knowledge how enterprises can apply RPA to reduce staffing costs and human error using various tools of Robotic Process Automation. The course will also be helpful to the students to identify the business and management side of Robotic Process implementation in an organization.

Teaching and Examination Scheme:

Teaching Scheme				Theory Marks			Practical Marks		Total
L	T	P	C	TEE	CA1	CA2	TEP	CA3	
3	0	2	4	60	25	15	30	20	150

CA1: Continuous Assessment (assignments/projects/open book tests/closed book tests CA2: Sincerity in attending classes/class tests/ timely submissions of assignments/self-learning attitude/solving advanced problems TEE: Term End Examination TEP: Term End Practical Exam (Performance and viva on practical skills learned in course) CA3: Regular submission of Lab work/Quality of work submitted/Active participation in lab sessions/viva on practical skills learned in course

Content:

Sr. No.	Content	Total Hrs
1	RPA Basics – History of Automation – What is RPA – RPA vs Automation – Processes & Flowcharts – Programming Constructs in RPA – What Processes can be Automated – Types of Bots – Workloads which can be automated – RPA Advanced Concepts – Standardization of processes – RPA Development methodologies – Difference from SDLC – Robotic control flow architecture – RPA business case – RPA Team – Process Design Document/Solution Design Document – Industries best suited for RPA – Risks & Challenges with RPA – RPA and emerging ecosystem.	10
2	Recording– Recording Introduction – Basic and Desktop Recording – Web Recording – Input/Output Methods – Screen Scraping – Data Scraping -Scraping advanced techniques – Selectors – Selectors – Defining and Assessing Selectors -Customization – Debugging – Dynamic Selectors – Partial Selectors	10

3	Introduction to Blue Prism ,Setting up and getting started with Blue Prism.,Blue Prism operating model,Application Types –Windows,Main Frame, Java and Browser Based Applications.,Process Flow,Business Objects and Process Layers,Object studio and Process studio,Differences action Stages ,TML & SAP Mode,Spying Elements,Attributes,BO stages,Attach and Detach,Action inputs and outputs,Data items as Inputs	10
4	Introduction to Automation Anywhere: Introduction,Control Room and Dashboard,Basic,Windows Automation,Web Automation,Email Automation,Excel Automation,Database Operation,Advanced Third Party Integration	10
5	Introduction to UI Path:UiPath Building blocks , Excel and Email Automation ,PDF Automation, Scraping , Image and Text Automation	5

Suggested Specification table with Marks (Theory): (For B.Tech only)

Distribution of Theory Marks					
R Level	**U Level**	**A Level**	**N Level**	**E Level**	**C Level**
15	20	10	5	5	5

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

Sr No	Title of book /article	Author(s)	Publisher and details like ISBN	Year of publication / Publication Edition
1	Learning Robotic Process Automation	Alok Mani Tripathi	Publisher: Packt	Latest Edition
2	The Robotic Process Automation Handbook: A Guide to Implementing RPA	Tom tauli	Apress	
3	Robotic Process Automation Projects: Build real-world RPA solutions using UiPath and Automation Anywhere	Nandan Mulakara Arun kumar asokan	Packt	

4	Robotic Process Automation with Blue Prism Quick Start Guide	Lim Mei Ying	Packt Publishing	

Course Outcomes:

Sr. No.	CO statement	Marks % weightage
CO-1	Demonstrate insightful knowledge and skills in areas of business processes for front & back offices, basics of AI & RPA	20%
CO-2	Understand Basic Programming concepts and the underlying logic/structure related to Robotic Process Automation.	15%
CO-3	Development of bot using UI Path to automate the processes	20%
CO-4	Implement RPA for real time applications.	35%
CO-5	Identify the business and management side of RPA implementation in an organization.	10%

List of Open learning website:

https://book.akij.net/eBooks/2018/November/5be2a5c7bc9bd/Sanet.st_Learning_Robotic_Proc.pdf

https://github.com/PacktPublishing/Robotic-Process-Automation-with-Blue-Prism-Quick-Start-Guide

List of Open Source Software:

- UIPATH
- Automation anywhere
- BluePrism

FOR LAB SESSIONS:

List of Experiments:

Sr No	Practicals
1	Perform Basic operations with BluePrism
2	Perform Basic operations with UI Path
3	Perform Basic operations with Automation Anywhere

4	Perform the following using BluePrism Tool: Web Scraping Email Automation Database Automation Customer Order Automation Data Migration
5	Perform the following using UI Path Tool: Web Scraping Email Automation Database Automation Customer Order Automation Data Migration
6	Perform the following using Automation Anywhere Tool: Web Scraping Email Automation Database Automation Customer Order Automation Data Migration

Major Equipment Needed: NIL