



# ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

"ವಿಜ್ಞಾನ ಸಂಗಮ" ಬೆಳಗಾವಿ-೫೯೦೦೧೮, ಕರ್ನಾಟಕ, ಭಾರತ

## Visvesvaraya Technological University

(State University of Government of Karnataka Established as per the VTU Act, 1994)

"Jnana Sangama" Belagavi-590018, Karnataka, India

Phone: (0831) 2498100, Fax: (0831) 2405467, Website: vtu.ac.in

**Dr. A. S. Deshpande** B.E., M.Tech., Ph.D.

Registrar

Phone: (0831) 2498100

Fax: (0831) 2405467

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Date:

23 SEP 2021

### CIRCULAR

**Subject:** Updated syllabus of 18CS745 regarding...

**Reference:**

1. Approval of Chairperson BoS in CSE dated 08.09.2021
2. Approval of Hon'ble Vice-Chancellor, dated: 13.09.2021

This is to inform all concerned that the Professional Elective Course "**Robotic Process Automation Design & Development (18CS745)**" in Computer Science and Engineering program has been modified to map with chapter contents of the prescribed textbook. The updated syllabus copy has been enclosed with the circular for kind reference to the stakeholders.

The principals of all the Engineering Colleges coming under the ambit of the University are hereby informed to bring the updated syllabus of 18CS745 to the notice of the faculty and students of the CSE / department of your college.

Encl: As mentioned above.

To,

The Principals of all affiliated/ constituent /Autonomous Engineering Colleges, under the ambit of VTU Belagavi.

Copy to.

1. To the Hon'ble Vice-Chancellor through the secretary to VC, VTU Belagavi for information
2. The Registrar (Evaluation), VTU Belagavi for information.
3. The Regional Directors (I/c) of all the regional offices of VTU for circulation.
4. The Director ITI SMU CNC Belagavi for uploading on VTU website
5. PS to Registrar VTU Belagavi
6. All the concerned Special Officer/s and Caseworker/s of the academic section, VTU, Belagavi

REGISTRAR

**ROBOTIC PROCESS AUTOMATION DESIGN & DEVELOPMENT**  
(Effective from the academic year 2018-2019)

**SEMESTER-VII**

CourseCode	<b>18CS745</b>	CIEMarks	40
NumberofContactHours/Week	3:0:0	SEEMarks	60
TotalNumberofContactHours	40	ExamHours	3Hrs
		<b>CREDITS</b>	03

**Course Learning Objectives:** This course(18CS745) will enable students to:

1. To understand basic concepts of RPA
2. To Describe RPA, where it can be applied and how it implemented
3. To Describe the different types of variables, Control Flow and data manipulation techniques
4. To Understand Image,Text and Data Tables Automation
5. To Describe various types of Exceptions and strategies to handle

**Module-1**

**Contact  
Hours**  
08

**RPA Foundations-** What is RPA – Flavors of RPA- History of RPA- The Benefits of RPA- The downsides of RPA- RPA Compared to BPO, BPM and BPA – Consumer Willingness for Automation- The Workforce of the Future- RPA Skills-On-Premise Vs. the Cloud- Web Technology- Programming Languages and Low Code- OCR-Databases-APIs- AI-Cognitive Automation-Agile, Scrum, Kanban and Waterfall0 DevOps- Flowcharts.

**Textbook 1: Ch 1, Ch 2, RBT:L1,L2**

**Module-2**

**RPA Platforms-** Components of RPA- RPA Platforms-About Ui Path- About UiPath - The future of automation - Record and Play - Downloading and installing UiPath Studio -Learning Ui Path Studio- - Task recorder - Step-by-step examples using the recorder.

**Textbook 2: Ch 1, Ch 2, RBT: L1, L2**

**Module-3**

**Sequence, Flowchart, and Control Flow-**Sequencing the workflow- Activities-Control flow, various types of loops, and decision making-Step-by-step example using Sequence and Flowchart-Step-by-step example using Sequence and Control flow-Data Manipulation-Variables and Scope-Collections-Arguments – Purpose and use-Data table usage with examples- Clipboard management-File operation with step-by-step example-CSV/Excel to data table and vice versa (with a step-by-stepexample).

**Textbook 2: Ch 3, Ch 4, RBT:L1,L2**

**Module-4**

**Taking Control of the Controls-** Finding and attaching windows- Finding the control- Techniques for waiting for a control- Act on controls – mouse and keyboard activities- Working with UiExplorer- Handling events- Revisit recorder- Screen Scraping- When to use OCR- Types of OCR available- How to use OCR- Avoiding typical failure points.

**Text book 2: Ch 5 RBT:L1,L2**

## Module-5

Exception Handling, Debugging, and Logging- Exception handling- Common exceptions and ways to handle them- Logging and taking screenshots- Debugging techniques- Collecting crash dumps- Error reporting- Future of RPA

**Text book 2: Ch 8 Text book 1: Ch 13 RBT:L1,L2**

**Course outcomes:** The students should be able to:

- To Understand the basic concepts of RPA
- To Describe various components and platforms of RPA
- To Describe the different types of variables, control flow and data manipulation techniques
- To Understand various control techniques and OCR in RPA
- To Describe various types and strategies to handle exceptions

**Question paper pattern:**

- The question paper will have ten questions.
- There will be 2 questions from each module.
- Each question will have questions covering all the topics under a module.
- The students will have to answer 5 full questions, selecting one full question from each module.

**Text Books:**

1. Tom Taulli, The Robotic Process Automation Handbook : A Guide to Implementing RPA Systems, 2020, ISBN-13 (electronic): 978-1-4842-5729-6, Publisher : A press
2. Alok Mani Tripathi, Learning Robotic Process Automation, Publisher: Packt Publishing Release Date: March 2018 ISBN: 9781788470940

**Reference Books:**

1. Frank Casale, Rebecca Dilla, Heidi Jaynes, Lauren Livingston, "Introduction to Robotic Process Automation: a Primer", Institute of Robotic Process Automation.
2. Richard Murdoch, Robotic Process Automation: Guide To Building Software Robots, Automate Repetitive Tasks & Become An RPA Consultant
3. Srikanth Merianda, Robotic Process Automation Tools, Process Automation and their benefits: Understanding RPA and Intelligent Automation
4. <https://www.uipath.com/rpa/robotic-process-automation>