Miami Dade College

Course Description

CAI 4525C | Artificial Intelligence Systems Automation | 3.00 credits

Students will learn how to use automated tools to develop enterprise automation projects. Students will understand how to create variables, arguments, workflows, build and publish automated process and effective user interface automations. Prerequisites: CAI4505C and CAI 4510C.

Course Competencies

Competency 1: The student will demonstrate an understanding of discovering automation eligible processes given a business scenario by:

1. Differentiating between robotic process automation (RPA), business process automation (BPA) and digital process automation (DPA)
2. Identifying the business benefits of BPA, RPA, and DPA solutions
3. Listing automation eligible steps within processes to be built based on the business needs
4. Documenting each activity of the identified processes using layout diagrams (flowchart, sequence, state machine, and global exception handler)
5. Optimizing steps within processes through simplification and re- engineering using an automated tool.
6. Building and running automated processes using an automated tool

Competency 2: The student will demonstrate an understanding of building User Interface (UI) automation projects using an automated tool by:

1. Manipulating input methods, selectors, descriptors, and containers for desktop automation and resolution properties, and Optical Character Recognition (OCR) engines for image automation
2. Building UI Automation projects using the modern and classical designs experience using an automated tool
3. Debugging UI Automation projects built with the modern and classical experience
4. Maximizing the reliability of an UI automation by using the most appropriate activities to improve UI element identification and efficiency of the automation

Competency 3: The student will demonstrate an understanding of DataTables and Data Manipulation using an automated tool by:

1. Creating, customizing, and populating DataTable variables
2. Using the most common methods for DataTable manipulation
3. Differentiating between the categories of activities used when working with Excel files: Workbook activities and Excel App Integration activities
4. Using specific modern design activities to work with Excel files (to read data, write data, save files, etc.)
5. Using common methods to manipulate values contained in variables of type String
6. Using the RegEx builder to perform complex string manipulation

Competency 4: The student will demonstrate an understanding of testing and debugging an automation to ensure it is production ready by:

1. Listing debugging actions and panels
2. Defining remote debugging
3. Explaining the functionalities of debugging actions
4. Explaining the functionalities of debugging panels

5. Explaining the causes that affect the robot stability and how they can be tackled
6. Building the case for RPA testing
7. Describing the levels of RPA testing
8. Creating basic and data- driven test cases for RPA workflows using an automated tool
9. Exploring dedicated verification features for RPA Testing
10. Grouping tests, perform debugging, and analyze activity coverage using an automated tool
11. Exploring best practices identified by RPA developers from real automation projects

Competency 5: The student will demonstrate an understanding of how to create, configure, and provision unattended robots through Orchestration by:

1. Creating, configuring, and provisioning unattended robots using an automated tool
2. Differentiating between a background and a foreground process
3. Executing jobs using unattended robots in different ways using an automated tool
4. Using Orchestrators resources
5. Publishing, installing, and updating libraries and templates using an automated tool. f) Storing files in storage buckets and using them in automation projects
6. Creating, populating, and consuming queues
7. Describing the relationship between different queue concepts and making the correct correlations

Learning Outcomes:

- Communicate effectively using listening, speaking, reading, and writing skills
- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information.
- Use computer and emerging technologies effectively