



Western Technical College

10664101 Tag Based HMI/SCADA Systems

Course Outcome Summary

Course Information

Description	This tag-based software course explains how to create and configure a modern manufacturing execution software application. This course provides fundamental knowledge of the Wonderware visualization module and the step necessary to develop an HMI system. Students will explore setup, layout, best practice concepts, features, and functions of the software.
Career Cluster	Manufacturing
Instructional Level	Associate Degree Courses
Total Credits	2
Total Hours	54

Pre/Corequisites

Prerequisite 10620164 Automation Systems Integration

Textbooks

No textbook required.

Success Abilities

1. Cultivate Passion: Expand a Growth-Mindset
2. Cultivate Passion: Increase Self-Awareness
3. Live Responsibly: Embrace Sustainability
4. Live Responsibly: Foster Accountability
5. Refine Professionalism: Improve Critical Thinking

6. Refine Professionalism: Practice Effective Communication

Program Outcomes

1. Perform work safely
2. Troubleshoot electrical and mechanical systems and devices
3. Communicate technical information
4. Integrate automation and mechanical control systems

Course Competencies

1. Create a Modern InTouch Application.

Assessment Strategies

- 1.1. Skill Demonstration

Criteria

You will know you are successful when

- 1.1. you identify the correct software.
- 1.2. you select the objects for the application.
- 1.3. you apply the objects within the application.
- 1.4. you create a user interface.

Learning Objectives

- 1.a. Identify the correct software and objects.
- 1.b. Open the software.
- 1.c. Configure the application.

2. Examine window layout and basic navigation.

Assessment Strategies

- 2.1. Skill Demonstration

Criteria

You will know you are successful when

- 2.1. you create layout windows.
- 2.2. you configure the window.
- 2.3. you embed and configure the window graphics.
- 2.4. you edit and associate graphics to a tag.
- 2.5. you verify operation of the window.

Learning Objectives

- 2.a. Create layout windows.
- 2.b. Configure the size of the window.
- 2.c. Name the window.
- 2.d. Configure the window shape.
- 2.e. Configure the window color.
- 2.f. Embed and configure the window graphics.
- 2.g. Associate graphics to a tag.
- 2.h. Edit graphics.
- 2.i. Test the window.

3. Manage tags.

Assessment Strategies

- 3.1. Skill Demonstration

Criteria

You will know you are successful when

- 3.1. you create tags.
- 3.2. you assign tag types.
- 3.3. you verify the operation of tags in run time.
- 3.4. you edit tags.
- 3.5. you define I/O tags in the Tagname dictionary.
- 3.6. you add a watch window for tags.
- 3.7. you backup and restore the Tagname dictionary.
- 3.8. you export and import tags.
- 3.9. you monitor tags.

Learning Objectives

- 3.a. Create tags.
- 3.b. Assign tag types.
- 3.c. Test tags in run time.
- 3.d. Edit tags.
- 3.e. Define I/O tags in the Tagname dictionary.
- 3.f. Add a watch window for tags.
- 3.g. Backup and restore the Tagname dictionary.
- 3.h. Export and import tags.
- 3.i. Monitor tags.

4. Configure communications that apply to Wonderware.

Assessment Strategies

- 4.1. Skill Demonstration

Criteria

You will know you are successful when

- 4.1. you describe the protocol for configuring communications.
- 4.2. you configure the communication driver for engineering node.
- 4.3. you configure the communication driver for the operation node.
- 4.4. you enable the OI server.

Learning Objectives

- 4.a. Configure the communication driver for engineering node.
- 4.b. Configure the communication driver for the operation node.
- 4.c. Activate the Operations Integration (OI) server.

5. Examine Situational Awareness Visualizations.

Assessment Strategies

- 5.1. Skill Demonstration

Criteria

You will know you are successful when

- 5.1. you set custom properties to objects from the SAL.
- 5.2. you stylize objects from the SAL.
- 5.3. you build a custom object or modify an object.
- 5.4. you build a dashboard using SAL symbols.
- 5.5. you incorporate SAL dashboard symbols.
- 5.6. you configure SAL dashboard symbols.
- 5.7. you verify the operation of the SAL dashboard symbols.

Learning Objectives

- 5.a. Explore the Situational Awareness Library (SAL).
- 5.b. Set custom properties to objects from the SAL.
- 5.c. Stylize objects from the SAL.
- 5.d. Apply principles to build a custom object or modify an object.
- 5.e. Build a dashboard using SAL symbols.
- 5.f. Embed SAL dashboard symbols.

- 5.g. Configure SAL dashboard symbols.
- 5.h. Test the SAL dashboard symbols.

6. Incorporate the ArcestrA library and objects into applications.

Assessment Strategies

- 6.1. Skill Demonstration

Criteria

You will know you are successful when

- 6.1. you edit symbols in the ArcestrA (AA) toolbox.
- 6.2. you create a custom symbol in AA.
- 6.3. you embed AA graphics.
- 6.4. you modify a symbol in AA.
- 6.5. you create a window in the AA toolbox.
- 6.6. you set custom properties.
- 6.7. you animate objects.
- 6.8. you verify the operation of the AA objects.

Learning Objectives

- 6.a. Edit symbols in the ArcestrA (AA) toolbox.
- 6.b. Explore Dotfields in AA.
- 6.c. Create a symbol in AA.
- 6.d. Embed AA graphics.
- 6.e. Modify a symbol in AA.
- 6.f. Create a window in the AA toolbox.
- 6.g. Explore and set custom properties.
- 6.h. Animate objects.
- 6.i. Test AA objects.

7. Analyze data logs and trends.

Assessment Strategies

- 7.1. Skill Demonstration

Criteria

You will know you are successful when

- 7.1. you construct a Key Performance Indicator display.
- 7.2. you configure InTouch historical logging data visualization.
- 7.3. you configure real-time trending.
- 7.4. you configure trend client appearance and options.

Learning Objectives

- 7.a. Construct a Key Performance Indicator display.
- 7.b. Introduce InTouch historical logging.
- 7.c. Configure InTouch historical logging.
- 7.d. Visualize historical data.
- 7.e. Explore trend client.
- 7.f. Configure real-time trending.
- 7.g. Configure trend client appearance and options.

8. Explore additional features of Wonderware software.

Assessment Strategies

- 8.1. Skill Demonstration

Criteria

You will know you are successful when

- 8.1. you summarize basic settings to secure applications.
- 8.2. you configure and manage InTouch alarms.
- 8.3. you activate the application by publishing.
- 8.4. you explain the purpose of the file extension names.

8.5. you manage application files.

Learning Objectives

- 8.a. Explore security.
- 8.b. Configure and manage InTouch alarms.
- 8.c. Publish the application.
- 8.d. Explore the Web client.
- 8.e. Manage application files.