ASU Arizona State University AZNext
Workforce Training Accelerator Partnership

Interested in Smart Manufacturing?

Enroll in AZNext's Introduction to Industrial Internet of Things (IIoT) course

(IIoT) is a dynamic 10-hour course that will help you earn an ASU Micro-badge!

What is the Industrial Internet of Things?

Data is increasingly recognized as a significant asset in every major industrial sector today. There is a tremendous potential for utilizing data in improving manufacturing productivity and enabling a digitalized transformation of the factory floor, all leading to a *Smart Manufacturing Environment*. This course covers the definition, characteristics and principles of Smart Manufacturing. It will also enrich your knowledge of the Industrial Internet of things software stack with a specific focus on the MQTT protocol and how this specific technology enables the *Digital Twin*.

Where and How the program is offered?

This is an open enrollment, virtual class that will be offered live on Zoom by the ASU School of Manufacturing Systems & Networks. The course will be offered in 3 virtual 3-hour classes, scheduled on Friday morning (9.00am - 12.00pm, Mountain Time)

This workforce product was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The product was created by the recipient and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. This product is copyrighted by the institution that created it.

AZNext

Arizona State University

Closing the Skills Gap to Build the Future Workforce

AZNext is a training program designed to create a bold, innovative, and sustaining workforce development ecosystem that addresses the need for more skilled workers in IT, cybersecurity, and advanced manufacturing roles in Arizona and across the U.S.

Provided at no cost to the participant.

Contact Us

Email

AZNext@asu.edu

Website

aznext.pipelineaz.com

Social Media

Twitter: @AZNext_ASU

LinkedIn: AZNext

What will you gain?

- Technical skills and tools you can apply starting your career or in your current job and beyond
- ASU Micro-badge
- Business communication skills
- Problem-solving skills
- Knowledge in MQTT
- Opportunities to network with industry leaders

How to Apply

Link to Apply:

Questions

Email: AZNext@asu.edu

What do I need to know to take this class?

The content of the class is designed in such a way that any student or working professional in advanced manufacturing domain will benefit from this course. No prior programming knowledge or experience is needed.

Program overview

The ten-hour course introduces the student to the Industrial Internet of Things terminology, hardware and software components and vendors. The course modules offer a lecture and hands-on laboratory training in machine-2-machine communication protocol that is critical to smart factory operations

Competencies	Description
1) Intro to IIoT and Smart manufacturing	History of the Industrial Revolution, The Digitization of Manufacturing, Smart Manufacturing Definitions, standards, and terminology.
2) Machine-2-Machine Communication Methodologies	Client-Server Communication and Publish-Subscribe Based Communication in Smart Factories
3) Industrial Internet Communication	Types of cables used in Industrial Internet Environments; Hardware used in Smart Factory Floors.
4) MQTT Type Communication in Factories	MQTT based publish-subscribe communication in an industrial environment; Characteristics of MQTT; Implementation Studies
	Laboratory: Learners will initiate an MQTT communication between two endpoints via their own personal laptop or a virtual machine in the cloud.
5) Applications of MQTT in a Factory	Discuss the various applications of MQTT in a factory production within the context of a job-shop.
	Laboratory: Design MQTT data payload that will help build dashboards that assist a machine operator and a production supervisor.
6) Case Study for a Small Manufacturing Company	Learner will complete a case study involving a small manufacturing-based job-shop, while taking into account their specific constraints and requirements.
Assessment test	

Program cost

This program is offered to AZNext participants at NO COST, please keep in mind this class will be filled on a first come, first-serve basis with any additional students being put on a waitlist until seats are available.

Admission Requirements

- **17 years or older**
- **Have a high school diploma or GED**

Formatted: Font: (Default) Arial, 14 pt

Formatted: Font: (Default) Arial, 16 pt

Formatted: Space Before: 0 pt, After: 0 pt, Tab stops: 0.8", Left + 1.29", Centered

Field Code Changed

Formatted: Left

Formatted: Space After: 2.5 pt, Border: Top: (No border), Bottom: (No border), Left: (No border), Right: (No border), Between : (No border), Tab stops: Not at 0.8" + 1.29"