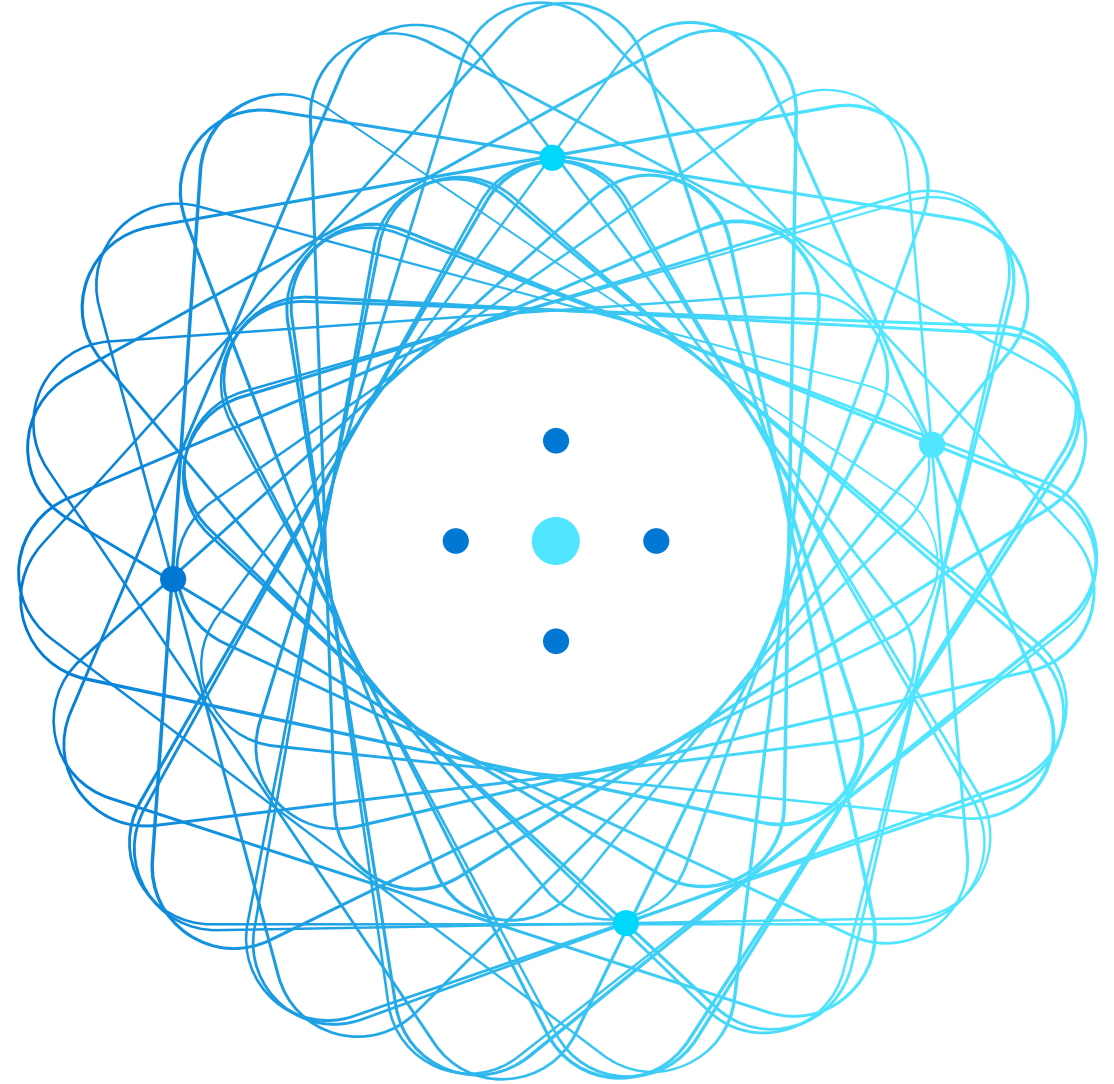


# AZ-220T01: Microsoft Azure IoT developer

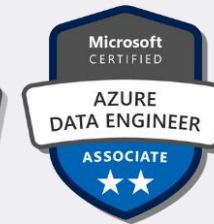


# Presenter



 /arifmazumder

**Mohammed Arif, PhD**  
**Lead Data Scientist**  
Big Data | Machine Learning | AI



Mohammed Arif has more than fifteen (15) years of working experience in Information Communication and Technology (ICT) industry. The highlights of his career are more than six (7) years of holding various senior management and/or C-Level and had five (5) years of international ICT consultancy exposure in various countries (APAC and Australia), specially on Big Data, Data Engineering, Machine Learning and AI arena.

He is also Certified Trainer for Microsoft.



# Course Resources

<http://arif.works/az-220/>

# Course agenda

## Module 1:

Introduction to IoT and Azure IoT Services

Lesson 1 – Introduction to IoT Solution Architecture

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Lesson 2 – IoT Hardware and Cloud Services

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Lesson 3 – Lab Scenarios for this Course

## Module 2:

Devices and Device Communication

Lesson 1 – IoT Hub Concepts

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Lesson 2 – IoT Device Lifecycle Concepts

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Lesson 3 – IoT Developer Tools

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Lesson 4 – Device Configuration and Communication

## Module 3:

Device Provisioning at Scale

Lesson 1 – Device Provisioning Service Terms and Concepts

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Lesson 2 – Configure and Manage the Device Provisioning Service

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Lesson 3 – Device Provisioning Tasks

# Course agenda

## Module 4:

### Message Processing and Analytics

Lesson 1 – Messages and Message Processing

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Lesson 2 – Additional Considerations for IoT Hub Messaging

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Lesson 3 – Data Storage and the Lambda Architecture

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Lesson 4 – Azure Functions and Stream Analytics

## Module 5:

### Insights and Business Integration

Lesson 1 – Business Integration for IoT Solutions

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Lesson 2 – Data Visualization with Time Series Insights

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Lesson 3 – Data Visualization with Power BI

## Module 6:

### Azure IoT Edge Deployment Process

Lesson 1 – Introduction to Azure IoT Edge

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Lesson 2 – Edge Deployment Process

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Lesson 3 – Edge Gateway Devices

# Course agenda

## Module 7:

Azure IoT Edge Modules and Containers

Lesson 1 – Develop Custom Edge Modules

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Lesson 2 – Offline and Local Storage

## Module 8:

Device Management

Lesson 1 – Introduction to IoT Device Management

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Lesson 2 – Manage IoT and IoT Edge Devices

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Lesson 3 – Device Management at Scale

## Module 9:

Solution Testing, Diagnostics, and Logging

Lesson 1 – Monitoring and Logging

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Lesson 2 – Troubleshooting

# Course agenda

## Module 10:

Azure Security Center and IoT Security Considerations

Lesson 1 – Security Fundamentals for IoT Solutions

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Lesson 2 – Introduction to Azure Defender for IoT

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Lesson 3 – Enhance Protection with Azure Defender for IoT Agents

## Module 11:

Develop with Azure Digital Twins

Lesson 1 – Introduction to Azure Digital Twins

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Lesson 2 – Introduction to ADT solution development

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Lesson 3 – Monitor and troubleshoot ADT

## Module 12:

Build an IoT Solution with IoT Central

Lesson 1 – Introduction to IoT Central

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Lesson 2 – Create and Manage Device Templates

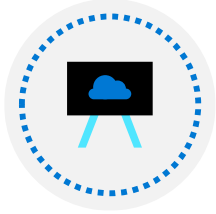
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Lesson 3 – Manage Devices in Azure IoT Central

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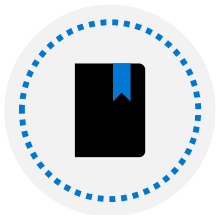
Lesson 4 – Business integration and data analytics

# Course description



This course provides students with the skills and knowledge required to successfully create and maintain the cloud and edge portions of an Azure IoT solution. The course includes full coverage of the core Azure IoT services such as IoT Hub, Device Provisioning Services, Azure Stream Analytics, Time Series Insights, and more. In addition to the focus on Azure PaaS services, the course includes sections on IoT Edge, device management, monitoring and troubleshooting, security concerns, Azure Digital Twins, and Azure IoT Central

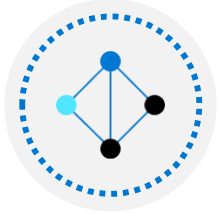
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The course material includes a combination of instructor-led presentation and discussion along with hands-on lab activities



# Audience



The course is intended for solution developers/engineers who are or will be responsible for implementing an IoT solution using Azure IoT services

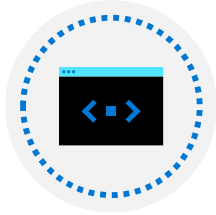
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It would also be suitable for cloud solution architects who are interested in honing their implementation skills with the latest technologies

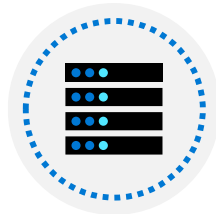
# Prerequisites

Prerequisites for taking this course are:



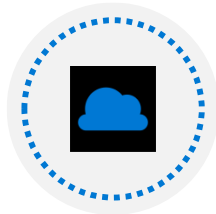
**Software Development Experience:** Software development experience is a prerequisite for this course, but no specific software language is required, and the experience does not need to be at a professional level

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**Data Processing Experience:** General understanding of data storage and data processing is recommended but not required

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**Cloud Solution Awareness:** Students should have a basic understanding of PaaS, SaaS, and IaaS implementations. Microsoft Azure Fundamentals (AZ – 900), or equivalent skills, is recommended

## Certification areas (AZ-220)

Study Areas	Weights
Set up the IoT Solution Infrastructure	10-15 %
Provision and Manage Devices	15-20 %
Implement IoT Edge	15-20 %
Implement Business Integration	5-10 %
Process and Manage Data	15-20 %
Monitor, Troubleshoot, and Optimize IoT Solutions	15-20 %
Implement Security	10-15 %

This course is aligned with the exam AZ-220 Microsoft Azure IoT Developer

Percentages indicate the relative weight of each area on the exam

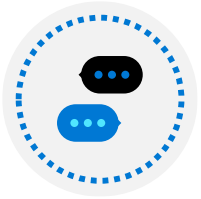
The higher the percentage, the more questions you are likely to see in that area

# Hands-on components



There are hands-on labs associated with each module in this course

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The labs in this course are solution-based, meaning that they logically progress and build upon each other. Lab setup scripts are provided for most labs and are used to configure lab requirements in Azure.