Microsoft

AZ-900T00 Microsoft Azure Fundamentals

COURSE DATASHEET

Course description

This course introduces Azure and the Microsoft services students can use to create cloud computing solutions. This course provides foundational level knowledge on Azure concepts; core Azure services; core solutions and management tools; general security and network security; governance, privacy, and compliance features; Azure cost management and service level agreements.

Audience

The audience for this course is anyone who is just beginning to learn about cloud computing and how Microsoft Azure provides that service.

Students don't need to have any experience with Microsoft Azure before taking this course. However, a basic level of familiarity with computer technology and cloud computing will make the concepts easier to understand. The course includes hands-on activities that involve working with multiple browser windows, so knowledge and experience with the Internet and browsers is will also be helpful.

The course materials available from Microsoft Learn for Educators are optimized for higher education instructors or instructors that teach in similar education settings (for example, early college programs in secondary schools, workforce training programs, and adult education, or continuing education programs). The Microsoft Official Course and certification exam will be localized into French, German, Japanese, Korean, Simplified Chinese, and Spanish.

Learning objectives

After completing this course, students will be able to:

- Explain general cloud computing concepts.
- List core services available with Microsoft Azure.
- Describe core solutions and management tools in Microsoft Azure.
- Explain security and network security features within Microsoft Azure.
- Describe identity, governance, privacy, and compliance capabilities of Microsoft Azure.
- Explain cost management and Service Level Agreements (SLAs) with Microsoft Azure.

See the full certification skills outline for further details.

Exam Relationship

This course is directly mapped to and supports learning for the AZ-900 Microsoft Azure Fundamentals certification exam. The table below outlines the relative weight percentages for each area of the exam. The higher the percentage, the more questions students are likely to see in that area.

STUDY AREAS	WEIGHTS
Describe cloud concepts	20-25%
Describe core Azure services	15-20%
Describe core solutions and management tools on Azure	10-15%
Describe general security and network security features	10-15%
Understand identity, governance, privacy, and compliance features	20-25%
Understand Azure cost management, and Service Level Agreements	10-15%

See the full certification skills outline for further details.

Course Materials

In addition to this course datasheet the following course materials are available through Microsoft Learn for Educators:

- **Microsoft Official Course:** Six, stand-alone modules that can be delivered in 60-105 minutes of class time. The modules are sub-divided into shorter lessons and facilitated through PowerPoint slide decks that include lecture topics, instructor notes, demonstrations, and hands-on activities.
- **Educator Teaching Guide:** Guide for educators who plan to implement the course in academic settings. It includes detailed explanations of the course materials, technical requirements, and setup. It also includes recommended resources for preparing for the certification exam, accommodating students, and remote teaching.
- **Online Training:** Self-paced online learning content on Microsoft Learn that aligns directly to Exam AZ-900: Microsoft Azure Fundamentals and to the Microsoft Official Course. Each module stands alone and includes explanations of technical concepts, hands-on activities, and knowledge checks.

  This course includes the following six Learning Paths:
  - o **Describe core Azure concepts**
  - o **Describe core Azure services**
  - o **Describe core solutions and management tools on Azure**
  - o **Describe general security and network security features**
  - o **Describe identity, governance, privacy, and compliance features**
  - o **Describe Azure cost management and service level agreements**
- **Reference Delivery Videos (as available):** On-demand recordings of an experienced instructor delivering each course module. Note that these are only available to instructors preparing to teach the course and cannot be shared with students.

Flexible Format

The course is designed to enable higher education instructors to deliver a complete module from the Microsoft Official Course during 1-2 class meetings and then direct students to complete the aligned online learning on Microsoft Learn. However, the modules and online learning have a flexible design that includes stand-alone lessons and units. This allows instructors to easily modify the delivery format, supplement the content, or integrate the course with other curricula.

Recommended Instructor Preparation

Instructors are strongly encouraged to review the Azure Fundamentals Learning Paths on Microsoft Learn and complete Exam AZ-900: Microsoft Azure Fundamentals prior to teaching the course to verify their understanding of the course content and gain insight into how to support students preparing for the exam. Instructors are also encouraged to prepare to support students who are developing their understanding of the basic concepts and skills listed in the Audience section of this document.

Appendix A

The following table provides a snapshot of the content included in the instructor-led course modules, detailed timing, and a link to the aligned segments of the Online Training on Microsoft Learn:

Module and description	Lesson	Aligned Online Training on Microsoft Learn
Module 0: **Course Introduction** 30 minutes		Introduction to Azure Fundamentals (module) 36 minutes
Module 1: **Cloud Concepts** 60 minutes	**Lesson 1:** Introduction to Azure fundamentals **Lesson 2:** Fundamental Azure concepts **Lesson 3:** Review Questions **Lesson 4:** Summary	Describe Azure cloud concepts (Learning Path) 1 hour 34 minutes

Module 2: Core Azure Services 90 minutes	Lesson 1: Core Azure Architectural components Lesson 2: Core Azure workload products Lesson 3: Azure networking services Lesson 4: Azure storage services Lesson 5: Azure database services Lesson 6: Review Questions Lesson 7: Summary	Describe core Azure services (Learning Path) 3 hours 12 minutes
Module 3: Core Solutions and management tools 90 minutes	Lesson 1: Choose the best Azure IoT service Lesson 2: Choose the best AI service Lesson 3: Choose the best Azure serverless technology Lesson 4: Choose the best tools with DevOps and GitHub Lesson 5: Choose the best management tools Lesson 6: Choose the best Azure monitoring service Lesson 7: Review Questions Lesson 8: Summary	Describe core solutions and management tools on Azure (Learning Path) 2 hour 54 minutes
Module 4: General security and networking features 60 minutes	Lesson 1: Security Tools and Features Lesson 2: Secure Network Connectivity Lesson 3: Review Questions Lesson 4: Summary	Describe general security and network security features (Learning Path) 1 hour 31 minutes
Module 5: Identity, Governance, Privacy, and Compliance 90 minutes	Lesson 1: Core Azure identity services Lesson 2: Azure Governance Methodologies Lesson 3: Privacy, Compliance, and Data Protection standards Lesson 4: Review Questions Lesson 5: Summary	Describe identity, governance, privacy, and compliance features (Learning Path) 2 hours 8 minutes
Module 6: Azure Pricing and Lifecycle 60 minutes	Lesson 1: Planning and Cost Management Lesson 2: Azure Service Level Agreements (SLAs) and Lifecycle Lesson 3: Review Questions Lesson 4: Summary	Describe Azure cost management and service level agreements (Learning Path) 1 hour 46 minutes

*Note that the Module Timings are for delivery in a higher education setting without supplemental instruction about related concepts. Instructors who want to deliver in other settings or provide supplemental instruction in foundational or related concepts should plan for longer implementation.

Appendix B

Extended outline

This outline provides detailed information about the content included in the instructor-led course modules and the aligned segments of the Online Training on Microsoft Learn.

Module and description	Lesson	Key topics	In-class demonstrations and labs	Aligned Online Training on Microsoft Learn
Module 0: Course Introduction This module provides a high level course format and objectives as well as an outline of the course.				
Module 1: Cloud Concepts This module introduces you to the basics of cloud computing and Azure, and how to get started with Azure's subscriptions and accounts.	**Lesson 1:** Introduction to Azure fundamentals	• What is cloud computing? • What is Microsoft Azure • Tour of Azure Services • Get started with Azure accounts • Case study introduction		Describe Azure cloud concepts (Learning Path)
	Lesson 2: Fundamental Azure concepts	• Cloud models • Cloud benefits and considerations • Cloud services		
	Lesson 3: Review questions **Lesson 4:** Summary			

Module 2: Core Azure Services In this module, you'll learn about several of the components that are necessary to successfully deploy resources on Azure.	**Lesson 1:** Core Azure architectural components	• Overview of Azure subscriptions, management groups, and resources • Overview of Azure subscriptions, management groups, and resources • Azure resources, resource groups, and Azure Resource Manager • Azure subscriptions and management groups	Demo/Walkthrough - Explore the Azure portal	Describe core Azure services (Learning Path) Lab/Sandbox - Exercise - Create a website hosted in Azure
	Lesson 2: Core Azure workload products	• Overview of Azure compute services • Discuss when to use Azure virtual machines • Decide when to use Azure App Service • Decide when to use Azure Container Services • Decide when to use Azure Functions • Decide when to use Windows Virtual Desktop	Lab/Walkthrough - Azure Virtual Machine Lab/Walkthrough - Create a Web App Lab/Walkthrough - Deploy Azure container instances	
	Lesson 3: Azure networking services	• Azure Virtual Network fundamentals • Azure Virtual Network settings • Azure VPN Gateway fundamentals • ExpressRoute fundamentals	Lab/Walkthrough - Create a virtual network	

	Lesson 4: Azure storage services	• Azure storage account fundamentals • Disk storage fundamentals • Azure blob storage fundamentals • Azure Files fundamentals Blob access tiers	Lab/Walkthrough - Create blob storage	
	Lesson 5: Azure database services	• Azure Cosmos DB • Azure SQL Database • Azure Database for MySQL • Azure Database for PostgreSQL • Azure SQL Managed Instance • Explore Azure Marketplace	Lab/Walkthrough - Create a SQL database	Lab/Sandbox - Exercise - Create a SQL database
	Lesson 6: Review Questions **Lesson 7:** Summary			
Module 3: Core Solutions In this module, you will learn about some of the core solutions and management tools in Azure, while walking through different decision-making scenarios to find the best answer.	**Lesson 1:** Choose the best Azure IoT service	• Use IoT Hub • Use IoT Central • Use Azure Sphere • Big data and analytics	Lab/Walkthrough - Implement an Azure IoT Hub	Describe core solutions and management tools on Azure (Learning Path)
	Lesson 2: Choose the best AI service	• Use Machine Learning • Use Cognitive Services • Use Bot Service		
	Lesson 3: Choose the best Azure serverless technology	• Use Azure Functions • Use Azure Logic Apps	Lab/ Walkthrough - Implement Azure Functions	

Lesson 4: Choose the best tools with DevOps and GitHub	• Use Azure DevOps to manage the application development lifecycle • Use GitHub to contribute to open-source software • Use Azure DevTest Labs to manage testing environments	
Lesson 5: Choose the best management tools	• Use the Azure portal • Use Azure PowerShell • Use Azure CLI • Use the Azure mobile app • Use ARM templates	Lab/ Walkthrough – Create a VM with an ARM Template Lab/ Walkthrough - Create a VM with PowerShell Lab/ Walkthrough - Create a VM with the CLI
Lesson 6: Choose the best Azure monitoring service	• Use Azure Advisor • Use Azure Monitor • Use Azure Service Health	
Lesson 7: Review Questions **Lesson 8:** Summary		

Module 4: General security and networking features In this module, you will learn about the various Azure services you can use to help ensure that your cloud resources are safe, secure, and trusted.	**Lesson 1:** Security Tools and Features	• Azure Security Center • Azure Sentinel • Azure Key Vault • Azure Dedicated Host	Demo/ Walkthrough - Azure Security Center Lab/ Walkthrough - Implement Azure Key Vault	Describe general security and network security features (Learning Path) Sandbox/ Exercise - Manage a password in Azure Key Vault
	Lesson 2: Secure Network Connectivity	• What is defense in depth? • Network Security Groups • Azure Firewall • Azure Distributed Denial of Service (DDoS) protection • Combine Azure services to create a complete network security solution	Lab/ Walkthrough - Secure network traffic	Sandbox/ Exercise - Configure network access to a VM by using a network security group
	Lesson 3: Review Questions **Lesson 4:** Summary			
Module 5: Identity, Governance, Privacy, and Compliance In this module, you will learn how Azure can help you secure access to cloud resources, what it means to build a cloud governance strategy, and how Azure adheres to common regulatory and compliance standards.	**Lesson 1:** Core Azure identity services	• Compare Authentication and Authorization • Multifactor Authentication and Conditional Access • Multifactor Authentication and Conditional Access	Lab/Walkthrough - Manage access with RBAC	Describe identity, governance, privacy, and compliance features (Learning Path)

Lesson 2: Azure Governance Methodologies	• Explore Role-based access control (RBAC) • Resource locks • Tags • Azure Policy • Azure Blueprints • Cloud Adoption Framework • Create a subscription governance strategy	Lab/ Walkthrough - Manage Resource Locks Lab/ Walkthrough – Implement resource tagging Lab/ Walkthrough - Create an Azure Policy	Sandbox/ Exercise - Protect a storage account from accidental deletion by using a resource lock Sandbox/ Exercise - Restrict deployments to a specific location by using Azure Policy
Lesson 3: Privacy, Compliance, and Data Protection standards	• Compliance terms and requirements • Microsoft Privacy Statement, the Online Services Terms, and the Data Protection Addendum • Trust Center • Azure compliance documentation • Azure Sovereign Regions (US Government services) • Azure Sovereign Regions (Azure China)	Lab/ Walkthrough – Explore the Trust Center	Demo/ Exercise - Explore the Trust Center
Lesson 4: Review Questions **Lesson 5:** Summary			

Module 6: Azure Pricing and Lifecycle	Lesson 1: Planning and Cost Management		Lab/ Walkthrough - Use the Azure Pricing Calculator	Describe Azure cost management and service level agreements (Learning Path)
In this module, you will learn about the factors that influence cost, tools you can use to help estimate and manage your cloud spend, and how Azure's service-level agreements (SLAs) can impact your application design decisions.		• Purchase Azure services and using the Pricing Calculator • Total Cost of Ownership Calculator • Manage and minimize total cost on Azure	Lab/ Walkthrough - Use the Azure TCO Calculator	Demo/ Exercise - Estimate workload cost by using the Pricing calculator Demo/ Exercise - Compare sample workload costs by using the TCO Calculator
	Lesson 2: Azure Service Level Agreements (SLAs) and Lifecycle Lesson 3: Review Questions Lesson 4: Summary	• Service Level Agreements (SLAs) • Define your application SLA • Actions that affect SLAs • Azure Preview Program, monitoring service, and feature updates	Lab/Walkthrough - Calculate a Composite SLA	