# Azure Fundamentals – Course Design

## Course Description

This course will provide foundational level knowledge of cloud services and how those services are provided with Microsoft Azure. The cousrse can be taken as an optional first step in learning about cloud services and Microsoft Azure, before taking further Microsoft Azure or Microsoft cloud services courses.

The course will cover general cloud computing concepts as well as general cloud computing models and services such as Public, Private and Hybrid cloud and Infrastructure-as-a-Service (IaaS), Platform-as-a-Service(PaaS) and Software-as-a-Service (SaaS).

It will also cover some core Azure services and solutions, as well as key Azure pillar services concerning security, privacy, compliance and trust. It will finally cover pricing and support services available with Azure.

## Audience

The course is intended for a broad range of candidate backgrounds. It is suitable for candidates with non-technical backgrounds, such as those involved in selling or purchasing cloud based solutions and services or who have or will have some involvement with cloud based solutions and services.

It would also be suitable for candidates with a technical background who may be looking to take a first look at cloud services and Microsoft Azure.

## Course Pre-requisites

There are no pre-requisites for taking this course. Technical IT experience is not required however some general IT knowledge or experience would be beneficial.

## Learning Objectives

The following are the course learning objectives:

* Understand general cloud computing concepts
* Understand core services available with Microsoft Azure
* Understand security, privacy, compliance and trust with Microsoft Azure
* Understand Azure pricing and support models available with Microsoft

Course Duration and Length

* # of modules – 7 modules (1 intro / 4 content / 1 exam and 1 course end which contains course summary and post course survey)
* # of lessons – approx. 37 (includes intros / summaries /surveys)
* # of topics – approx. 147
  + Assuming takes 2 mins to read each item => approx 294 mins (4 hours 54 mins to read topics)
* # of video – approx 50
  + Asuming approx 3 mins to view each video => approx 150 mins (2 Hours 30 mins video content)
* number of questions
  + end of module = 40
  + end of course = 20
  + total = > assume 2 mins per question = > 120 mins = 2 hours to answer all questions
* **Estimated Course Duration Total = topics + video + questions = approx 9 Hours 24 mins**

### Dev Notes:

* Where will course be released? Edx.org, anywhere else that might have an effect on content dev or release process?
* Exam > course maps to an MCP exam AZ-900:Azure Fundamentals (was previously FNA-100). Exam will be live on 1st Janb 2019

### High Level Content Outline

1. **Module 1 - Course Introduction**
   1. Lesson 1 – Welcome
   2. Lesson 2 - Course Overview
   3. Lesson 3 - Labs Overview
   4. Lesson 4- Pre-Course Survey
2. **Module 2 - Cloud Concepts**
   1. Lesson 1 - Learning Objectives
   2. Lesson 2 – Why Cloud Services?
   3. Lesson 3 - Infrastructure-as-a-Service (IaaS), Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS)
   4. Lesson 4 - Public, Private and Hybrid cloud models
   5. Lesson 5 - Module 2 Review Questions
   6. Lesson 6 - Module 2 Summary
3. **Module 3 - Core Azure Services**
   1. Learning Objectives
   2. Core Azure architectural components
   3. Core Azure Services and Products
   4. Azure Solutions
   5. Azure management tools
   6. Module 3 Review Questions
   7. Module 3 Summary
4. **Module 4 - Security, Privacy, Compliance and Trust**
   1. Learning Objectives
   2. Securing network connectivity in Azure
   3. Core Azure Identity services
   4. Security tools and features
   5. Azure governance methodologies
   6. Monitoring and Reporting in Azure
   7. Privacy, Compliance and Data Protection standards in Azure
   8. Module 4 Review Questions
   9. Module 4 Summary
5. **Module 5 - Azure Pricing and Support**
   1. Learning Objectives
   2. Azure subscriptions
   3. Planning and managing costs
   4. Support options available with Azure
   5. Azure Service Level Agreements (SLAs)
   6. Service lifecycle in Azure
   7. Module 5 Review Questions
   8. Module 5 Summary
6. **Module 6 – Final Exam**
   1. Graded Final Exam
7. **Module 7 – Course End**
   1. Course Complete
   2. Post – Course Survey

### Detailed content Outline

### Notes for review:

* Assume a topic is text based, unless explicitly called out that is is a video or demo.
* A text basd topic will consist of approx.
  + Short paragragh/s
  + Bulets/lists
  + may contain graphic/s
  + May contain a note or reference to an external link for further reading
  + May contain a note to emphasise a particular point
* Video topics will generally cover the text based topics that are listed in that video topic, so knowledge areas wil have text and video to cover the same area, where possible. This is to re-inforce the learning and allow students choose the best option for them.
* Video content will primarily be animations or re-used video from azure.ms.com, or previous courses where appropriate.
* Animations will be created with a tool such as <https://www.animaker.com/> , [GoAnimate](https://www.vyond.com/), aurora, <https://www.blender.org/> , [moovly](https://www.moovly.com/), still assessign the tools….

1. **Module 1 - Course Introduction**
   1. Lesson 1 – Welcome
      * Topic 1 - Video: Welcome
   2. Lesson 2- Course Overview
      * Topic 1 - Video: About This Course
      * Topic 2 - About This Cours (Description/Audience/Lrn Objs/Pre-reqs)
      * Topic 3 - Course Syllabus (module and lessons level outline)
      * Topic 4 - Course Components (text / video / end of mod Qs/
      * Topic 5 - Grading
      * Topic 6 - Meet the Authors
   3. Lesson 3 - Labs Overview
      * Topic 1 - placeholder
   4. Lesson 4- Pre-Course Survey
      * Topic 1 - Pre-Course Survey
2. **Module 2 - Cloud Concepts**
   1. Lesson 1 - Learning Objectives
      * Topc 1 – Module 2 Learning Objectives
   2. Lesson 2 – Why Cloud Services?
      * Topic 1 – Video: Cloud Services (Covering topics 2, 3, 4 and 5, some otherrelated concepts not explicitly listed as text based topics)
      * Topic 2 – Key Terms- such as High Availability, Scalability, Elasticity, Agility, Fault Tolerance, and Disaster Recovery
      * Topic 3 - Economies of Scale
      * Topci 4 - Capital Expenditure (CapEx) and Operational Expenditure (OpEx)
      * Topic 5 - Consumption-based model
   3. Lesson 3 - Infrastructure-as-a-Service (IaaS), Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS)
      * Topic 1 – Video: Covering IaaS, PaaS and SaaS (topics 2, 3 and 4)
      * Topic 2 - Infrastructure-as-a-Service (IaaS)
      * Topic 3 - Platform-as-a-Service (PaaS)
      * Topic 4 - Software-as-a-Service (SaaS)
      * Tpoic 5 – Video: Comparing and contrast cloud service types (covers topic 6)
      * Topic 6 - Compare and contrast the three different service types
   4. Lesson 4 - Public, Private and Hybrid cloud models
      * Topic 1 – Video: Cloud Models (topics 2, 3 and 4)
      * Topic 2 - Public cloud
      * Topic 3 - Private cloud
      * Topic 4 - Hybrid cloud
      * Topic 5 – Video: Compare and contrast different cloud models (topic 6)
      * Topic 6 - Compare and contrast the three different cloud models
   5. Lesson 5 - Module 2 Review Questions
      * Topic 1 - End of Module Review Questions
   6. Lesson 6 - Module 2 Summary
      * Topic 1 - Video: – Module 2 Summary
      * Topc 2 - Module 2 Summary
3. **Module 3 - Core Azure Services**
   1. Learning Objectives
      * Topic 1 - Module 3 – Learning Objectives
   2. Core Azure architectural components
      * Topic 1 – Video: Regions (covers topic 2)
      * Topic 2 - Regions
      * Topic 3 – Video: Availabililty Zones (covers topic 4)
      * Topic 4 - Availability Zones
      * Topic 5 – Video: Resource Groups (covers topic 6)
      * Topic 6 - Resource Groups
      * Topic 7 – Video: Azure Resource Manager (covers topic 8)
      * Topic 8 - Azure Resource Manager
      * Topic 9 - Benefits and usage of these core Azure architectural components
   3. Core Azure Services and Products
      * Topic 1 – Video: Azure Compute Services
      * Topic 2 – Azue Compute Services - Products available for Compute such as Virtual Machines, Virtual Machine Scale Sets, App Service and Functions
      * Topic 3 – Video: Azure Networking Services
      * Topic 4 - Azure Networking Services - Products available for Networking such as Virtual Network, Load Balancer, VPN Gateway, Application Gateway and Content Delivery Network
      * Topic 5 – Video: Azure Storage Services
      * Topic 6 - Azure Storage Services - Products available for Storage such as Blob Storage, Disk Storage, File Storage and Archive Storage
      * Topic 7 – Video: Azure Data Services
      * Topic 8 - Azure Data Services - Products available for Databases such as CosmosDB, Azure SQL Database, Azure Database Migration service and Azure SQL Data Warehouse
      * Topic 9 – Video: Azure Marketplace
      * Topic 10 - Azure Marketplace - Describe the Azure Marketplace and its usage scenarios
   4. Azure Solutions
      * Topic 1 – Video: Internet of Things (IoT)
      * Topic 2 - Internet of Things (IoT) - Internet of Things (IoT) and some of the products that are available for IoT on Azure such as IoT Fundamentals, IoT Hub and IoT Central
      * Topic 3 – Video: Data and Analytics
      * Topic 4 - Data and Analytics - Big Data and Analytics and some of the products that are available for Big Data and Analytics such as SQL Data Warehouse, HDInsight and Data Lake Analytics
      * Topic 5 - Video: Artificial Intelligence (AI)
      * Topic 6 - Artificial Intelligence (AI) - Artificial Intelligence (AI) and some of the products that are available for AI such as Azure Machine Learning Service and Studio
      * Topic 7 – Video: Serverless computing
      * Topic 8 - Serverless computing - Serverless computing and some of the Azure products that are available for serverless computing such as Azure Functions, Logic Apps and App grid
      * Topic 9 – Video: DevOps
      * Topic 10 – DevOps - DevOps and some of the Azure services available for DevOps
      * Topic 11 - Benefits and outcomes available using these Azure solutions
   5. Azure management tools
      * Topic 1 – Video: Azure Management Tools (covering topic 2)
      * Topic 2 - Azure management tools - i.e. such as Azure CLI, PowerShell and the Azure Portal, will include powershell core, SDK and APIs at high level also.
      * Topic 3 – Video: Azure Advisor (covering topic 4)
      * Topic 4 - Azure Advisor
   6. Module 3 Review Questions
      * Topic 1 - End of Module Review Questions
   7. Module 3 Summary
      * Topic 1 – Video: Module 3 Summary
      * Topic 2 - Module 3 Summary
4. **Module 4 - Security, Privacy, Compliance and Trust**
   1. Learning Objectives
      * Topic 1 - Module 4 – Learning Objectives
   2. Securing network connectivity in Azure
      * Topic 1 – Video: Securing network connectivity (covering topics 2, 3, 4 and 5)
      * Topic 2 - Azure Firewall
      * Topic 3 - Azure DDoS Protection
      * Topic 4 - Network Security Group (NSG)
      * Topic 5 - Choose an appropriate Azure security solution
   3. Core Azure Identity services
      * Topic 1 – Video: Authentication and Authorization (topic 2)
      * Topic 2 - Authentication and Authorization
      * Topic 3 – Video: Azure Active Directory and MFA (topics 4 and 5)
      * Topic 4 - Azure Active Directory
      * Topic 5 - Azure Multi-Factor Authentication
   4. Security tools and features
      * Tpoic 1 – Video: Azure Security Center (topics 2 and 3)
      * Topic 2- Azure Security Center
      * Topic 3 - Azure Security Center usage scenarios
      * Topic 4 – Video: Security Tools and Services (topics 5, 6 and 7)
      * Topic 5 - Key Vault
      * Topic 6 - Azure Information Protection (AIP)
      * Topic 7- Azure Advanced Threat Protection (ATP)
   5. Azure governance methodologies
      * Topic 1 – Video: Governance methodologies ( topics 2 > 6 below)
      * Topic 2 - Policies
      * Topic 3 - Initiatives
      * Topic 4 - Role-Based Access Control (RBAC)
      * Topic 5 - Locks
      * Topic 6 - Azure Advisor security assistance
   6. Monitoring and Reporting in Azure
      * Topic 1 – Video: Azure Monitor
      * Topic 2 - Azure Monitor
      * Topic 3 – Video: Azure Service Health
      * Topic 4 - Azure Service Health
      * Use Cases for Azure Monitor and Azure Service Health
   7. Privacy, Compliance and Data Protection standards in Azure
      * Topic 1 – Video: Compliance Terms and Requirements (This is overview of topic 2)
      * Topic 2 – Compliance Terms and requirements – general concept and terms such as GDPR, ISO and NIST
      * Topic 3 – Video: Microsoft Privacy Statement (topic 4)
      * Topic 4 - Microsoft Privacy Statement
      * Topic 5 – Video: Trust Center and Service Trust portal (topics 6 and 7)
      * Topci 6 - Trust Center
      * Topic 7 - The Service Trust Portal
      * Topic 8 – Video: Compliance Manager (topic 9)
      * Topic 9 - Compliance Manager (including - How to determine if Azure is compliant for a particular business need)
      * Topic 10 - Video: Azure Governement and Germany services (Topics 11 and 12)
      * Topic 11 - Azure Government services
      * Topic 12 - Azure Germany services
   8. Module 4 Review Questions
      * Topic 1 - End of Module Review Questions
   9. Module 4 Summary
      * Topic 1 - Video: Module 4 Summary
      * Topic 2 - Module 4 Summary
5. **Module 5 - Azure Pricing and Support**
   1. Learning Objectives
      * Topic 1 - Module 5 – Learning Objectives
   2. Azure subscriptions
      * Topic 1 – Video: Azure Subscriptions
      * Topic 2 - Azure Subscriptions
      * Topic 3 - Subscription uses and options
   3. Planning and managing costs
      * Topic 1 – Video: Purchasing Options (Topics 2 and 3)
      * Topic 2 - Purchasing Azure products and services
      * Topic 3 - Azure Free account
      * Topic 4 - Video: Factors affecting costs (Topic 5 and 6)
      * Topic 5 - Factors affecting costs - factors affecting costs such as resource types, services, locations, ingress and egress traffic
      * Topic 6 - Zones for billing purposes
      * Topic 7 - Video: Planning Costs (Topic 8 and 9)
      * Topic 8 - Pricing calculator
      * Topic 9 - Total Cost of Ownership (TCO) calculator
      * Topic 10 - Video: Minimizing Costs (Topic 11 and 12)
      * Topic 11 – Minimizing Costs - Some best practices to minimum Azure costs such as performing cost analysis, creating spending limits and quotas, using tags to identify cost owners, using Azure reservations and using Azure Advisor recommendations
      * Topic 12 - Azure Cost Management
   4. Support options available with Azure
      * Topic 1 – Video: Support Plan Options (topic 2)
      * Topic 2 - Support Plan Options - support plans that are available such as Dev, Standard, Professional Direct and Premier
      * Topic 3 - Video: Accessing Support (topics 4, 5 and 6)
      * Topic 4 - How to open a support ticket
      * Topic 5 – Alternative support channels - outside of support plan channels i.e. twitter etc
      * Topic 6 - Knowledge Center
   5. Azure Service Level Agreements (SLAs)
      * Topic 1 – Video: Azure Service Level Agreements (SLAs) (topics 2 and 3)
      * Topic 2 - Service Level Agreements (SLAs)
      * Topic 3 - SLAs for Azure products or services
   6. Service lifecycle in Azure
      * Topic 1 – Video: Feature Release and Access (topics 2, 3, 4 and 5)
      * Topic 2 - Public and Private Preview features
      * Topic 3 - How to access Preview features
      * Topic 4 - General Availability (GA)
      * Topic 5 - Monitoring feature updates
   7. Module 5 Review Questions
      * Topic 1 - End of Module Review Questions
   8. Module 5 Summary
      * Topic 1 – Video: Module 5 Summary
      * Topic 2 - Module 5 Summary
6. **Module 6 – Final Exam**
   1. Graded Final Exam
      * Topic 1 - Course Final Exam
7. **Module 7 – Course End**
   1. Course Complete
      * Topic 1 – Video: Course Summary and Thank You
   2. Post – Course Survey
      * Topic 1 - Post Course Survey