Azure DevOps Syllabus

(This syllabus taken by Azure official Curriculum)

Configure Subscriptions

- Introduction of Subscriptions
- Identify Azure Regions
- Implement Azure Subscriptions
- Obtain an Azure Subscriptions
- Identify Azure Subscription usage
- Implement Microsoft Cost Management
- Apply resource tagging
- Apply cost savings
- **Labs on Cost Management**

Configure Virtual Machines

- Introduction of Azure Virtual Machines
- Cloud Services responsibilities
- Plan Virtual Machines

Configure Network Security Groups

- Introduction of Network Security Group
- Implement Network Security Groups
- Determine Network Security Group Rules
- Determine Network Security Group effective rules
- Create Network Security Group rules
- Implement Application Security Groups
- **Labs on Network Security Group**

Configure Azure Application Gateway

- Introduction of Azure Application Gateway
- Implement Azure Application Gateway
- Determine Azure Application Gateway routing
- Configure Azure Application Gateway components
- **Labs on Azure Application Gateway**

DevOps Foundation

- What is DevOps?
- Why DevOps?
- Evolution of Software Methodologies
- Dev Challenges v/s DevOps Solution
- Ops Challenges v/s DevOps Solution
- Stages Of DevOps Lifecycle
  - Continuous Development
  - Continuous Testing
  - Continuous Integration
  - Continuous Deployment
  - Continuous Monitoring
- The Various DevOps Tools

Git & GitHub (Managing Source Code and What is Version Control System(VCS)?

- Why VCS?
- VCS tools
- Distributed VCS
- What is Git & Why Git?
- Features Of Git
- Git Workflow
- Git Configurations
- Creating Git Repository
- Syncing Repositories
- Adding Origin
- Pushing changes
- Pulling changes
- Clone operation
- Perform, Review & Commit Changes
- Stacking Unfinished Changes
- Move, Rename & Delete Operations
- Tagging Versions In Repository

Automated Testing and Test Driven Development

- Automated Testing and Test Driven Development

- Integrated Development Environments
- Test Driven Development Approach
- Behavior Driven Development
- Integration Testing and Mocking
- Software Integration Tools
- Code Quality Principles
- Code Quality Tools
- Continuous Code Quality

Jenkins (Continuous Integration)

- Challenges before Continuous Integration
- What is Continuous Integration?
- Benefits of Continuous Integration
- Tools of Continuous Integration
- Introduction to Jenkins
- Configuring Jenkins
- Build Setup in Jenkins
- Jenkins Dashboard
- Creating jobs in Jenkins
- Configuring Security in Jenkins
- Plugin Management in Jenkins
- Notification System
- Jenkins Best Practices

Dockers (Containerization)

- What is Docker?
- Challenges before Containerization
- Understanding microservices
- VMs for microservices
- What is a Container?
- VM vs Containers
- Benefits of Containerization
- Introduction to Docker
- Docker Fundamentals
- Architecture of Docker
- Creating & Executing Docker Images
- Image Distribution

- Docker Registry
- What is Docker Hub?
- Creating Docker Files
- Using Docker Compose to compose scripts
- Using Docker Volumes
- Create 'Dockerized' Application
- Docker Networking
- Docker Swarm

Configure Azure Container Instances

- Introduction of Azure Container Instances
- Compare containers to Virtual Machines
- Review Azure Container Instance
- Implement container groups
- Review Azure container groups
- Review Azure container Apps
- **Labs on Azure Container Instances**

Azure DevOps and Azure Repos

- Azure DevOps architecture
- key features
- Azure DevOps tools
- Azure DevOps organizations and projects
- Introduction to Azure Repos
- Compare TFVC and Git
- Key concepts in Azure repos
- Search your code in Repos
- what is TFVC
- Azure Repos Integrations

Azure Artifacts and Azure Test Plans

- What are Azure artifacts
- Key concepts in artifacts
- working with packages
- Feeds
- views and upstream sources
- Connecting to Azure pipelines
- What are Azure test plans
- Exploratory and manual testing
- Test from kanban board
- Creating Test Plans
- Testing web apps

Azure Pipelines

- What is Azure Pipelines
- Why use Azure Pipelines
- Deploying to Azure
- Key concepts in Pipelines
- CI Triggers in pipelines
- YAML Basics
- Ecosystems and Integration
- Setting up CI build
- Adding Tests to the Pipeline
- Agents and Tasks

Azure Boards

- What is Azure Boards

- Why use Azure boards
- Agile project management best practices
- Basic concepts of Azure Boards
- Connecting boards to github
- Work items
- Kanban boards
- Sprints
- Scrum and plans
- Azure Boards integrations

Terraform with Azure

- What is Infrastructure as a code?
- IaC vs Configuration Management
- Introduction to Terraform
- Installing Terraform on Azure
- Basic Operations in Terraform
  - init
  - plan
  - apply
  - destroy
- Terraform Code Basics
- Deploying end-to-end architecture on Azure using Terraform