

## PROFESSIONAL COURSE OUTLINE

Microsoft

AZ-400

# DevOps Engineer Expert

This course provides the knowledge and skills to design and implement DevOps processes and practices. Students will learn how to plan for DevOps, use source control, scale Git for an enterprise, consolidate artifacts, design a dependency management strategy, manage secrets, implement continuous integration, implement a container build strategy, design a release strategy, set up a release management workflow, implement a deployment pattern, and optimize feedback mechanisms

Software Dev

Advanced

Azure, Azure Devops, Azure Kubernetes Service, Azure Container Instances, Azure Automation

## PROGRAM CODE

AZ-400

## DELIVERY

Virtual, On-site, or Hybrid

## DURATION

4 days

## CERTIFICATION

Microsoft Certified: DevOps Engineer Expert

## AUDIENCE PROFILE

## Who This Program Is For

Students in this course are interested in designing and implementing DevOps processes or in passing the Microsoft Azure DevOps Solutions certification exam.

## PROGRAM SUMMARY

## What This Course Covers

As a DevOps engineer, you're a developer or infrastructure administrator who also has subject matter expertise in working with people, processes, and products to enable continuous delivery of value in organizations.

## TAILORED DELIVERY

## Adapt the program around your team.

This outline can be adapted for virtual, on-site, or hybrid delivery, with emphasis adjusted for your team's platform priorities, role mix, and implementation goals.

### Enterprise-ready delivery format

VNode ITeS can align labs, examples, delivery pace, and assessment checkpoints to the required audience profile while preserving the official program sequence where applicable.

## COMPLETE MODULE SEQUENCE

## Module Flow and Topic Coverage

The structure below presents the current delivery flow for this program, including the associated topics covered under each module.



### Plan the next session

We can tune this outline around your delivery goals and team mix.

## TALK TO US

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## MODULE 1

**AZ-400: Development for Enterprise DevOps**

Learn Git features and DevOps practices that help organizations build better software together.

- Introduction to DevOps
- Plan Agile with GitHub Projects and Azure Boards
- Design and implement branch strategies and workflows
- Collaborate with pull requests in Azure Repos
- Explore Git hooks
- Plan to foster inner source
- Manage and configure repositories
- Identify technical debt

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## MODULE 2

**AZ-400: Implement CI with Azure Pipelines and GitHub Actions**

AZ-400: Implement CI with Azure Pipelines and GitHub Actions

- Explore Azure Pipelines
- Manage Azure Pipeline agents and pools
- Describe pipelines and concurrency
- Design and implement a pipeline strategy
- Integrate with Azure Pipelines
- Introduction to GitHub Actions
- Learn continuous integration with GitHub Actions
- Design a container build strategy

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## MODULE 3

**AZ-400: Design and implement a release strategy**

Learn advanced release strategy design and implementation through comprehensive continuous delivery frameworks, deployment orchestration, and automated quality assurance methodologies

- Create a Release Pipeline
- Explore release strategy recommendations
- Configure and Provision Environments
- Manage and Modularize Tasks and Templates
- Automate inspection of health

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## MODULE 4

**AZ-400: Implement a secure continuous deployment using Azure Pipelines**

AZ-400: Implement a secure continuous deployment using Azure Pipelines

- Introduction to deployment patterns
- Implement blue-green deployment and feature toggles
- Implement canary releases and dark launching
- Implement A/B testing and progressive exposure deployment
- Integrate with identity management systems
- Manage application configuration data

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## MODULE 5

**AZ-400: Manage infrastructure as code using Azure and DSC**

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- Explore Infrastructure as Code and configuration management
- Create Azure Resources by using Azure Resource Manager templates
- Create Azure Resources Using Azure CLI
- Explore Azure Automation with DevOps
- Implement Desired State Configuration (DSC)
- Implement Bicep

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## MODULE 6

**AZ-400: Implement security and validate code bases for compliance**

AZ-400: Implement security and validate code bases for compliance - Learn DevSecOps practices, secure pipeline implementation, open-source software security, software composition analysis, and comprehensive security monitoring with Microsoft Defender for Cloud, Azure Policy, and GitHub Advanced Security.

- Introduction to Secure DevOps
- Implement open-source software
- Software Composition Analysis
- Security monitoring and governance

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## MODULE 7

**AZ-400: Design and implement a dependency management strategy**

Learn how to design and implement a comprehensive dependency management strategy for DevOps. Explore package dependencies, package management, artifact security, versioning strategies, and GitHub Packages integration for efficient software development.

- Explore package dependencies
- Understand package management
- Migrate, consolidate, and secure artifacts
- Implement a versioning strategy
- Introduction to GitHub Packages

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## MODULE 8

**AZ-400: Implement continuous feedback**

Learn to implement continuous feedback practices in DevOps using Azure Application Insights, monitoring dashboards, team knowledge sharing, automated analytics, and blameless retrospectives to create a culture of continuous improvement.

- Implement Tools to Track Usage and Flow
- Develop monitor and status dashboards
- Share knowledge within teams
- Design processes to automate application analytics
- Manage alerts, blameless retrospectives and a just culture

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