



ASPIREQ
Freedom meets aspirations

DevOps Engineering

*****Syllabus*****

Module 1: DevOps Fundamentals

Understand the core principles and culture of DevOps.

- Introduction to DevOps

- What is DevOps?
- History and evolution of DevOps
- DevOps principles and practices
- Benefits of DevOps

- DevOps Tools and Technologies

- Overview of popular DevOps tools
- Version control with Git
- Continuous Integration (CI) with Jenkins
- Configuration management with Ansible, Puppet, and Chef
- Containerization with Docker
- Orchestration with Kubernetes

- Cloud Computing and DevOps

- Introduction to cloud computing
- Cloud service models (IaaS, PaaS, SaaS)
- Cloud providers (AWS, Azure, Google Cloud)
- DevOps on cloud platforms

Module 2: AI-driven DevOps

How to use AI (ChatGPT, Microsoft Copilot & DeepSeek) to solve business

problems. - **AI in Excel**

- Data Analysis and Insights (Analyze Data, Power Query, Forecasting)
- Data Types
- Dynamic Array Functions
- Natural Language Queries
- Insert Data from Pictures

- **AI in PowerPoint**

- Data Analysis and Insights (Design Ideas, Smart Formatting)
- Content Generation
- Visual Enhancements
- Data Visualization
- AI-Powered Presentation Makers

- **For DevOps**

- Automating Routine Task
- Predictive analytics
- Continuous integration and Delivery (CI/CD)
- Real-Time Monitoring
- Enhanced Collaboration
- Security Enhancements

- Module 3: Continuous Integration and Deployment (CI/CD)

Learn Linux commands and scripting for automation.

- **CI/CD Concepts and Practices**

- CI/CD concepts and practices
- Setting up CI/CD pipelines
- Automated testing and deployment
- Monitoring and logging

- **Infrastructure as Code (IaC)**

- Introduction to IaC
- Tools for IaC (Terraform, CloudFormation)
- Writing and managing infrastructure code
- Best practices for IaC

- **Monitoring and Logging**

- Importance of monitoring and logging
- Tools for monitoring (Prometheus, Grafana)
- Tools for logging (ELK Stack, Splunk)
- Setting up monitoring and logging systems

Module 4: Security in DevOps

Understand how to containerize applications using Docker.

- **Security in DevOps**

- DevSecOps principles

- Integrating security into CI/CD pipelines
- Security best practices for DevOps
- Tools for security (Aqua, Twistlock)

- Advanced Topics

- Microservices architectures
- Serverless computing
- Site Reliability Engineering (SRE)
- DevOps for mobile applications

Module 5: Hands-on Projects

Learn Kubernetes for managing containerized applications.

- Introduction to Kubernetes

- Setting up a CI/CD pipeline for a sample application
- Containerizing an application with Docker
- Deploying an application on Kubernetes
- Implementing IaC with Terraform