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 Tutorials & Prompt Engineering

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 Full Stack Development

- How To Use AI To Learn For Developers
- AI-Powered Code Generation and Debugging
- AI Prompts for Enhanced User Interfaces (Front-end Designs)
- Prompts For Learning To Code
- AI Prompting Practice
- AI-Powered Frameworks and Libraries
- AI Prompting CheatSheets

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