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

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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 Devops**
  - Automating Routine Tasks
  - 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.

- **Continuous Integration and Deployment (CI/CD)**
    - 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
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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

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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