

Introduction to DevOps

Course Description

DevOps is the union of people, process, and products to enable the continuous delivery of value to end users. It aims to create a culture and environment where building, testing, and releasing software can happen rapidly, frequently, and more reliably, so you can innovate like a startup and scale for the enterprise. By taking this introductory DevOps course, you'll be able to define DevOps, understand why you need DevOps, and learn how you can get started with DevOps. You'll learn the key ideas and techniques to bring development and operations together to produce higher-quality software and deliver it more quickly.

Learning Objectives

After completing this course, we expect learners to:

- Define DevOps and describe its value, history, and building blocks.
- Describe how to unify processes and improve collaboration between development and operations.
- Identify areas to consider when incorporating DevOps practice for continuous improvement.
- Explain the key concepts and benefits of Continuous Integration (CI), continuous testing, and continuous deployment.
- Identify tools and practices for implementing CI, testing, and continuous deployment.
- Explain the key concepts and benefits of Release Management, configuration management, and monitoring in DevOps.
- Identify tools and practices for implementing Release Management, configuration management, and monitoring.

Course Outline

Week 1: Introduction to DevOps

Introduction to the definition, value, history, building blocks, and best practices of DevOps

Week 2: A unified process between development and operations

Introduction to how Agile software development process applies to DevOps, the importance of integrating source control in DevOps, and how automation is applied to DevOps

Week 3: Continuous Integration (CI), continuous testing, and continuous delivery

Introduction to the key concepts, benefits, tools, and practices of implementing Continuous Integration (CI), continuous testing, and continuous delivery

Week 4: Configuration management, release management, and monitoring and learning

Introduction to the key concepts, benefits, tools and practices of implementing release management, configuration management, monitoring, and learning in DevOps.

Grading

This course will be graded based on the following criteria:

Assignment Types	# of Assignments	% of Final Grade
Module Assessments	4	55
Exercises	4	20
Final Exam	1	25

Course Schedule

Week	Topic	Assignments
0	Start Here	---
1	Overview of DevOps	<ul style="list-style-type: none">• Assessments• Exercise
2	A Unified Process between Dev and Ops	<ul style="list-style-type: none">• Assessments• Exercise
3	Continuous Integration, Continuous Testing, and Continuous Delivery	<ul style="list-style-type: none">• Assessments• Exercise
4	Configuration Management, Release Management, and Monitoring & Learning	<ul style="list-style-type: none">• Assessments• Exercise• Final Exam