# DevOps Foundations 2026

**Introduction:**

This course provides a deep and structured foundation in modern DevOps principles, culture, and practices. Covering core concepts, mental models, reliability engineering, incident management, CI/CD, observability, and GitOps, the course enables participants to understand and implement DevOps at scale. Through practical insights and proven methodologies, learners will gain the skills needed to drive collaboration, automate delivery, and improve system reliability across dynamic, distributed environments.

**You must know!**

**Hours:**
40 academic hours

**Our lecturers:**
INT College has a faculty of instructors and training experts, leading in their fields, with extensive practical experience in applying and teaching the subjects in the hi-tech industry in Israel and worldwide.

**Eligibility for INT College's Certificate**:
An INT College certificate will be awarded to graduates who meet the course's regulations, submit all exercises and assignments, and attend at least 85% of the lessons.

**Course Objectives**
**By the end of this course, participants will be able to:**

- Understand the core principles and responsibilities of DevOps
- Apply systems thinking and DevOps mental models to delivery workflows
- Navigate cultural dynamics and foster accountability across teams
- Design resilient CI/CD pipelines and release strategies
- Manage reliability using SLIs, SLOs, and error budgets
- Handle real-world incidents with clear escalation and response practices
- Implement observability across metrics, logs, and traces

- Use Git, GitOps, and modern tools like Jenkins, ArgoCD, and Prometheus
- Evaluate DevOps maturity and measure success

**Target Audience:**

This course is designed for software engineers, DevOps practitioners, SREs, system architects, engineering managers, and anyone involved in building, deploying, or maintaining production systems.

**Prerequisites:**

Participants should have basic familiarity with software development processes, version control (e.g., Git), and general system architecture. Prior experience with cloud platforms or CI/CD pipelines is helpful but not required.

**Course Topics:**

**Core Concepts**

- DevOps problem statement
- SDLC overview
- Silos & org failures
- DevOps responsibilities
- SRE vs DevOps
- Platform engineering

**DevOps Mental Models**

- DevOps as a systems problem
- Flow vs utilization
- Local vs global optimization
- Feedback loops in software delivery
- Conway's Law

**Organizational Dynamics & Culture**

- Incentives and behavior in orgs
- Dev vs Ops conflict patterns
- Ownership and accountability
- Blameless culture
- Why DevOps transformations fail

**CI/CD Design & Release Strategies**

- Pipeline design principles
- Build vs test vs deploy stages
- Artifact immutability
- Feature flags
- Blue/green deployments
- Canary releases

**Reliability Engineering Foundations**

- Reliability vs availability
- Error budgets
- SLIs, SLOs, SLAs
- Toil and automation
- Tradeoffs: speed vs safety

**Incident Management**

- What an incident is
- Incident severity levels
- On-call rotations
- Escalation policies
- Incident communication
- Postmortems & RCAs

**Observability as a System**

- Observability vs monitoring

- Golden signals
- High-cardinality metrics
- Alert fatigue
- SLO-based alerting

**Distributed Systems**

- Latency vs throughput
- Partial failures
- Network partitions
- Timeouts & retries
- Backpressure in practice

**GitOps Practice**

- Git as source of truth
- Desired vs actual state
- Pull-based deployments
- GitOps failure modes

**DevOps Evolution**

- DevOps maturity models
- When DevOps becomes Platform
- Platform teams vs enablement
- Measuring DevOps success

**CI/CD & Git**

- Shift-left mindset
- CI pipelines
- Jenkins overview
- Jenkins pipelines
- Git mental model
- Commits, trees, blobs

- Branching & Gitflow
- Semantic versioning

**Observability, Distributed Systems & GitOps**

- Metrics, logs, traces
- Prometheus
- Grafana
- Elastic stack
- CAP theorem
- Raft basics
- Idempotency
- GitOps principles
- ArgoCD
- Kustomize

**The college reserves the right to make changes to the curriculum, course duration, teaching staff, and other related aspects at its sole discretion. Any information provided in the college's informational materials shall not be considered binding or constitute any form of commitment by the college.**


**תל אביב**

המרץ 2