

# INT331:FUNDAMENTALS OF DEVOPS

L:2 T:0 P:2 Credits:3

**Course Outcomes:** Through this course students should be able to

- CO1 :: Understand the concept of DevOps.
- CO2 :: Cognizant the concept of DevOps on cloud with basic LINUX commands.
- CO3 :: Demonstrate the concept of DevOps commands and workflow in a systematic way
- CO4 :: Apply the advance concept of DevOps with real time applications.
- CO5 :: Analyze the concept of DevOps methodology and tools in a systematic way.
- CO6 :: Editorialize the working of Maven with example.

## Unit I

**Introduction to DevOps Concepts** : What is DevOps, DevOps Lifecycle, Importance and Benefits of DevOps, Collaboration between Development and operations, Microservices and containers., Version Control System, DevOps Technical Challenges and Tools used.

## Unit II

**DevOps on cloud with basic LINUX commands** : Essentials of cloud computing, Architecture of cloud and virtualization, Different cloud providers, Why we need DevOps on cloud, Introduction to Amazon Web Services, Continuous Integration (CI), Continuous Delivery (CD), Continuous Deployment and continuous monitoring, Basic commands of LINUX.

## Unit III

**Basic Git** : introduction to Git, Git lifecycle, Common Git command, Git Workflow, Working with Remote Repository, Version controlling using Git

## Unit IV

**Advanced Git** : Source code management with Git, Comparison commands, Branching and merging, Rebasing, Stashing, Tagging

## Unit V

**DevOps Trends** : DevOps Market Trends, DevOps Engineer Skills, DevOps Delivery Pipeline, DevOps Ecosystem, Role of a DevOps Engineer, Devops Tools: Git, Docker, Selenium, Maven, Jenkins, Puppet, Ansible, Kubernetes, Nagios

## Unit VI

**Working with Maven** : Introduction to maven, maven build lifecycle, maven repository, project object model, maven dependencies, maven plugins, maven project structure

## List of Practicals / Experiments:

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- Practical1:Installation of Oracle VM Virtual Box and create Virtual MachinePractical 2:Installation of Linux, Implementation of basic Linux commands□chmod, grep, wget, chown, find, cat, echo, ifconfig, cp,ping,kill, tail, rm, rmdir, cd, mkdir, vi, mv. Practical 3:Installation of packages using RPM and YUMPractical 4:Installation of Git, Implementing common Git CommandPractical 5:Repository creation in Git, Git Branch,source code management with GitPractical6:Installation of Maven and Work

## Text Books:

1. LINUX POCKET GUIDE: ESSENTIAL COMMANDS by DANIEL J. BARRETT, O'REILLY

## References:

1. DEVOPS: A SOFTWARE ARCHITECT'S PERSPECTIVE (SEI SERIES IN SOFTWARE ENGINEERING) by LEN BASS , INGO WEBER, LIMING ZHU, ADDISON-WESLEY

