# INT331:FUNDAMENTALS OF DEVOPS

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

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

CO1 :: Study of various Software Development Methodologies and Cloud Computing.

CO2 :: Understand the basic Linux commands with respect to Devops.

CO3 :: Understand the concept of Devops Methodology and tools in a systematic way.

CO4 :: Analyze the basics of Version Control and Git tool.

CO5 :: Demonstrate essentials and source code management using Git tool.

CO6 :: Demonstrate the concept of Maven with the help of working.

**Unit I**

**Introduction to Software Development** : What is Software Development, Software Development Life Cycle, Traditional Models for SDLC

**Unit II**

**Introduction to DevOps** : What is DevOps, Industry Importance of DevOps, DevOps Lifecycle, Continuous Development, Continuous Testing, Configuration Management, Continuous Integration, Continuous Monitoring of software throughout its development life cycle

**Unit III**

**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 IV**

**Software Version Control** : Understanding basics of version control, Control Concepts of different types of Version Control Systems

**Unit V**

**Overview to Git** : Git Lifecycle, Common Git Commands, Working with Branches in Git, Git Workflow, Working with Remote Repositories, Version controlling using Git, Source code management with Git

**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:**

**1.**

- Installation of Oracle VM Virtual Box and create Virtual Machine

**2.**

- Installation of Linux, Implemention of basic Linux commands□chmod, grep, wget, chown, find, cat, echo, ifconfig, cp,ping,kill, tail, rm, rmdir, cd, mkdir, vi, mv.

**3.**

- Installation of packages using RPM and YUM

**4.**

- Installation of Git, Implementing common Git Command

**5.**

- Repository creation in Git, Git Branch,source code management with Git

**6.**

- 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