# ****Syllabus****

**Introduction to DevOps -**

* What is DevOps?
* Why DevOps is needed?
* An Insight into DevOps Roles
* The Different Perspectives of Dev and Ops
* Conflictual State in DevOps and its Solution
* What is DevOps Transition?
* Various Cultural Impediments
* Infrastructure Layouts
* Infrastructure Challenges
* Understanding Scalability
* Understanding Availability
* Defining Networking Concepts
* Discuss about SDLC methodologies and Release Management.
* Discuss Live Projects in details, gather the requirements.
* Create a deployment strategy, deployments, security and structure.
* Create instance on cloud step-by-step and discuss about Linux structure.
* Hands on Linux command and understanding of Bash shell scripting.
* Discuss about network concepts, Linux installations on Host/Guest VMs.
* Create EC2 instance in AWS.
* Installation of web Application and Database server.

**Linux - OS**

* History
* File System
* Creation of file and directory
* User & File management
* Process management
* Job Scheduling
* Package management
* Server connection
* Application and Web server – installation & Configuration
* Shell script overview

## Source Code Management – GIT

* Installation & Configuration
* Creating repository
* Add source code to repository
* Creating branches
* Git Commands - Clone/Pull/Push/Fetch/Merge/Rebase/Commit
* Git Hub
* Create projects/repository on Git HUB
* Git HUB access control.

**Jenkins**

* Installation and configuration of Jenkins and Jenkins plug-in.
* Introduction of Jenkins, Configure and discuss Jenkins Jobs.
* Learn Build steps, Post-Build Actions, Secure Jenkins, Notifications.
* Learn more about advanced build jobs, Maintain Jenkins, Automated Unit and Integration in Jenkins.
* Discuss the challenges, any issues or live system scenarios

**Build Tools – Maven**

* Installation and configuration
* Writing POM file & configure setting file
* Maven life cycle
* Setting local & Global repository
* Setting Nexus for Dependencies management

**Ansible**

* Installation and configuration of Ansible.
* Discuss ansible, Ansible-playbooks, Ansible command line.
* Learn Ansible Lists, Dictionaries, Tasks, Groups, Variables and Modules.
* Learn more about Ansible Facts, Roles, Templates
* Ansible playbooks for Custom Scripts (Shell or Python).
* Identify the need and live scenarios and discuss in more details.

**Containerization – Docker**

* Installation & Configuration
* Docker Hub
* Writing Docker File
* Creating Docker images
* Creating Docker container
* Setting up Docker repository
* Pull, Tag and push docker images
* Docker commands

**Cloud Computing – AWS**

* Amazon Web services
* Account creation
* EC2 Instance creation
* Building instance
* Types of instances
* Elastic IP, public & private IP o Logging to Instance from Putty
* Key pairs, Public & Private key o AWS services overview.
* IAM
* VPC
* S3
* ELB
* Auto Scaling