Course Curriculum:

1. > Introduction to DevOps and its Necessities

**Learning Objectives** - In this module, you will understand what is DevOps and its necessities, its day-to-day roles and the problems & solutions. You will also learn about the various infrastructure layouts and understand Scalability and Availability.

**Topics** - DevOps, DevOps Roles, DevOps Necessities, DevOps Problems & Solutions, Making a DevOps Transition, Identifying cultural impediments and overcoming it, Building Accountability and Trust, Understanding the Infrastructure layouts and its Challenges, Understand Scalability and Availability, Networking Concepts from an enterprise prospective, Annie’s Quizzes, LAB, Q & A, Quick Recap.

2. > Understand Common Infrastructure Servers

**Learning Objectives -**In this module, you will learn about the various Infrastructure Servers that commonly face deployment in an Organization, its Configuration & Optimization.

**Topics -**Working of DNS Server at Internet Scale, DNS Installation, DNS Configuration, DNS Tuning, Understand the working of Geolocation, Understand Web Servers like Apache, Ngnix and their differences,Configure Apache and Nginx for the Enterprise, Understand HA and Setup HA Proxy for various Servers, Setup NFS and Openfiler for storage presentation.

3. > Implement Automated Installations and Deployments

**Learning Objectives** - In this module, you will learn about Automatic Installation of Servers, Continuous Integration, Configuration Deployments and Packaging.

**Topics** - Installation of Linux Servers using PXE boot or kickstart method, Automatic system updates, Configure SVN or Git for version control, Configure Jenkins for Build and deployments,Building an RPM package, Installation and Configuration of Puppet for deployments.

4. > Understand Performance tuning aspects and basic Security for Infrastructure

**Learning Objectives** - In this module, you will learn about Performance aspects of the Infrastructure from an Enterprise perspective. We will also look at the Implementation of the Security and make our environments more secure.

**Topics** - Operating system tuning concepts and its Concerns, Types of Disk Schedulers, Performance and Use Cases, Network tuning Parameters and their Influence, Bench marking servers like Apache Web Server, Understand the Security at the OS and Network level, Configure Linux Firewall and other security aspects for a secured environment.

5. > Basics of Bash/Python Scripting

**Learning Objectives** - In this module, you will learn about the basics of Scripting. For automating tasks and making things easier, we will explore Scripting.

**Topics** - Basics of Bash Shell like file descriptors, environment, Understand the basic syntax of bash scripting, Understand loops, its conditions and return status, Understand and configure crontab for automating a task, Installation and Configuration of ClusterShell for deployments on large clusters, Basics of Python and its comparisons with bash scripting.

6. > Basics of Virtualization and it's Concepts

**Learning Objectives** - In this module, you will learn about the Basics of Virtualization, you will understand the different types of Virtualization's and their use cases.

**Topics** - What is Virtualization? Types of Virtualization, Difference between Xen and KVM, Installation of virtual machines using Virtualbox, Vmware, KVM, Understand the various components of virtualization, Introduction to the Cloud virtualization.

7. > Monitoring And Logging

**Learning Objectives** - In this module, you will learn about Monitoring and Logging. To make sure that things are working fine, we need to monitor the health of the services and do logging to keeping a track of the events and alerts.

**Topics**- Understand Logging in Linux systems and its working for various services, Introduction to various logging tools, Understand System auditing, Install and Configure Nagios Monitoring for the Infrastructure, Writing custom plugins for Nagios.

8. > The Useful DevOps Tools & Commands

**Learning Objectives** - In this module, we will look at various DevOps tools/commands that are necessary for the day-to-day activities. Tools are a very important part of any engineer and it makes life easier.

**Topics** - Understand the Dev and Production environments in an organization, DevOps Best Practices, Understand Openssl and Openssh details, Understand rsync for backups, Understand Commands like: lsof, netstat, Understand Virtual Memory, Free, top, vmstat, iostat, uptime, find, screen, strace, Disk commands like - df, du, mkfs, tune2fs, fdisk, dd,Understand /etc/fstab, mount commands.