Course Code	Course name	L	T	P	C
CSDV3022P	DevSecOps: Integrating security into DevOps practices	4	0	0	4
Total Units to be Covered: 05	Total Contact Hours: 60				
Prerequisite(s):	DevOps Fundamentals and SCM - CSDV2009P	Syllabus version: 1.0			

Syllabus

Unit I: Securing DevOps **12 Lecture Hours**

The DevOps Approach (Continuous integration, Continuous delivery, Infrastructure as a service, Culture, and trust), Security in DevOps, Continuous Security (Test driven security, Monitoring and responding to attacks, Assessing risks, and maturing Security).

Unit II: Protecting Web Applications **12 Lecture Hours**

Securing and testing web Apps, Website attacks, and content security (Cross-site scripting, content security policy, cross-site request forgery, clickjacking, and Iframes protection), Methods for authenticating users (HTTP basic authentication, Password Management, Identity Providers, Sessions and cookie security, Testing Authentication), Managing Dependencies (Node.js package management, Python requirements)

Unit III: Securing Delivery Pipeline **12 Lecture Hours**

Access control to code management infrastructure (managing permissions in GitHub Organization, Managing permissions between GitHub and CircleCI, Signing commits and Tags with GIT), Access control for container storage (Managing permissions between DockerHub and CircleCI, Signing containers with Docker content trust), Access control for infrastructure management (Managing permissions using AWS roles and policies, Distributing secrets to production system)

Unit IV: Maturing DevOps Security: Assessing Risks **12 Lecture Hours**

What is Risk Management? The CIA triad, Establishing the top threats to an organization, Quantifying the impact of risk, Identifying threats and measuring Vulnerabilities, Rapid Risk assessment, recording and tracking risks.

Unit V: Maturing DevOps Security: Testing and **12 Lecture Hours**

Continuous Security

Testing Security: Maintaining Security, auditing internal Applications and Services, Red teams and External Pen Testing, and Bug Bounty Programs.

Continuous Security: Practice and repetition: 10,000 hours of Security, Integrating Security into DevOps, Preparing for Worst, Driving the Change.

Total lecture Hours 60