

CSE11155	Application Security	L	T	P	C
Version 1.0	Contact Hours 45 Hours	3	0	0	3
Pre-requisite/Exposure	Web Technology				
Co-requisite	NIL				

Course Objectives:

- To enable students to identify different security needs for different applications.
- To provide the fundamentals of E-Commerce application security requirements.
- To enhance the skill of students to identify security requirements of Web Applications.
- To allow students to identify challenging areas in a proposed security protocol for web applications.

Course Outcomes:

On the completion of this course, the student will be able to

CO1: Describe web-based applications and associated threats and differentiate them from mainframe,client-server, applications.

CO2: Understand the role of web-based applications in E-commerce transactions.CO3: Explain social networking and evaluate associated risks.

CO4: Evaluate web application security vulnerabilities.

CO5: Design a we b application Vulnerability and Security Assessment Test Plan.

Course Description:

It is your responsibility as a student to learn about concepts, methods, procedures, and strategies that are used to secure the security of data contained within web-based applications over the duration of this course. This course covers web application security coding methodologies and processes, web application security configuration management strategies, and web application security standards, amongst other topics. It is the goal of this course to investigate the convergence of web application security, as well as the danger vectors and attack tactics that are associated with it. Other topics covered in this course include secure development techniques, web application secure configuration methodologies, and legal problems connected with protecting sensitive digital assets. Some of the subjects addressed include secure configuration and development, vulnerability and risk mitigation, vulnerability assessments, and quality assurance testing.

Course Content:

Units	Lecture Hours
Unit-I: Types of Applications: Different types of applications and their security requirements. method of access, users, connection type (internet/non-internet), protocols used, and languages used to develop the software for each	9

Units	Lecture Hours
type of application. Security Threats to Linux, Basic Components of Linux Security, User Privileges and Permissions, Filesystems, Volumes, and Encryption	
Unit-II: E-Commerce Transactions Web Application: Security Testing of an Online Banking Service:- The online banking system, Understanding the services, Development of a custom application, Determining valid branch and account numbers, Determining valid PINs, Finding account owners, Finding personal information New Security Issues in Mobile E-Commerce:- Mobile Commerce - The Next Generation of E-Commerce, Mobile E-Commerce Security, Security Risks in Mobile Commerce, The Wireless Device, Application Risks, Malicious code risks, Software flaws, Communication Link Risks. Problems in Policing E-Commerce Crime:- Barriers to the Investigation of Computer Crime, Why National Law Will Fail to Address the Problem, Making Law Relevant, Conflict of Laws, The Hurdles to be Overcome.	9
Unit-III: Web Application Security Vulnerabilities: The Structure of a Modern Web Application, Modern Versus Legacy Web Applications, REST APIs, JavaScript Object Notation, Identifying Weak Points in Application Architecture, DoS Vulnerabilities , Common Vulnerabilities and Exposures Database, Vulnerability Discovery , Vulnerability Discovery , Vulnerability Management.	9
Unit-IV: Web Application Security Controls: Defending Against Injection, Mitigating SQL Injection, Detecting SQL Injection, Prepared Statements, Generic Injection Defences, Exploiting Third-Party Dependencies, Methods of Integration, Self-Hosted Application Integrations.	9
Unit-V	9

Relationship between Course Outcomes (COs) and Program Outcomes (POs):

1 = Weakly Mapped

2 = Moderately Mapped 3 = Strongly Mapped

Course Code	Course Name	COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
CSE11	Applicat	CO1115	2	3	2	2	2	3	1	-	2	-	-	2	3	2	3
155	ion	5.1															
	Security	CO1115	3	3	2	3	1	1	3	-	1	-	-	3	3	3	2
		5.2															
		CO1115	2	1	3	2	3	1	2	-	3	-	-	2	1	3	2
		5.3															
		CO1115	3	2	3	2	2	1	3	-	1	-	-	3	2	3	3

Course Code	Course Name	COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS O1	PS O2	PS O3
		5.4															
		CO1115	3	2	3	3	3	1	3	-	2	-	-	1	2	2	1
		5.5															
		CO1115	2.	2.	2.	2.	2.	1.	2.	-	1.	-	-	2.2	2.2	2.6	2.2
		5	6	2	6	4	2	4	4		8						