

GANPAT UNIVERSITY									
FACULTY OF ENGINEERING & TECHNOLOGY									
Programme	Bachelor of Technology				Branch/Spec	Computer Science & Engineering (CSE)			
Semester	VI				Version	1.0.0.0			
Effective from Academic Year		2026-27			Effective for the batch Admitted in			June 2024	
Subject code	2CSE60E30		Subject Name		Vulnerability Assessment and Penetration Testing				
Teaching scheme					Examination scheme (Marks)				
(Per week)	Lecture(DT)		Practical(Lab)		Total		CE	SEE	Total
	L	TU	P	TW					
Credit	3	0	1	0	4	Theory	40	60	100
Hours	3	0	2	0	5	Practical	30	20	50
Pre-requisites:									
Basics of communication system, Computer Networks									
Learning Outcome:									
After Successful completion of the course, students will be able to:									
<ul style="list-style-type: none"> Understand the different ethical hacking techniques. Discover the vulnerabilities, loophole on the web server and system. Apply the knowledge of ethical hacking to perform live attacks. Prepare VAPT report of the attacks. 									
Theory syllabus									
Unit	Content								Hrs
1	An Introduction to Ethical Hacking : Security Fundamental, Security testing, Hacker and Cracker, Test Plans-keeping It Legal, Ethical and Legality								3
2	The Technical Foundations of Hacking: The Attacker's Process, The Ethical Hacker's Process, Security and the Stack								8
3	Foot printing and Scanning: Information Gathering, Determining the Network Range, Identifying Active Machines, Finding Open Ports and Access Points, OS Fingerprinting Services, Mapping the Network Attack Surface								7
4	Vulnerability Assessment and Penetration Testing: Need for vulnerability assessment, risk Prevention, Compliance requirement.								8
5	Enumeration and System Hacking : Enumeration, System Hacking, Denial of Service and Distributed Denial of Service, Sniffers.								8
6	Web Server Hacking, Web Applications, Database Attacks: Web Server Hacking, Web Application Hacking, Database Hacking , Session Hijacking								11
Suggested Practical List									
Practical contents will be based on following concepts:									

System based attacks, Web server and web page attacks, Malware Design, Mobile VAPT

Text Books

1 Certified Ethical Hacker Michael Gregg, Pearson IT Certification

2 Hacking the Hacker, Roger Grimes, Wiley

3 Learning Nessus for Penetration Testing By Himanshu Kumar, PACKT publication

4 Learn Ethical Hacking from Scratch: Your stepping stone to penetration testing Zaid Sabih by Packt Publishing Ltd.

Reference Books

1 Ethical Hacking and Penetration Testing Guide Rafay Baloch by CRC Press

2 Network Security. Wiley - Perez, Andre.

Mooc Course

<https://nptel.ac.in/courses/106/105/106105217/>

Course Outcomes:

COs	Description
-----	-------------

CO1	Understand the different ethical hacking techniques
-----	---

CO2	Discover the vulnerabilities, loophole on web server and system
-----	---

CO3	Apply the knowledge of ethical hacking to perform live attacks
-----	--

CO4	Prepare VAPT report of the attacks
-----	------------------------------------

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	1	1	2	3	3	3	2	2	0
CO2	3	3	3	1	1	2	3	3	2	2	2	0
CO3	3	3	2	2	2	3	3	3	3	3	3	2
CO4	3	2	2	2	3	2	2	2	3	3	3	1

Mapping of CO and PO: