



GUJARAT TECHNOLOGICAL UNIVERSITY

Syllabus for Integrated MSc, 9th Semester

Branch: Computer Science

Subject Name: Ethical Hacking

Subject Code: 1390306

Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks				Total Marks
L	T	P		Theory Marks		Practical Marks		
				ESE(E)	PA (M)	PA (I)	ESE (V)	
3	0	2	4	70	30	20	30	150

Content:

Sr. No.	Content	Teaching Hours	Module Weightage (%)
1	Introduction to ethical Hacking: Security Fundamental, Security testing, Hacker and Cracker, Descriptions, Test Plans-keeping It legal, Ethical and Legality, The Attacker's Process, The Ethical Hacker's Process, Security and the Stack.	8	15
2	Scanning and Foot Printing: Information Gathering, Determining the Network Range, Identifying Active Machines, Finding Open Ports and Access Points, OS Fingerprinting Services, Mapping the Network Attack Surface, Enumeration, System Hacking.	9	25
3	Malware Threats: Viruses and Worms, Trojans, Covert Communication, Keystroke Logging and Spyware, Malware Counter measures, Sniffers, Session Hijacking, Denial of Service and Distributed Denial of Service.	7	15
4	Web Server Hacking & Mobile Security: Server Hacking, Web Application Hacking, Database Hacking, Wireless Technologies, Mobile Device Operation and Security, Wireless LANs.	9	25
5	Firewalls, IDS and Social Engineering: Intrusion Detection Systems, Firewalls, Honeypots, Physical Security, Social Engineering.	7	10

Reference Books:

1. Hacking the Hacker, Roger Grimes, Wiley
2. The Unofficial Guide to Ethical Hacking, Ankit Fadia, Premier Press
3. Certified Ethical Hacker, Version 9, Second Edition, Michael Gregg, Pearson IT Certification



Course Outcome:

1. Describe and understand the basics of the ethical hacking.
2. Students will be able to perform the foot printing and scanning.
3. Demonstrate the techniques for system hacking.
4. Characterize the malware and their attacks, detect and prevent them Determine the signature of different attacks and prevent them.
5. Students will able to Detect and prevent the security attacks in different environment.

List of Experiments:

1. List the tools for Ethical Hacking.
2. Implement Foot printing and Reconnaissance using tools 3d Traceroute, Alchemy Eye, DNS Tools and Network Solution Whois.
3. Implement Network Scanning using tools Advanced Port Scanner, Colasoft Ping Tool, Hide Your IP Address, Nessus and Nmap.
4. Implement Enumeration using tools Default Password List, Default Password List, OpUtil Network Monitoring Tool and OpUtil Network Monitoring Tool.
5. Implement system hacking using tools Actual spy, Alchemy Remote Executor, Armor Tool and F Secure BlackLight.
6. Implement Trojan and Backdoors using tools Absolute Startup Manager, Absolute Startup Manager, Netwirx Services Monitor and StartEd Lite.
7. Implement Viruses and Worms using tools Anubis Analyzing UnknownBinaries, Filterbit, Sunbelt CWSandbox and ThreatExpert.
8. Implement sniffers using tools Colasoft Capsa Network Analyzer, EffeTech HTTP Sniffer, Packet Sniffer and PRTG Network Monitor.
9. Write a research paper in which Ethical Hacking tools are used to address any problem definition in cyber security.

List of open-Source software/learning Websites:

- <https://hackaday.com/>
- <https://breakthesecurity.cysecurity.org/>
- <https://www.eccouncil.org/programs/certified-ethical-hacker-ceh/>
- <https://www.hackthissite.org/>