

**DEPARTMENT OF INFORMATION TECHNOLOGY & COMPUTER
ENGINEERING**



LESSON PLAN

SUBJECT: NETWORK SECURITY LAB

BRANCH: 6TH SEM, IT

FACULTY NAME: MR.RABI KUMAR DARJI

Jharsuguda Engineering School, Jharsuguda

JES, JHARSUGUDA

Department of Information Technology

Vision:

To focus on development of skilled and confident personalities of today and tomorrow by using cutting edge technology in the department of Information Technology to accept need based challenges with a sense of social responsibilities.

Mission:

- M1: To impart quality education by implementing state-of-the-art teaching-learning methods to enrich the academic competency, credibility and integrity of the students.
- M2: To implement the educational program in our department from fundamental engineering to recent technology as per emerging trends in the field of Information Technology.
- M3: To facilitate a conducive ambience and infrastructure to develop professional skills and nurture innovation in students.
- M4: To inculcate sensitivity towards society, respect for environment and promote high standards of ethics.

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Learning Outcomes

1. Understand the fundamentals of network security and cryptography.
2. Install and configure antivirus and firewall software.
3. Implement basic encryption and decryption techniques.
4. Understand VPN concepts and secure communication mechanisms.
5. Identify common security threats and hacking tools.
6. Apply digital signatures for secure data transmission.

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LESSON PLAN

NETWORK SECURITY LABORATORY

Course Code: PR-1

Programme: Diploma in Information Technology

Semester: VI

Total Contact Periods: 60

Faculty Name: MR. RABI KUMAR DARJI

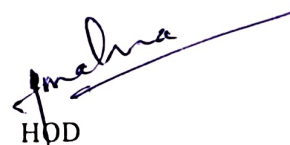
Class No.	Experiment / Practical Topic	Learning Objectives	Activities / Tools Used	Periods	Cumulative Periods
1	Installation of Antivirus Software	Understand antivirus installation	Install and scan system	2	2
2	Comparison of Antivirus Software	Compare antivirus features	Feature comparison	2	4
3	Updating Antivirus Databases	Understand signature updates	Manual/auto update	2	6
4	Firewall Installation	Understand firewall basics	Configure firewall	2	8
5	Firewall Parameters Study	Study firewall rules	Rule testing	2	10
6	Firewall Log Analysis	Analyze firewall logs	Log monitoring	2	12
7	XOR Encryption Program	Understand encryption	C program execution	2	14
8	XOR Decryption Program	Understand decryption	C program execution	2	16
9	File Encryption Utility	Understand file security	Encrypt files	2	18
10	VPN Concept Study	Understand VPN working	VPN demo	2	20
11	VPN Configuration	Configure VPN	VPN setup	2	22
12	VPN Performance Study	Analyze VPN performance	Speed testing	2	24
13	Hacking Tools	Understand	Tool demo	2	26

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	Introduction	hacking tools			
14	Password Attacks Study	Study password attacks	Tool usage	2	28
15	Network Scanning Tools	Understand scanning	Nmap demo	2	30
16	Vulnerability Scanning	Identify vulnerabilities	Scanner demo	2	32
17	Digital Signature Basics	Understand digital signature	Concept demo	2	34
18	Digital Signature Creation	Create digital signature	Signature generation	2	36
19	Digital Signature Verification	Verify digital signature	Verification process	2	38
20	Hashing Techniques	Understand hashing	Hash demo	2	40
21	Secure Communication	Understand secure communication	Encrypted message demo	2	42
22	Email Security Study	Understand secure email	PGP/S-MIME demo	2	44
23	Web Security Basics	Understand web threats	Demo attacks	2	46
24	Firewall Case Study	Analyze firewall	Case analysis	2	48
25	VPN Case Study	Analyze VPN	Case analysis	2	50
26	Security Policy Study	Understand policies	Policy discussion	2	52
27	Revision Practical	Revise all experiments	Hands-on practice	2	54
28	Mini Practical Exercise	Apply concepts	Student experiment	2	56
29	Pre-Exam Practice	Exam preparation	Full practice	2	58
30	End Semester Practical Exam	Final evaluation	University exam	2	60



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