

DIPLOMA IN CYBER SECURITY

MODULE 1 - OPERATING SYSTEM BASICS	
CHAPTER 1	WINDOWS
<ul style="list-style-type: none">• Introduction, Types Of Operating System, My Computer, Recycle Bin, Desktop, Drives; Creating, Renaming a directory/folder, Make a file read only, hidden, Editing a file; Delete a file.• Listing the files in the directory, Create a file, Copy a file from one directory to the other, Deleting all files from a directory/folder, Deleting a director/folder, Formatting a hard disk and loading operating system, Domain, workgroup, Active Directory, User Management, Network Setting, Services, IIS Configuration	
CHAPTER 2	LINUX
<ul style="list-style-type: none">• Introduction, History of Linux, Distributions of Linux, Devices and drivers, File system hierarchy, The components: Kernel, Distribution, XFree86, Sawfish, Gnome, The command line commands, File, management commands, Working with nano, Working with help (man).• SSH and X-forwarding, Managing compressed archives with zip and tar, Working with GNU screen, How to add users and groups, working with su, working with sudo, Changing user password, Printing, Installing software with Yum, Yast, Rpm, Installing webmin.	

MODULE 2 - DATA COMMUNICATION & NETWORKING	
CHAPTER 1	INTRODUCTION TO DATA COMMUNICATION AND NETWORKING
<ul style="list-style-type: none">• Fundamentals of data communication and networking• Network Reference Models: OSI and TCP/IP Models• Transmission media and network devices	

CHAPTER 2	PHYSICAL AND DATA LINK LAYER FUNCTIONALITIES
	<ul style="list-style-type: none"> • Analog and Digital Signals • Encoding • Multiplexing and Switching: FDM, TDM, WDM, SDM, Message Switching and • Circuit Switching and Packet Switching • Data Link Control Protocols: Token Passing, CSMA/CD, CSMA, CSMA/CA
CHAPTER 3	INTERNET PROTOCOL & SERVICES
	<ul style="list-style-type: none"> • Network Layer : Internetworking, and IP addressing, ARP, RARP, ICMP, IGMP • Transport Layer protocols: TCP & UDP • Application Layer protocols: HTTP, HTTPS, SMTP, POP, DNS, TELNET, FTP • Internet and its Services: Intranet, Extranet, www, Email

MODULE 3 – INFORMATION SECURITY	
CHAPTER 1	INFORMATION SECURITY CONCEPTS AND CRYPTOGRAPHY
	<ul style="list-style-type: none"> • Information Security Concepts: Information security issues, goals, architecture, attacks, Security Services and Mechanisms. • Introduction to Cryptography: Network security model, Cryptographic systems, Cryptanalysis, Steganography. • Types of Cryptography: Symmetric key and Asymmetric Key Cryptography, • Encryption and Decryption Techniques. • Cryptographic Algorithms: Cryptographic hash, Message Digest, Data Encryption Standard, Advanced Encryption Standard, RSA, ECC (Introductory concepts only)
CHAPTER 2	SECURITY THREATS AND VULNERABILITIES
	<ul style="list-style-type: none"> • Overview of Security Threats and Vulnerability: Types of attacks on • Confidentiality, Integrity and Availability. Vulnerability and Threats. • Malware: Viruses, Worms, Trojan horses • Security Counter Measures; Intrusion Detection Systems, Antivirus Software
CHAPTER 3	ETHICAL ISSUES IN INFORMATION SECURITY & PRIVACY
	<ul style="list-style-type: none"> • Information Security, Privacy and Ethics • Cyber Crime and Cyber Terrorism • Hacking: Ethical issues

MODULE 4 – APPLICATION CYBER SECURITY

CHAPTER 1	SYSTEM SECURITY
	<ul style="list-style-type: none">• Desktop Security• Programming Bugs and Malicious code• Database Security• Operating System Security: Designing Secure Operating Systems, OS Security• Vulnerabilities.
CHAPTER 2	SECURITY MANAGEMENT
	<ul style="list-style-type: none">• Disaster Recovery• Digital Signature• Ethical Hacking, Penetration Testing• Computer Forensics
CHAPTER 3	CYBER LAWS AND STANDARDS
	<ul style="list-style-type: none">• ISO 27001, Cyber Law (Information Technology Act, 2000)• International Standards maintained for Cyber Security• Security Audit ,Investigation by Investing Agency• Cyber Security Solutions

MODULE 5 – NETWORK CYBER SECURITY

CHAPTER 1	NETWORK SECURITY
	<ul style="list-style-type: none">• Network Security Model, Network Security Threats• Firewalls: Overview, Types, Features, User Management• Intrusion Detection System , Intrusion Prevention System• Public Key Infrastructure, Digital Signature Schemes
CHAPTER 2	INTERNET AND WEB APPLICATION SECURITY
	<ul style="list-style-type: none">• Email security: PGP and SMIME• Web Security: Web authentication, Injection Flaws, SQL Injection• Web Browser Security• E-Commerce Security
CHAPTER 3	WIRELESS NETWORK SECURITY
	<ul style="list-style-type: none">• Wireless Network Components• Security issues in Wireless Networks• Securing a Wireless Network• Mobile Security

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