



DEPARTMENT

OF COMPUTER SCIENCE AND

ENGINEERING

IIB.Tech,II Semester,Academic Year:2025-26

Course Name : CYBER SECURITY - 23CY601 L - T - P: 3-0-0

Course Instructor : Mr. K. SRINIVASA RAO

TimeTable

	1	2	3	12:30PM - 1:20PM	4	5	6
HOUR/DAY	9:30AM - 10:30AM	10:30AM - 11:30AM	11.30PM-12.30PM		1:20PM - 2:10PM	2:10PM - 3:00PM	3:00PM - 3.50PM
Monday	ML	CCI&DF	FIOT		CS	CS	ADA
Tuesday	FIOT	ML	ADA		ML	CS	FIOT
Wednesday	CCI&DF	ML	FIOT		←-----ML LAB-----→		
Thursday	←-----CCI&DF LAB-----→				ML	CCI&DF	ML
Friday	ADA	FIOT	ADA		←-----CS LAB-----→		
Saturday	ADA	CS	CS		CCI&DF	CCI&DF	ACTIVITY HOUR

SYLLABUS

Subject: IIB. Tech Semester II Cyber Security

UNIT-I

Cyber Security Fundamentals: Network and Security Concepts- Information Assurance Fundamentals, Basic Cryptography, Symmetric Encryption, Public Key Encryption, The Domain Name System (DNS), Firewalls, Virtualization, Radio- Frequency Identification

Microsoft Windows Security Principles: Windows Tokens, Window Messaging, Windows Program, The Windows firewalls.

UNIT-II

Attacker Techniques and Motivations: How Hackers Cover Their Tracks (Anti-forensics) How and Why Attackers Use Proxies, Tunneling Techniques, Fraud Techniques, Threat Infrastructure.

UNIT-III

Exploitation: Techniques to Gain a Foothold, Misdirection- Shell code, Integer Over flow Vulnerabilities, Stack-Based Buffer Overflows, Format String Vulnerabilities, SQL Injection, Malicious PDF Files, Race Conditions, Web Exploit Tools, DoS Conditions, Brute Force and Dictionary Attacks, Reconnaissance, and Disruption Methods- Cross-Site Scripting (XSS), Social Engineering, War Xing, DNS Amplification Attacks.

UNIT-IV

Malicious Code: Self-Replicating Malicious Code- Worms, Viruses. Evading Detection and Elevating Privileges- Obfuscation, Virtual Machine Obfuscation, Persistent Software Techniques, Root kits, Spyware, Attacks against Privileged User Accounts and Escalation of Privileges, Token Kidnapping, Virtual Machine Detection. Stealing Information and Exploitation- Form Grabbing, Man-in-the- Middle Attacks, DLL Injection, Browser Helper Objects.

UNIT-V

Pattern Matching and Tries: Pattern matching algorithms – Brute force, the Boyer- Moore algorithm, the Knuth-Morris-Pratt (KMP) algorithm, Standard Tries, Compressed Tries, Suffix tries.

TEXTBOOKS:

1. Fundamentals of Data Structures in C, 2nd Edition, E. Horowitz, S. Sahni and Susan Anderson Freed, Universities Press.
2. Data Structures using C – A. S. Tanenbaum, Y. Langsam, and M.J. Augenstein, PHI/ Pearson Education.

REFERENCEBOOK:

1. Data Structures: A Pseudocode Approach with C, 2nd Edition, R.F. Gilberg and B.A. Forouzan, Cengage Learning.