

# Curriculum Planner

## (Department of Computer Science)

**Course: GENERIC**

**Semester: IV**

**Paper: INFORMATION SECURITY AND CYBER LAWS (Theory)**

**Teacher Name :- Ms.Rajani**

Topic	Chapter No	Schedule(Approximate)
<b>Course Introduction:</b> Computer network as a threat, hardware vulnerability, software vulnerability, importance of data security.	[1] 1.1-1.3 (pgs 1-18) [1] 7.2 (only Categories of Attack, pgs 424-425)	January
<b>Introduction to Cryptography and Applications :</b> Important terms, Threat, Flaw, Vulnerability, Exploit, Attack, Ciphers, Codes, Caesar Cipher, Rail-Fence Cipher, Asymmetric and symmetric key cryptography	[1] 2.1 (Only introduction, Terminology, definitions, exclude algorithm: pgs 36-40) [1] 2.2 (including Advantages and Disadvantages of the Caesar Cipher: pgs 42-43) [1] 2.3 (pgs 53-54) [1] 2.7 (only definitions on pg 92, pg 93- Table only) [1] (pg 121-Sidebar 3.1 only, pg 122)	
<b>Risk Analysis and Threat:</b> Risk analysis, process, key principles of conventional computer security, security policies, authentication, data protection, access control, internal vs external threat, passwords, authentication, and access control, computer forensics and incident response	[1] 8.2 (pg 568-570) [1] 8.3 (pg 591-597) [1] 4.5 (pg 242, 244-245 till two-factor authentication, 252-254 till definition of OTP) [1] Incident Response Plan (pg 565-566 introduction only)	
<b>Information Gathering Techniques:</b> Tools of the attacker, scanning and spoofing, password cracking, malicious software, session hijacking	[1] Sec 3.3 (pg 133-138, including Kinds of malicious code)  [2] Ch 3 (pg 46 Introduction) [2] Ch 6 (pg 127 introduction of password crackers) [2] Ch 7 (pg 138) [2] Ch 8 (pg 158 session hijacking)	

	introduction)	
<b>Safety Tools and Issues :</b> Firewalls, logging and intrusion detection systems, Windows and windows XP / NT security, Unix/Linux security, ethics of hacking and cracking	[1] What is Firewall (pgs 514, 518), What Firewalls Can-and-Cannot-Block, IDS definition (pgs 526-527) [1] Difference between the Law and Ethics (pg 739) [1] Crackers or Malicious Hackers (pg 20), Classification of Hackers (pg 24)  [2] Ch 16 (Vulnerabilities in Windows Pgs 313-315 till File Sharing) [2] Ch 17 (Vulnerabilities Pgs 323-324 till Login Passwords)	March
<b>Digital Crime:</b> Overview of digital crime, criminology of computer crime. Cyber Forensics	[3] Chapter 1 (Sec 1.1, 1.2, 1.4, 1.5, 1.7)	
<b>Cyber laws to be covered as per IT 2008:</b> Definitions, Digital Signature And Electronic Signature  [Section 43] [Section 65] [Section 66 A] [Section 66 B] [Section 66C] [Section 66D] [Section 66E] [Section 66F] [Section 67] [Section 67A] [Section 67B] [Section 72A]	[3] Digital Signature (pg 2.21), Electronic Signature (pg 2.22) [3] (pgs 4.19-4.21), (pgs 4.39-4.49), (pgs 4.54)  [3] Corresponding case laws given in Ch 5 <i>(Case Laws for discussion only, not mandatory for examination)</i>	April

### Reference Books:

[1] Charles P. Pfleeger, Shari Lawrence Pfleeger, Security in Computing, 4<sup>th</sup> Edition, Pearson

[2] A. Basta, N. Basta, and M. Brown, Computer Security and Penetration Testing, 2<sup>nd</sup> Edition,  
Cengage Learning India

[3] Sushila Madan, Cyber Crimes and Laws, Scholar Tech Press (MKM Publishers Pvt. Ltd) Second Revised Edition, 2017

**Suggested Reading:** Sushma Arora, Raman Arora, Cyber Crimes and Laws, Taxmann, January 2017 Edition

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<b>Topic</b>	<b>Schedule(Approximate)</b>
1. Demonstrate the use of Network tools: ping, ipconfig, ifconfig, tracert, arp, netstat, whois 2. Use of Password cracking tools : John the Ripper, Ophcrack. Verify the strength of passwords using these tools.	January 2019
3. Perform encryption and decryption of Caesar cipher. Write a script for performing these operations.	February 2019
4. Perform encryption and decryption of a Rail fence cipher. Write a script for performing these operations.	
5. Use Burp proxy to capture and modify the message. 6. Demonstrate sending of a protected word document.	March 2019
7. Demonstrate sending of a digitally signed document. 8. Demonstrate sending of a protected worksheet.	April 2019