

<b>Name of Faculty</b>	:	Faculty of Computer Science & Applications
<b>Name of Program</b>	:	Bachelor of Computer Application in Cyber Security
<b>Course Code</b>	:	2BCY01
<b>Course Title</b>	:	Introduction to Cyber Security
<b>Type of Course</b>	:	Professional Core
<b>Year of Introduction</b>	:	2023-24

<b>Prerequisite</b>	:	Computer Network
<b>Course Objective</b>	:	Understand the web vulnerability, learn the network defence tools, and Cyber Law and it's application
<b>Course Outcomes</b>	:	At the end of this course, students will be able to:
	CO 1	To Learn about Cybersecurity and its importance
	CO 2	To have knowledge of how to prevent cyber attacks
	CO 3	Understand how to be prevent from Cyber Attacks
	CO 4	To be aware about different cyber Laws - IT Act 2008

### Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
L	T	P		SEE	CIA	SEE	CIA	Total Marks
3	0	2	4	50	25	50	25	

Legends: L-Lecture; T-Tutorial/Teacher Guided Theory Practice; P – Practical, C – Credit, SEE – Semester End Examination, CIA - Continuous Internal Assessment (It consists of Assignments/Seminars /Presentations/MCQ Tests, etc.)

### Course Content

Unit No.	Topics	Teaching Hours	Weightage	Mapping with CO
1	<b>Introduction, Objective:</b> Type of Cyber Security, Denial of Service (DoS), Distributed Denial of Service (DDoS), Man-in-the-Middle (MITM) Attacks, Crypto jacking, SQL Injection, Spamming, Cyberterrorism, Digital Property Misappropriation, Zero-Day Exploitation, Phishing, Digital Vandalism, Cyberstalking, Cyber Frauds and Forgery. Types of Computer Malware, Viruses, Trojan Horse, Rootkit, Spyware, Worms, Adware, Scareware, Browser Hijacker	10	25%	CO 1
2	<b>Introduction, Objective:</b> Type of Cyber Security, Denial of Service (DoS), Distributed Denial of Service (DDoS), Man-in-the-Middle (MITM) Attacks, Crypto jacking, SQL Injection, Spamming,	10	25%	CO 2

	Cyberterrorism, Digital Property Misappropriation, Zero-Day Exploitation, Phishing, Digital Vandalism, Cyberstalking, Cyber Frauds and Forgery. Types of Computer Malware, Viruses, Trojan Horse, Rootkit, Spyware, Worms, Adware, Scareware, Browser Hijacker			
3	<b>Securing System:</b> Firewall Settings, Antivirus Software, Anti-Spyware Software, Anti-Spam Software, Security Updates, Secure Browsing Settings, Scan Devices before Data Transfer, Social Engineering Attack Precaution. Password Management: Introduction, Effective Password Management Tips, Creating and Managing Secure Passwords, Password Manager Tools	10	25%	CO 3
4	<b>Cyber Law of India:</b> Overview of India's Information Technology Amendment Act 2008 (IT Act 2008), hacker vs cracker, liabilities – civil and penal, cyber theft and IPC sec 378, IT Act 2008 – sections 43, 65 and 66, how to file a complaint of suspected hacking	8	25%	CO 4

#### Suggested List of Experiments/Tutorials

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
<b>Weightage</b>	<b>40</b>	<b>30</b>	<b>30</b>	-	-	-

NOTE: This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

#### Suggested List of Experiments/Tutorials

Sr. No.	Name of Experiment/Tutorial	Teaching Hours
1	Which tool is the best for finding cyber attack/vulnerability.	02
2	Evaluate network defence tools for following:	02
3	IP spoofing	02
4	DOS attack	02
5	Explore the Nmap tool and list how it can be used for network defence.	02
6	Explore the NetCat tool.	02
7	Use Wireshark tool and explore the packet format and content at each OSI layer.	02
8	Examine SQL injection attack.	02
9	Perform SQL injection with SQLMap on vulnerable website found using google dorks.	02
10	Examine software keyloggers and hardware keyloggers	02

11	Perform online attacks and offline attacks of password cracking.	02
12	Consider a case study of cybercrime, where the attacker has performed online credit card fraud. Prepare a report and list the laws that will be implemented on attacker.	04

### Major Equipment/ Instruments and Software Required

Sr. No.	Name of Major Equipment/ Instruments and Software
1	Nmap Tool
2	NetCat Tool
3	Kali Linux OS
4	VMWare
5	DVWA Tool
6	PYCHARM

### Suggested Learning Websites

Sr. No.	Name of Website
1	<a href="http://www.wireshark.org">www.wireshark.org</a>
2	<a href="https://hackaday.com/">https://hackaday.com/</a>
3	<a href="https://breakthesecurity.cysecurity.org/">https://breakthesecurity.cysecurity.org/</a>
4	<a href="https://www.eccouncil.org/programs/certified-ethical-hacker-ceh/">https://www.eccouncil.org/programs/certified-ethical-hacker-ceh/</a>
5	<a href="https://www.eccouncil.org/programs/certified-ethical-hacker-ceh/">https://www.eccouncil.org/programs/certified-ethical-hacker-ceh/</a>
6	<a href="https://www.indiacode.nic.in/bitstream/123456789/13116/1/it_act_2000_updated.pdf">https://www.indiacode.nic.in/bitstream/123456789/13116/1/it_act_2000_updated.pdf</a>

### Text books

Sr. No.	Name of Text Books
1	Gunter Ollmann 2007. The Phishing Guide Understanding & Preventing Phishing Attacks. IBM Internet Security Systems.
2	Thomas Erl, Ricardo Puttini, Zaigham Mahmood, Cloud Computing: Concepts, Technology & Architecture, Prentice Hall, 2013.
3	Rajkumar Buyya, Christian Vecchiola, S. Thamarai Selvi, Mastering Cloud Computing, Tata McGraw-Hill Education, 2013.
4	M. N. Omar et al, "Hybrid Stepping Stone Detection Method," in the proceeding of 1st IEEE Conference on Distributed Framework and Applications (DFmA - 2008), pp. 134-138, 2008

### Reference books

Sr. No.	Name of Reference Books
1	Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives by Nina Godbole and Sunit Belpure, Publication Wiley
2	Cyber Security and Cyber Laws Paperback - 2018 by Alfred Basta, Nadine Basta, Mary Brown, Ravinder Kumar, publication Cengage
3	Anti-Hacker Tool Kit (Indian Edition) by Mike Shema, Publication Mc Graw Hill.



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