

Branch Name:	Artificial Intelligence & Data Science
Program Code:	108
Subject Title:	Cyber Security
Subject Code:	1ET1080607
Pre-requisite:	Basic fundamental knowledge of computers, Internet and network

Course Objective:

1. The main objective of this course is to make the students aware regarding problem formulation and transforming human readable steps into suitable in cyber world.
2. The course also intends to prepare the students aware about the uses of internet as well as activity going in the daily crime in internet
3. Other track of the course focuses on the challenges to Indian laws and cybercrime scenario in India and punishment toward the referred crimes.

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture (L)	Tutorial (T)	Practical (P)	Credit	Theory (Marks)		Practical (Marks)		Total (Marks)
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
03	-	02	04	70	30	30	20	150

Subject Contents

Sr. No	Topic	Total Hours	Weightage (%)
1	Fundamental of Cyber Crime and Cyber Security: cybercrime, Types of Cybercrime, Introduction of Cyber Security, Cyber Security Goals	4	15
2	Mobile and Wireless Devices in Cyber Crime: Introduction, proliferation of mobile and Wireless device, trends immobility, Attacks on wireless networks, Attack on mobile/cell phone, mobile device: security implication for organization.	5	15
3	Web Application Tools: Scanning for web vulnerabilities tools: Nikto, W3af, HTTP utilities - Curl, OpenSSL and Stunnel, Application Inspection tools – Zed Attack Proxy, Sqlmap. DVWA, Webgoat, Password Cracking and Brute-Force Tools – John the Ripper, L0htcrack, Pwdump, HTC-Hydra	12	20
4	Cyber Crime Tools and Techniques: introduction, proxy server and anonymizers, phishing, password cracking, keylogger and spywares, virus and worms, Trojan horses and backdoor, steganography, DoS and DDoS Attacks, SQL injection, Buffer overflow.	12	30
5	Legal Perspective of Cyber Security: Introduction, cyber-crime and the legal landscape around the world, the Indian IT act, challenges to Indian laws and cyber-crime scenario in India, digital signature and the Indian IT act, amendments to Indian IT Act., cyber-crime and punishment.	8	20

List of Text Books:

1. Cyber security: Understanding Cyber-crime Computer Forensics and Legal Perspectives By Nina Godbole & Sunit Belapure, WILEY
2. Cyber laws by C.K.Punia
3. Data and computer communication, William Stallings, Pearson

List of Reference Books:

1. Cyber laws and IT protection by Harish Chander.
2. Cyber Forensics Concepts and Approaches, B. Ravi Kumar Jain/ICFAI, University Press
3. Introduction to data communication and networking, Behrouz Forouzan, TMH

E-Resources (If any):

1. nptel.ac.in
2. <http://cyberlawsindia.net/>
3. <http://meity.gov.in/content/cyber-laws>
4. <https://www.javatpoint.com/cyber-security-tutorial>

List of Suggested titles of Experiments (If Any):

1. Study about different network topology.
2. Study about different networking commands.
3. Study about firewall of different operating system.
4. Study about different cyber threats in Internet.
5. Study of tools used to detect the cyber threats in computers.
6. Using Wireshark, create a Filter to capture only FTP traffic.
7. Using wireshark, identify the version of SSL protocol used (SSLv1, SSLv2, SSLv3, TLSv1, TLSv2, etc) in any HTTPS web portal of your choice. You may need to login to get this information.
8. Carry out a port scanning on an internal lab machine using nmap.
9. Demonstration of sql injection.
10. A recent case study on cyber-crime.

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understand the basic concepts of cyber crime and cyber security	1 Remembering 2 Understanding
CLO2	Realize the activities carried using forensic technologies in detection of cyber crime	2 Understanding
CLO3	Understand the core concepts of defensive and offensive security.	3 Applying
CLO4	Get knowledge and awareness of the Cyber Crime Cases and IT act of India and amendments	3 Applying
CLO5	Relate the laws enforced by the judiciary to handle cybercrimes and cyber frauds	2 Understanding 4 Analyze

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes(PSOs)			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CLO1	H	L	M	L	L	M			L				M	L		
CLO2		L	M	H	L	L					L	L	M	L		
CLO3	L	L	L	L	M	H		M		L			L	L		
CLO4	M	M	M	L	M	M		M	L				M	L		
CLO5	M	L	L	L	L	M		M		L			H	L		

H: High, M: Medium, L: Low