Course Code	Course Title	L	T	P	C
PMCA605L	Cyber Security	3	0	0	3
Pre-requisite	NIL	Syllabus version			
		1.0			

Course Objectives:

1. To understand key terms and concepts in cyber-attacks, security issues, associated vulnerabilities.
2. To exhibit knowledge to secure systems, protect personal data, Phishing and Identity Theft using software or tools.
3. To emphasis principles of governance, regulatory, legal, economic, environmental, social and ethical contexts of cyber security.

Course Outcomes:

1. Develop a deeper understanding and familiarity with various types of cyberattacks, cybercrimes, vulnerabilities and need of cyber security
2. Apply critical thinking and problem-solving skills to detect the vulnerabilities and safety against cyber-frauds
3. Demonstrate the use of standards and cyber laws to enhance information security in the development process and infrastructure protection
4. Design operational cyber security strategies and policies

Module:1	Introduction to Cyber and Cyber Offenses	6 hours

Definition and Scope - Risks - Threats - Classifications of Cybercrimes - Data Diddling, Web Jacking, Hacking, Software Piracy, Computer Network Intrusions, Password Sniffing -Cyber Offenses - Categories of Cybercrime - Social Engineering, Cyber Stalking, Cyber Cafe and Cybercrimes - Bot Nets - Attack Vector

Module:2	Cybercrime - Mobile and Wireless Devices	6 hours

Trends in Mobility - Credit Card Frauds in Mobile and Wireless Computing Era - Security Challenges Posed by Mobile Devices - Authentication Service Security - Attacks on Mobile Phone - Organizational Measures and Security Policies - Identity and Access Management - Architecture - IAM Standards

Module:3	Tools and Methods in Cybercrime	7 hours

Introduction - Password Cracking - Keyloggers and Spywares - Viruses and Worms - Trojan Horses and Backdoors - Steganography - DoS and DDoS Attacks - SQL Injection - Buffer Overflow - Attacks on Wireless Networks

Module:4	Phishing and Identity Theft	6 hours

Phishing - Methods and Techniques - Spear Phishing - Types of Phishing - Phishing Toolkit - Spy Phishing - Phishing Countermeasures - Identity Theft - Personal Identifiable Information - Types and Techniques - Countermeasures - Case Study - Identify Theft

Module:5	Cybercrimes and Cyber Security - The Legal Perspectives	6 hours

The Legal Perspectives - Need of Cyber law - The Indian Context - The Indian IT Act - Challenges and Consequences - Digital Signature and the Indian IT Act - Amendments to the Indian IT Act - Cybercrime and Punishment – Cyber law - Technology and Students - Indian Scenario - CIA Triad

Module:6	Cyber Security - Organizational Implications	6 hours

Introduction - Cost of Cybercrimes and IPR Issues - Web Threats - Security and Privacy Implications - Social Media Marketing - Social Computing and the

Challenges - Protecting People's Privacy - Organizational Guidelines - Incident Handling - Media and Asset Protection - Importance of End Point Security - Case Study - An Indian Case of IPR crime.		
Module:7	**Cybercrime and Cyber Terrorism - Social, Political, Ethical and Psychological Dimensions**	**6 hours**
Introduction - Ethical Dimensions - Network Hacking - Email Spoofing - Server Hacking - Information Warfare - Spyware- Threat Mitigation - Disaster Recovery - Case Study- Swedish Case of Hacking and Theft of Trade Secrets		
Module:8	**Contemporary Issues**	**2 hours**
Guest Lecture from Industry and R & D Organizations		
	Total Lecture hours:	**45 hours**

Text Book(s)	
1.	Nina Godbole, Sunit Belapure, "Cyber Security - Understanding Cybercrimes, Computer Forensics and Legal Perspectives", 2018, 1st Edition, Wiley.
Reference Books	
1.	Charles J .Brooks, Christopher Grow, Philip A. Craig, Donald Short, "Cybersecurity Essentials", 2018, 1st Edition, Wiley Publisher.
2.	Yuri Diogenes, Erdal Ozkaya, "Cybersecurity - Attack and Defense Strategies", 2018, 2nd Edition, Packt Publishers.

Mode of Evaluation: CAT, Written Assignment, Quiz, FAT and Seminar			
Recommended by Board of Studies	04-05-2023		
Approved by Academic Council	No. 70	Date	24-06-2023