Walchand College of Engineering, Sangli
(Government Aided Autonomous Institute)

AY 2023-24

Course Information	
Programme	B.Tech. (Computer Science and Engineering)
Class, Semester	Final Year B. Tech., Sem VII
Course Code	5OE471
Course Name	Open Elective 5: Cyber Security
Desired Requisites:	Basic knowledge of internet

Teaching Scheme		Examination Scheme (Marks)			
Lecture	3 Hrs/week	**ISE**	**MSE**	**ESE**	**Total**
Tutorial	-	20	30	50	100
Practical	-				
Interaction	-	Credits: 3			

Course Objectives	
1	Exhibit knowledge to secure corrupted systems, protect personal data, and secure computer networks in an Organization
2	Develop cyber security strategies and policies
3	Understand principles of web security and to guarantee a secure network by monitoring and analyzing the nature of attacks through cyber/computer forensics software/tools.

Course Outcomes (CO) with Bloom's Taxonomy Level		
CO1	Understand the concepts of cyber security and data privacy in today's environment.	Understanding
CO2	Perform fundamental incident response functions including detecting, responding, and recovering from security incidents.	Applying
CO3	Analyze and resolve security issues in networks and computer systems to secure an IT infrastructure	Analyzing
CO4	Evaluate and communicate the human role in security systems with an emphasis on ethics, social engineering vulnerabilities and training.	Evaluating
CO5	Design appropriate security technologies and policies to protect computers and digital information.	Creating

Module	Module Contents	Hours
I	**Introduction to Cyber Space** Internet Architecture and the Protocol Layers- Basics of Internet, Layered architecture, OSI Reference Model, Protocol Data Unit(PDU), TCP/IP Model, IP addressing, Layers of security, Cyber Crime, Information Security, CIA Triad, Computer Ethics & Security Policies.	7
II	**Web Browsers and Email Security** Basics of Cryptography, Guidelines to choose Web Browsers, Security measures for using Web Browsers, Antivirus, Email Security, IDS, Firewall.	7
III	**Social Media and basic Windows Security** Guidelines for Social Media Security, Tips & best practices for Safer Social Media Networking, Best Security Practices for Windows Desktops & Laptops, Guidelines for generation of User Accounts & Passwords, Wi-Fi Security.	6
IV	**Smartphone Security** Introduction to Mobile Devices, Security Techniques for using Mobile Devices, Best Security Practices for Android Devices, Best Security Practices for IOS Devices	6

		Online Banking, Credit Card & UPI Security, POS & ATM Security	
V		Online Banking Security Techniques, Mobile Banking Security Techniques, Security for Debit & Credit Cards, UPI & e-Wallet Security Guidelines, Security for using Micro-ATMs & POS (Point of Sales).	7
VI		Cyber Security Initiatives in India Counter Cyber Security Initiatives in India, Cyber Security Incident Handling, **Information Destroying and Recovery Tools-** Recovering from Information Loss, Destroying Sensitive Information, CCleaner for Windows, How Cyber Criminal Works & Cyber Laws, IT ACT & how to prevent yourself from being a victim of Cyber Crime, Cybercrime: Examples and Mini-Cases.	7

Text Books	
1	Nina Godbole and Sunit Belpure, "Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives", Wiley
2	B. B. Gupta, D. P. Agrawal, Haoxiang Wang, "Computer and Cyber Security: Principles, Algorithm, Applications, and Perspectives", CRC Press, ISBN 9780815371335, 2018

References	
1	"Cyber Security Essentials", James Graham, Richard Howard and Ryan Otson, CRC Press
2	
3	

Useful Links	
1	https://onlinecourses.swayam2.ac.in/ugc19_hs25/preview m2.ac.in
2	https://www.classcentral.com/course/swayam-introduction-to-cyber-security-14116
3	https://www.youtube.com/watch?v=AU3sdN-ZPCQ

CO-PO Mapping															
	Programme Outcomes (PO)													PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	
CO1	3	3											2		
CO2		3			2								3		
CO3	3	3											3	3	
CO4		2	3										3	1	
CO5				3									2		

The strength of mapping is to be written as 1,2,3; Where, 1:Low, 2:Medium, 3:High

Each CO of the course must map to at least one PO.

Assessment	

Two components of In Semester Evaluation (ISE), One Mid Semester Examination (MSE) and one End Semester Examination (ESE) having 20%, 30% and 50% weights respectively.

Assessment	Marks
ISE1	10
MSE	30
ISE2	10
ESE	50

ISE 1 and ISE 2 are based on assignment/declared test/quiz/seminar etc.

MSE: Assessment is based on 50% of course content (Normally first three modules)

ESE: Assessment is based on 100% course content with 70-80% weightage for course content (normally last three modules) covered after MSE.