Subject Code	Subject Name (Theory Course)	Category	L	T	P	C
OIT1902	CYBER SECURITY	OE	3	0	0	3

Objectives: Broad objective of this course is to
★ Learn the basics of Security Trends.
★ Know the operational and organizational security.
★ Study the fundamentals of cryptography.
★ Explore Authentication methods and Tools.
★ Identify the purpose of Intrusion Detection Systems.

UNIT-I	**INTRODUCTION TO SECURITY TRENDS AND CONCEPTS**	**9**
The Computer Security Problems - Targets and Attacks - Approaches to Computer Security – Ethics - Basic Security Terminologies – Security Models.		
UNIT-II	**OPERATIONAL AND ORGANIZATIONAL SECURITY**	**9**
Policies, Procedures, Standards and Guidelines – Security Awareness and Training – Interoperability Agreements – The security Perimeter – Physical Security – Environmental Issues – Wireless – Electromagnetic Eavesdropping – The Role of Security in People.		
UNIT-III	**CRYPTOGRAPHY**	**9**
Cryptography in Practice – Historical Perspectives – Algorithms – Hashing Functions – Symmetric Encryption – Asymmetric Encryption – Quantum Cryptography – Steganography – Cryptography Algorithm Use.		
UNIT-IV	**AUTHENTICATION AND REMOTE ACCESS**	**9**
User, Group and Role Management – Password Policies – Single Sign-On – Security Controls and Permissions – Preventing Data Loss or Theft – The Remote Access Process – Remote Access Methods.		
UNIT-V	**INTRUSION DETECTION SYSTEMS AND NETWORK SECURITY**	**9**
History of Intrusion Detection Systems – IDS Overview – Network-Based IDSs – Host-Based IDSs – Intrusion Prevention Systems – Honeypots and Honeynets – Tools.		
	Contact Hours : 45 Periods	

Course Outcomes: On completion of the course, the students will be able to	
CO1	Learn the basics of Security Trends.
CO2	Know the operational and organizational security.
CO3	Explain the fundamentals of cryptography.
CO4	Apply Authentication methods and Tools.
CO5	Demonstrate the Intrusion Detection Systems.

Reference Books:	
1	W.A.Coklin, G.White, Principles of Computer Security: Fourth Edition, McGrawHill, 2016.
2	William Stallings, Cryptography and Network Security Principles and Practices, Seventh Edition,Pearson.
3	Achyut S. Godbole, Web Technologies: TCP/IP, Web/Java Programming, and Cloud Computing, Tata McGraw-Hill Education, 2013.

CO/PO	PO1	PO2	PO3	PO 4	PO5	PO6	PO7	PO 8	PO9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3	PSO 4
CO1	1	-	2	-	-	-	-	1	-	-	-	-	1	-	-	-
CO2	2	-	-	2	-	-	-	-	-	-	-	-	1	3	-	-
CO3	2	-	-	3	-	-	-	-	-	-	-	-	2	-	-	2
CO4	-	-	-	-	2	1	-	-	-	-	-	-	-	2	2	-
CO5	-	2	-	-	-	-	-	-	-	-	-	-	1	-	2	3
CO (Avg)	1.67	2.00	2.00	2.50	2.00	1.00	-	1.00	-	-	-	-	1.25	2.50	2.00	2.50

Correlation levels 1, 2 or 3 are as defined below:
1: Slight (Low) 2: Moderate (Medium) 3: Substantial(High)
No correlation : "-"