SRI VENKATESWARA UNIVERSITY COLLEGE OF ENGINEERING
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
SCHEME OF INSTRUCTION – CHOICE BASED CREDIT SYSTEM
B.Tech Electronics and Communication Engineering
Effective from 2018-19, Modified in 2020-21

SEVENTH SEMESTER

Cyber Security

Program Elective

UNIT-I

Introduction: OSI Security Architecture - Classical Encryption techniques – Cipher Principles – Data Encryption Standard – Block Cipher Design Principles and Modes of Operation - Evaluation criteria for AES – AES Cipher – Triple DES – Placement of Encryption Function – Traffic Confidentiality

UNIT-II

Public Key Cryptography Key Management - Diffie-Hellman key Exchange – Elliptic Curve Architecture and Cryptography - Introduction to Number Theory – Confidentiality using Symmetric Encryption – Public Key Cryptography and RSA.

UNIT-III

Authentication And Hash Function: Authentication requirements – Authentication functions – Message Authentication Codes – Hash Functions – Security of Hash Functions and MACs – MD5 message Digest algorithm - Secure Hash Algorithm – RIPEMD – HMAC Digital Signatures – Authentication Protocols – Digital Signature Standard.

UNIT-IV

Network Security Authentication Applications: Kerberos – X.509 Authentication Service – Electronic Mail Security – PGP – S/MIME - IP Security – Web Security.

UNIT-V

System Level Security Intrusion detection – password management – Viruses and related Threats – Virus Counter measures – Firewall Design Principles – Trusted Systems.

Course Outcomes

1.Understand different encryption techniques

2. Implement basic security algorithms required by any computing system

3. Analyze the vulnerabilities in any computing system to design a security solution

4. Analyze the possible security attacks and their effective countermeasures in real time systems

Text Book:

1. William Stallings, “Cryptography And Network Security – Principles and Practices”, Prentice Hall of India, Third Edition, 2003.

References:

1. Atul Kahate, “Cryptography and Network Security”, Tata McGraw-Hill, 2003.
2. Bruce Schneier, “Applied Cryptography”, John Wiley & Sons Inc, 2001.
3. Charles B. Pfleeger, Shari Lawrence Pfleeger, “Security in Computing”, ThirdEdition, Pearson Education.

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Course Code	Course Title	Scheme of instruction hr/ Week				Credits	Scheme of Evaluation		Total
							Internal	Sem End External	
		L	Tut	P/D	T		Marks	Marks	
ECPET 801	Program Elective-VI	4	0	0	4	**4**	40	60	100
ECPET 802	Program Elective-VII	4	0	0	4	**4**	40	60	100
ECPCX 803	Project Work Phase - II	0	0	18	18	**9**	40	60	100
ECOET 804	Open Elective-III (Online)					**3**			100
ECOET 805	Open Elective-IV (Online)					**3**			100
-	Open Elective-III & IV MOOCs(Online)	Period of study during 3rd /4th /5th /6th /7th Sem. Performance will be reflected in Eighth sem.							
	Total	06	0	18	24	**23**	120	180	500

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EIGHTH Semester