

	Value added course Cyber Security	L	T	P	C
Version 2.0	Contact Hours – 30	2	0	0	2
Pre-requisites/Exposure	Basic Computer network and cryptography				
Co-requisites	--				

Course Objectives

1. To understand basics of Computer network and Cryptography.
2. To be able to secure a message over insecure channel by various means.
3. To learn about how to maintain the Confidentiality, Integrity and Availability of a data
4. To understand various protocols for network security to protect against the threats in the networks.
5. Basics of Cloud computing.

Course Outcomes

On completion of this course, the students will be able to:

- CO1. Understand the broad set of technical, social & political aspects of Computer Security
- CO2. Describe the operational and organizational security Aspects
- CO3. Have understood the fundamentals of cryptography
- CO4. Explain Authentication Methods
- CO5. Understand the purpose of Intrusion detection system

Catalog Description

This Course is for those candidates who wish to become Engineering graduates in the field of Cyber Security. These courses are advanced courses on Cyber Security. You will get to know about the basics of Computer Science and Networking. Candidates will also become familiar with the different ways by means of which you will be able to develop security tools to prevent virus and malware attacks.

Course Content

Unit 1. Basics of Computer network hours

6

An Introduction to Networking, Networking Standards and the OSI Model, Transmission Basics and Networking Media, Introduction to TCP/IP Protocols.

Unit 2. Basics of Cryptography

6 hours

Public key, Private key, trusted third party, certificate authority, one way hash function, message digest.

Unit 3: Authentication and Remote Access

6 hours

User, Group, and Role Management - Password Policies - Single Sign-On - Security Controls and Permissions - Preventing Data Loss or Theft

Unit 4. Intrusion Detection Systems**6 hours**

IDS Overview - Network-Based IDSs - Host-Based IDSs

Unit 5. Introduction to Cloud computing

Basic idea of cloud computing, Types of cloud computing

Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination

Components	Mid Term	Class Assessment	End Term
Weightage (%)	20	30	50

Relationship between the Program Outcomes (POs), Program Specific Outcomes (PSOs) and Course Outcomes (COs)

Mapping between COs and POs		
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	Understand the broad set of technical, social & political aspects of Computer Security	PO1, PO11
CO2	Describe the operational and organizational security Aspects	PO1, PO11
CO3	Have understood the fundamentals of cryptography	PO6, PO1, PO11
CO4	Explain Authentication Methods	PO6, PO1, PO11
CO5	Understand the purpose of Intrusion detection system	PO1,PO6, PO11

		Eng inee ring Kno wle dge	Pro ble m anal ysis	Des ign/ dev elop men t of solu tion s	Con duct inve stiga tions of com plex pro ble ms	Mo der n tool usa ge	The engi neer and soci ety	Env iron men t and sust aina bilit y	Ethi cs	Indi vid ual and tea m wor k	Com muni catio n	Proje ct mana geme nt and finan ce	Life- long Lear ning	An abilit y to apply analy tical know ledge , and mode rn hard ware and softw are tools to desig n and imple ment comp lex syste ms in the areas relate d to El ectro nics and Com muni catio n syste ms	An abilit y to devel op their probl em-s olvin g skills and asses s socia l, envir onme ntal issue s with ethic s and mana ge differ ent proje cts in multi disci plina ry areas .
Course Code	Course Title	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO11	PO1 2	PSO 1	PSO 2

	Cyber Security	3					3					3			
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1=Weakly mapped
2= Moderately mapped
3=Strongly mapped