



M. C. E. Society's
Abeda Inamdar Senior College
Of Arts, Science and Commerce, Camp, Pune-1
(Autonomous) Affiliated to Savitribai Phule Pune
University NAAC accredited 'A' Grade

For All faculties
3 Credit Compulsory Non-CGPA Course for all the PG First Year students in All
Faculties

CYBER SECURITY

Syllabus
(Semester & Choice Based Credit System -Autonomy 21 Pattern)

(To be implemented from the Academic Year, 2021-2022)



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Course/ Paper Title	Introduction to Cyber Security
Course Code	21PGCYS12M
Semester	II
No. of Credits	3

Aims & Objectives of the Course

Sr. No.	Objectives
1.	Understand basic concept of cyber security.
2.	To prepare students for analysing and resolving security issues in network and computer systems.
3.	Understand human role in security systems with an emphasis on ethics.
4.	To prepare student for identifying security incidents.

Expected Course Specific Learning Outcome

Sr. No.	Learning Outcome
1.	Student will able to analyse and resolve security issues in networks and computer systems to secure an IT infrastructure.
2.	Student will understand the human role in security systems with an emphasis on ethics, social engineering vulnerabilities and training.
3.	Student will able to identify security incidents.

Syllabus

Unit No	Title with Contents	No. of Lectures
Unit I	Overview of Networking Concepts	3
	<ol style="list-style-type: none">1. Basics of Communication Systems2. Transmission Media3. Topology and Types of Networks4. TCP/IP Protocol Stacks5. Wireless Networks6. The Internet	
Unit II	Overview of Information Security Concepts	4
	<ol style="list-style-type: none">1. Basic concepts: Attack, Types of Attacks2. Goals for Security3. E-commerce Security4. Steganography	
Unit III	Security Threats and Vulnerabilities	5
	<ol style="list-style-type: none">1. Overview of Security threats2. Weak / Strong Passwords and Password Cracking3. Malicious Code4. Programming Bug5. Cyber-crime and Cyber terrorism	
Unit IV	Cryptography / Encryption	5
	<ol style="list-style-type: none">1. Introduction to Cryptography / Encryption2. Digital Signatures3. Public Key infrastructure4. Applications of Cryptography5. Tools and techniques of Cryptography.	

Unit V	Access Control, Intrusion Detection and Firewalls	4
	<ul style="list-style-type: none"> 1. Overview of Identification and Authorization 2. Overview of IDS 3. Intrusion Detection Systems and Intrusion Prevention Systems 4. Overview of Firewalls: Types of Firewalls, Features of Firewalls. 	
Unit VI	System Security	4
	<ul style="list-style-type: none"> 1. Desktop Security 2. email security: PGP and SMIME 3. Web Security: web authentication, SSL and SET 4. Database Security 5. Virtual Private Network. 6. OS Security Vulnerabilities 7. Anti-virus software 8. Wireless Network security 	

References :

1. "Data Communication and Networking" , Behrouz A Forouzan, Tata McGraw- Hil
2. Cryptography and Network Security, Atul Kahate, Tata McGraw- Hil
3. Network and System Security, 2nd Edition, John R. Vacca, O'Reilly