

Module 1: Cyber Security – Introduction

1. Meaning of Cyber Security

Cyber Security refers to the practice of protecting computers, servers, networks, mobile devices, and data from unauthorized access, attacks, damage, or theft. It ensures the confidentiality, integrity, and availability of information.

2. Main Objectives of Cyber Security

The main objectives of cyber security are:

- Confidentiality – Protecting data from unauthorized access.
- Integrity – Ensuring data is accurate and not altered illegally.
- Availability – Making sure systems and data are accessible when needed.

3. Offensive and Defensive Cyber Security

Offensive Cyber Security involves identifying vulnerabilities by simulating attacks (ethical hacking, penetration testing).

Defensive Cyber Security focuses on protecting systems using firewalls, antivirus, intrusion detection systems, and security policies.

4. Cyberspace and Cyber Law

Cyberspace is the digital environment where online communication, data exchange, and internet activities take place.

Cyber Law refers to legal regulations that govern online activities, cyber crimes, data protection, and digital transactions.

5. Cyber Welfare

Cyber Welfare means ensuring safe, responsible, and ethical use of cyberspace. It includes protecting users from cyber crimes, online abuse, and promoting digital awareness.

6. Types of Hackers

- White Hat Hackers – Ethical hackers who improve security.
- Black Hat Hackers – Malicious hackers who exploit systems.
- Grey Hat Hackers – Hackers who operate between ethical and illegal boundaries.
- Script Kiddies – Beginners using ready-made tools.
- Hacktivists – Hackers driven by social or political motives.

7. Full Form of SOC

SOC stands for Security Operations Center. It is a centralized unit that monitors, detects, analyzes, and responds to cyber security incidents.

8. Challenges of Cyber Security

- Rapidly evolving cyber threats
- Lack of skilled cyber security professionals
- Data breaches and privacy issues
- Cloud and IoT security risks
- Insider threats
- Compliance with cyber laws and regulations