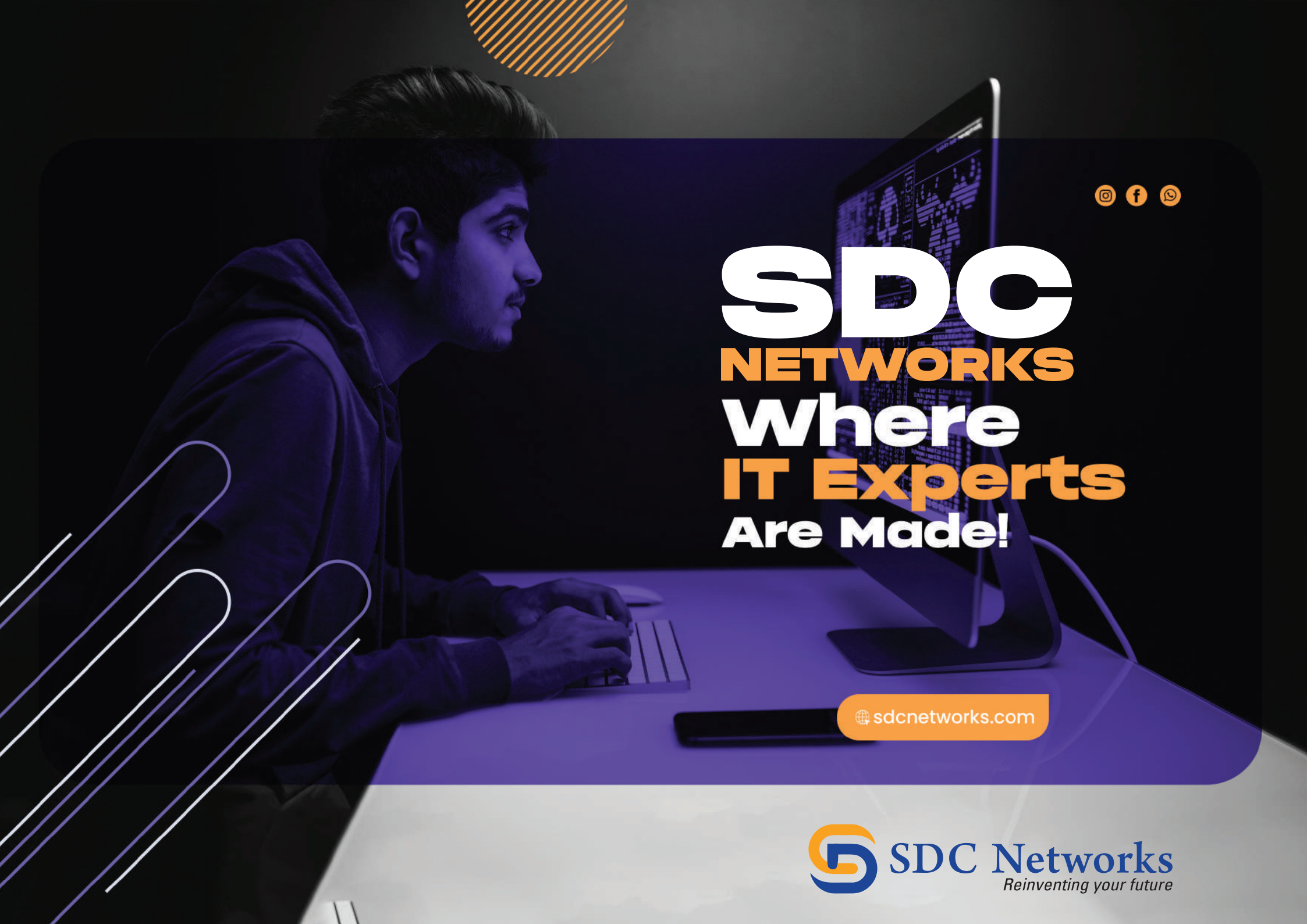
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# The Art of Cyber Security

In today's interconnected world, cyber threats are becoming increasingly sophisticated, making it essential for organizations to protect themselves against these threats.Our Cyber Security course is designed to equip you with the knowledge and skills needed to defend networks, systems, and data against cyber-attacks.

CYBER SECURITY

Ethical Hacking

Forensics

SOC

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# Foundation of Cyber Security

## Understanding

- What is Cybersecurity?
- Importance of Ethical Hacking in Today's Digital World
- Cybersecurity Threat Landscape
- Key Terminologies: Vulnerabilities, Threats, Risks, and Exploits

## Introduction to Cyber Threats

- Common Cyber Threats and Attacks
  - Malware: Viruses, Worms, Trojans, Ransomware
  - Phishing and Social Engineering
  - Denial of Service (Dos) Attacks
  - Insider Threats
- Basics of Incident Response

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# Understanding Ethical Hacking

- Difference Between Ethical Hacking and Malicious Hacking
- Roles and Responsibilities of an Ethical Hacker
- Hacking Methodology:
  - Reconnaissance
  - Scanning and Enumeration
  - Gaining Access
    Maintaining Access
    Covering Tracks

# Basics of Cryptography

- Understanding Encryption and Decryption
- Symmetric vs. Asymmetric Encryption
- Common Cryptographic Algorithms (e.g., AES, RSA, SHA)
- Hashing and Digital Signatures

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## Introduction to Cybersecurity Tools

- Overview of Common Tools Used in Ethical Hacking:
  - Nmap (Network Scanning)
  - Wireshark (Packet Analysis)
  - Metasploit (Penetration Testing)
  - Burp Suite (Web Application Security)
- Installing and Setting Up Kali Linux

## Familiarity with Virtualization and Labs

- Introduction to Virtual Machines (VMs)
  - Setting Up Virtual Environments with
  - VMware or VirtualBox
  - Importance of Isolated Testing Environments
- Basics of Cloud Computing and Cloud Security

## Legal and Ethical Considerations

- Overview of Cybersecurity Laws and Regulations
- Importance of Obtaining Proper Permissions
- Understanding the Ethical Boundaries of Hacking

## Problem-Solving and Logical Thinking

- Basic Troubleshooting Skills
- Critical Thinking and Analytical Abilities
- Patience and Attention to Detail

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# ETHICAL HACKING WITH CYBER FORENSIC & SOC

## Module 01

### Introduction to Ethical Hacking

- Principles of Ethical Hacking
- Types of Hackers (White Hat, Black Hat, Gray Hat)
- Information Security Controls (Preventive, Detective, Corrective)
- Legal & Regulatory Compliance

## Module 02

### Footprinting and Reconnaissance

- Passive vs Active Reconnaissance
- WHOIS, DNS Interrogation
- Google Hacking/Dorking
- Social Media and Email Harvesting

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## Module 03

### Scanning Networks

- Port Scanning (TCP, UDP)
- Network Scanning with tools (Nmap, Netcat)
- IP Sweeping and Host Discovery
- Vulnerability Scanners (e.g., Nessus basics)

## Module 04

### Enumeration

- NetBIOS, SNMP, LDAP Enumeration
- Windows/Linux Enumeration Commands
- Banner Grabbing

## Module 05

### Vulnerability Analysis

- CVE, CVSS Scoring
- Vulnerability Databases (NVD, Exploit-DB)
- Patch Management Concepts
- Vulnerability Assessment Tools

## Module 06

### System Hacking

- Password Cracking Techniques (Brute-force, Dictionary, Rainbow Tables)
- Privilege Escalation (Windows/Linux)
- Rootkits and Keyloggers

## Module 07

### Malware Threats

- Types of Malware: Virus, Worm, Trojan, Ransomware
- Malware Analysis Basics (Static/Dynamic)
- Persistence Mechanisms

## Module 08

### Sniffing

- Packet Capturing with Wireshark
- MITM (Man-in-the-Middle) Attacks
- ARP Poisoning / DNS Spoofing

## Module 09

### Social Engineering

- Phishing, Vishing, and Smishing
- Pretexting and Baiting
- Psychological Principles (Urgency, Authority)

## Module 10

### Denial-of-Service

- DoS vs DDoS
- Botnets & Amplification Attacks
- Detection & Mitigation Tools

## Module 11

### Session Hijacking

- TCP/IP Hijacking
- Cookie Hijacking
- Tools: Ettercap, Firesheep

## Module 12

### Evading IDS, Firewalls, & Honeypots

- Packet Fragmentation & Obfuscation
- Polymorphic Malware
- IDS/IPS Bypass Techniques

## Module 13

### Hacking Web Servers

- Web Server Vulnerabilities
- Exploiting Web Server Software

## Module 14

### Hacking Web Applications

- OWASP Top 10 Overview
- XSS, CSRF, Command Injection
- Input Validation and Output Encoding

## Module 15

### SQL Injection

- Union-Based and Error-Based SQLi
- Blind SQLi Techniques
- SQLMap Tool Usage

## Module 16

### Hacking Wireless Networks

- Wi-Fi Authentication (WEP/WPA/WPA2/WPA3)
- Packet Injection with Aircrack-ng
- Evil Twin & Rogue AP Attacks

## Module 17

### Hacking Mobile Platforms

- Android/iOS Security Basics
- APK Reverse Engineering
- Mobile App Pentesting Frameworks

## Module 18

### IoT Hacking

- Common IoT Vulnerabilities
  (Weak Auth, Insecure Interfaces)
- Firmware Extraction Basics
- Device Fingerprinting

## Module 19

### Cloud Computing

- Shared Responsibility Model
- Cloud Threats (e.g., Insecure APIs, Data Breaches)

## Module 20

### Cryptography

- Symmetric vs Asymmetric Encryption
- Hashing & Digital Signatures
- PKI & SSL/TLS Concepts

## Module 21

### Digital Forensics Fundamentals

- Chain of Custody
- File System Forensics (FAT, NTFS)
- Volatile Memory Analysis Basics

## Module 22

### Penetration Testing

- Pen Testing Methodologies
- Exploitation Frameworks (Metasploit)
- Privilege Escalation & Lateral Movement

## Module 23

### SOC (Security Operations Center)

- Security Event Monitoring (SIEM Tools like Splunk)
- MITRE ATT&CK Framework

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