Cyber Security Internship Curriculum (6 Months + Major Project)

Month 1: Cyber Security Fundamentals

Week 1–2: Basics of Cyber Security

- Introduction to Cyber Security

- CIA Triad (Confidentiality, Integrity, Availability)

- Types of Cyber Attacks

- Threats, Vulnerabilities & Risks

- Cyber Laws & Ethics

Week 3–4: Networking Fundamentals

- Computer Networks Basics

- OSI & TCP/IP Models

- IP Addressing & Subnetting

- Ports & Protocols (HTTP, HTTPS, FTP, DNS, SMTP)

- Network Devices (Router, Switch, Firewall)

Mini Task: Network & Attack Case Study

Month 2: Linux, Windows & Security Basics

Week 5–6: Linux for Cyber Security

- Linux Introduction

- File System & Permissions

- Important Linux Commands

- User & Process Management

- Shell Scripting Basics

Week 7–8: Windows & Security

- Windows Architecture

- User Accounts & Policies

- File & Registry Security

- Malware Types

- Antivirus & Endpoint Security

Mini Project: Linux Security Hardening

Month 3: Ethical Hacking & Reconnaissance

Week 9–10: Footprinting & Reconnaissance

- Information Gathering

- Google Dorking

- WHOIS & DNS Enumeration

- Scanning Techniques

Week 11–12: Scanning & Enumeration Tools

- Nmap

- Netcat

- Nessus (Basics)

- Vulnerability Scanning

Mini Project: Vulnerability Assessment Report

Month 4: Web & Network Security

Week 13–14: Web Application Security

- Web Application Architecture

- OWASP Top 10

- SQL Injection

- Cross-Site Scripting (XSS)

- CSRF

Week 15–16: Network Security

- Firewalls & IDS/IPS

- VPN Concepts

- Wireless Security

- Packet Analysis (Wireshark)

Mini Project: Web Application Security Testing

Month 5: Advanced Cyber Security

Week 17–18: Penetration Testing

- Pen Testing Methodology

- Exploitation Basics

- Password Attacks

- Social Engineering

Week 19–20: Security Operations (SOC)

- SOC Fundamentals

- SIEM Basics

- Log Monitoring

- Incident Response

- Digital Forensics Basics

Mini Project: SOC Monitoring & Incident Report

Month 6: Major Project & Career Skills

Week 21–22: Major Project Development

Major Project Options:

- Vulnerability Assessment & Penetration Testing (VAPT)

- Web Application Pen Testing

- Network Security Audit

- Malware Analysis (Basic)

- SOC Simulation Project

Features:

- Real-time Tools Usage

- Security Report Preparation

- Risk Analysis & Mitigation

Week 23–24: Deployment & Career Preparation

- Report Documentation

- Resume Preparation

- Interview Questions

- Mock Interviews

- Cyber Security Certifications Guidance

Tools & Technologies

- Kali Linux

- Nmap, Wireshark, Metasploit

- Burp Suite

- Nessus

- Linux & Windows OS

Internship Deliverables

- Weekly Lab Assignments

- Mini Projects

- Major Project

- Internship Certificate

- Security Reports

Final Outcome

- Strong Cyber Security Fundamentals

- Hands-on Ethical Hacking Skills

- Real-time Project Experience

- Job & Certification Ready