Cyber Security

Web Application and their Evolution
- SDLC
- HTTP Response codes, Request Response Cycle
- 2 tier, 3 tier, n-tier Architecture
- Traditional and New 3 tier Architecture

Introduction To Hacking
- Description of hacking vs Ethical hacking Types of Hackers
- Skill Profile of a Hacker
- Some Famous Hackers and Groups Cyber World
- Advantage and Disadvantage of Cyber world Cyber World as a Home of hackers

Reconnaissance
- What Is Information Gathering Why Hackers Need This?
- Types Of Reconnaissance Reconnaissance Using Websites Reconnaissance Using Software Reconnaissance Using Add-Ons
- Search Engines- Smart Way Of Reconnaissance Scanning And Enumeration
- Tracing - E-Mail, Mobile Phone
- Open Source Intelligence - Tools and techniques

System Hacking & Security
- Introduction to Operating Systems Windows & Linux Operating Systems Windows Security Issues
- Hacking Windows (Xp / Win 7) Hacking Windows 10
- System Hacking - Counter Measures Services, Ports, Protocols
- Firewall Configuration Monitoring System

Malware Analysis
- Introduction To Malware Analysis Types Of Malware

- Virus, Worms, Backdoors, Spyware, Adware Introduction to Trojans
- Trojans Attack Famous Cases
- Ways a Trojan Can Get Into A System Analysis Of Trojans/Virus
- How we remove Trojans Manually Security Against Malware
- Immediate response against malware

Hacking Google Database
- Introduction and Working of Search Engines
- List of Common Search Engines on Web Comparing and Choosing Best Search Engine
- Dorks For Hacking Search Engines
- Tools for Search Engines Hacking
- Finding Admin Pages and Weakness In Site Security against Search Engine Hacking

Network Security & Hacking
- Introduction To Networks (LAN /WAN)
- Understanding Communication Protocols
- Sniffing Attacks
- DOS & DDOS Attack
- Mis-configuration
- Man - In - Middle - Attacks
- RIP attacks, IP spoofing, Mac Spoofing
- Firewall Configuration & Maintenance
- Network Monitoring & Analysis
- ISP Attacks
- Logs Maintenance

Social Engineering
- Introduction to Social Engineering
- Types of Social Engineering Tools
- Based
- Manually
- World's Biggest Social Engineering Cases
- Web-based Social Engineering
- Vulnerability in Social Engineering
- Analyzing a Social Engineering Attack
- Kali Linux - Social Engineering Toolkit

Proxy Servers & VPN

- Proxy And Types Of Proxies
- Why Hackers Use Proxy?
- Advantage And Disadvantage Of Proxy
- How Proxy Hack Your Passwords Etc
- What Is VPN?
- Why We Use VPN
- Advantage & Disadvantage Of VPN
- Free VPN
- Countermeasures

Data Security and Recovery

Data hiding with Steganography

- What Is Steganography
- Alternate data stream in NTFS
- How Attacker Hides His Data in Images and Other Formats
- How to Find Data Which Are Hidden

Data Security with Cryptography

- What Is Cryptography
- Securing Data by Using EFS and BitLocker
- Advanced Cryptography Tools
- Vera crypt and Trucrypt

Web Application Penetration Testing

- Legal and Ethical Implications
- Types of Penetration Testing
- White Box Penetration Testing
- Black Box Penetration Testing
- Grey Box Penetration Testing
- Setting Up Web Application Penetration Testing Lab
- Collecting and Installing PenTest Tools
- Flexible Browser with Security Add-ons
- Setting up Browser Proxies
- Introduction To Burpsuite
- Introduction To OWASP
- Introduction of Websites & Database
- Authentication Process Of Web Application
- Attack on Website & Web Application
- Get and Post Parameters
- SQL Injection Attacks
- Cross site scripting
- Session hijacking

- RFI & LFI Attacks
- Data tampering
- Countermeasures

Pentesting With Kali Linux

- Introduction Services In Kali
- Service Management
- Basic commands(files, directories, searching..)
- Terminal and Its Usage
- Essential Tools
- Shells (Bind and Reverse Shell)
- All Kinds Of Hacking Techniques with Kali Linux

Firewalls,IDS/IPS, Honeypots

- Firewall Planning and Design
- Developing a Security Policy
- Firewall Configuration Strategies
- Windows Firewall
- Packet Filtering
- Working with Proxy Servers and Application-Level Firewalls Authenticating Users
- Encryption and Firewalls
- Setting Up a Virtual Private Network
- Building Your Own Firewall
- Examine and classify Intrusion Detection Systems (IDS)
- SNORT, Zone Alarm e.t.c
- Network Intrusion Detection System(NIDS)
- Host Intrusion Detection System(HIDS)
- Honeypots and Honeynets
- Legal and Ethical Aspects

Mobile Hacking & Security

- iOS and Android architectures basics
- Android and iOS vulnerabilities in-depth
- Covers mobile OSs security mechanisms and implementations
- Covers Mobile applications reverse engineering
- In depth mobile applications static and dynamic analysis
- Practice on real world mobile applications
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- Build your own home lab on mobile application security
- Covers: APKTool, Dex2Jar, GDB Debugger, Cycript.
- Hacking Mobile Platforms (Android)
- Android Automated Hacking
- Android Manual Hacking Techniques
- Mobile Application Security Techniques
- Mobile Security Laws

Physical Security
- Physical Security
- Current Statistics
- Accountability
- Need of Physical Security
- Factors Affecting Physical Security
- Physical Security Checklist
- Company Surroundings
- Premises
- Reception
- Server
- Workstation Area
- Wireless Access Points
- Other Equipments such as fax, removable media etc
- Access Control
- Computer
- Equipment Maintenance
- Wiretapping
- Remote Access
- Locks
- Spyware

Cryptography & Security
- Concept of Cryptography
- Advantages and uses of Cryptography
- PKI (Public Key Infrastructure)
- DES , AES , Algamal , e.t.c.
- Algorithm's of encryption–RSA, MD5, SHA, SSL, PGP, SSH, GAK Concept of Digital Signature
- Encryption Cracking Techniques
- Disk Encryption
- CA (Certificate Authority)
- Cryptanalysis

Wireless Hacking & Security
- Wireless Technology
- Introduction to wireless networking
- Basics & Terminologies
- Advantages of Wireless Technology
- Components of Wireless Network
- Types of Wireless Network
- Setting and detecting a Wireless Network
- Advantages and Disadvantages of Wireless Network
- Near Field Communication Concepts(NFC)
- Bluetooth Technology and Security
- Antennas, SSID, Access Point Positioning and Rogue Access Point Concept of Wired Equivalent Privacy (WEP)
- MAC Sniffing & AP Spoofing
- Terminology of Wi-Fi Access
- Denial-of-Service and MITM Attack in Wi-Fi
- Wireless Intrusion Detection System
- Hacking WPA/WPA2
- Introduction to Aircrack, Fluxion e.t.c.
- Tips to Secure Wireless Network

Assembly & Reverse Engineering
- Introduction To Assembly Language
- Concept of Reverse Engineering
- Positive Application of Reverse Engineering
- Ethical Reverse Engineering
- DMCA ACT
- Disassembler
- Decompilers
- Program Obfuscation
- Why do you need to decompile?
- NET Obfuscator and NET Obfuscation
- Java Byte Code Decompilers
- How does OllyDbg Work
- Cracking Application Using OllyDbg, WinHex, Hex Workshop
- Hardware Security

Identity Theft Fraud
- Introduction to Identity Theft
- Identity Theft Occurrence
- Impact of Identity Theft Fraud

- Types of Identity Theft
- Dumpster Diving
- Change of ID
- E-Mail Theft
- Smishing
- Vishing
- Data Breach
- Overlays
- ATM Schemers / Hand-held Skimmers
- Shoulder Surfing
- Prevention Techniques

Vulnerability Assessment
- Concept of Vulnerability Assessment
- Purpose Types of Assessment
- Vulnerability Classification
- How to Conduct Vulnerability Assessment
- Vulnerability Analysis Stages
- Vulnerability Assessment Considerations
- Vulnerability Assessment Reports
  TimeLine and Penetration Attempts
  Vulnerability Assessment Tools
- Security and Vulnerability Assessments
- Limitations of Vulnerability Assessments
- Assessment & Report writing
- Security Measures and Tips

Penetration Testing
- What is Penetration Testing?
- Why Penetration Testing is Necessary?
- Types of Pen Testing
- Penetration Testing Types
- External Penetration Testing
- Internal Security Assessment
- Black Box Penetration Testing
- Grey Box Penetration Testing
- White Box Penetration Testing
- Phases of Penetration Testing
- Pre-Attack Phase
- Attack Phase
- Enumerating Devices
- Post Attack Phase
- Penetration Testing Deliverable Templates
- Pen Testing Methodology
- Terms Of Agreement
- Project Scope
- Application Security Assessment

- Web Application Testing
- Network Security Assessment
- Metasploit Framework
- Exploiting Windows with Metasploit Framework
- Countermeasures

Security Compliance and Auditing
- Security Compliance and Auditing What is Compliance?
- Need for Security Compliance
- Standards for Security Compliance
- ISO 27001
- PCI DSS
- HIPPA
- GDPR e.t.c.
- Introduction to IT Auditing
- What is Security Auditing?
- What is the need for Security Auditing?
- Relevance of Compliance Standards in Auditing
- Importantance of Risk Management

Incident Handling & Computer forensics
- Understanding Incidents
- Exploring the Incident
- Paradigm:Classifications and Meaning
- Incidents: Types and Functionality
- Controlling Incidents
- Incident Response: A Brief Overview
- Incident Response:Structural Design
- Incident Handling
- Computer Security Incident Response Team (CSIRT)?
- Define Computer Forensics
- Key Rules for Computer Forensics
- Computer Forensic Procedure
- Identification of Evidence
- Acquisition
- Preservation of Evidence
- Analysis of Evidence
- Documentation
- File Recovery,
- Data Analysis,
- Screen Capture
- Chain of Custody
- Introduction to Memory Forensics

Cloud Computing & Security
- What is the cloud?
- History of Cloud Computing
- How Cloud Computing Works
- Advantages & Disadvantages
- Applications for Businesses
- Cloud Service Providers
- Amazon Web Services
- Microsoft Azure
- Google Appengine
- Cloud Computing Architecture
- Cloud Computing Terminology
- Communication-as-a-Service (CaaS)
- Infrastructure-as-a-Service (IaaS)
- Monitoring-as-a-Service (MaaS)
- Software-as-a-Service (SaaS)
- Platform-as-a-Service (PaaS)
- Cloud Security and Techniques

IoT & Security
- Need of Internet of Things
- Understanding Internet of Things (IOT) Architecture
- Security Classification & Access Control
- Attack Surface and Threat Assessment
- IOT Protocol Built-In Security Features Exploitation with IoT Devices
- Sec1u4rity Management
- IoT and the Industrial Sector
- IoT and the Connected Home
- IoT and Consumer Wearables
- Case Studies and Discussion
- Smart Homes, Smart Agriculture
- Smart Retail Supply, Smart Healthcare
- Smart Grid, Smart Cities

Cyber Law
- Introduction
- Need Of Cyber Law
- Cyber Jurisprudence at International and Indian Level
- Cyber Law - International Perspectives
- Constitutional & Human Rights Issues in Cyberspace
- Cyber Crimes & Legal Framework
- Intellectual Property Issues in Cyber Space

- E Commerce
- Dispute Resolution in Cyberspace
- IT Act 2000
- Important IT Laws - INDIA