## **Application Security**

## **Session 1:**

* Introduction to MYSQL
* Installing and Configuring MYSQL

## **Session 2:**

* Creating and Dropping Database
* Queries in MYSQL

## **Session 3:**

* Overview of Regular Expression

## **Session 4:**

* Web Application Security Risks

## **Session 5:**

* Identifying the Application Security Risks

## **Session 6:**

* Threat Risk Modelling
* OWASP Top 10

**Session 7: Securing Code with Java**

* Fundamentals

**Session 8:**

* Denial of Service
* Injection and Inclusion

**Session 9:**

* Buffer Overflows and Input Validation
* Access Control

**Session 10:**

* Installing Python
* Your First Python Program
* Declaring Functions
* What's an Object?
* Indenting Code
* Testing Modules
* Native Datatypes

**Session 11:**

* Introducing Dictionaries
* Defining Dictionaries
* Modifying Dictionaries
* Deleting Items From Dictionaries
* Files

**Session 12:**

* Introducing Lists
* Defining Lists
* Adding Elements to Lists
* Searching Lists
* Deleting List Elements
* Using List Operators

**Session 13:**

* Introducing Tuples
* Declaring variables
* Referencing Variables
* Assigning Multiple Values at Once
* Formatting Strings
* Mapping Lists
* Joining Lists and Splitting Strings
* Historical Note on String Methods

**Session 14:**

* Using Optional and Named Arguments
* Using type, str, dir, and Other Built-In Functions
* Object References
* Socket with Python

**Session 15:**

* Case Study

**Ethical Hacking**

**Session 16:**

* Security Management Concepts & Principles
* Human side of Information Security’s
* Security Management
* Creation and Implementation of Policies and Standards
* Compliance with Policies and Standards
* Threats of Information System
* Threats and attacks
* Classification of Threads and attacks

**Session 17:**

* Protecting Information System Security
* Security in Mobile and Wireless Computing
* Credit card frauds in mobile and wireless Computing
* Security Policies and Measures in Mobile and wireless Computing
* Information Security Management
* Security policies and standards
* Fundamentals of Information Security

**Session 18:**

* Information Security risk analysis
* Introduction to Ethical Hacking
* Understanding Ethical Hacking Terminology
* Identifying Different Types of Hacking Technologies
* Understanding the Different Phase Involved in Ethical Hacking
* Hacktivism

**Session 19:**

* Types of Hacker Classes
* Ethical Hackers and Crackers
* Goals of Attackers
* Security, Functionality And Ease of Use Triangle
* Defining the Skills Required to become an Ethical Hacker

**Session 20:**

* How to Conduct Ethical Hacking
* Creating a Security Evaluation Plan
* Types of Ethical Hacks
* Footprinting and Social Engineering
* Understand How Traceroute Is Used in Footprinting
* Define the Terms Port Scanning, Network Scanning and Vulnerability Scanning
* Understand various Scanning Methodologies
* SYN, Stealth, XMAS, NULL, IDLE and FIN Scans

**Session 21:**

* TCP Communication Flag Types
* Banner Grabbing and OS Fingerprinting Techniques
* How Proxy servers are used in launching an Attack?
* Http tunneling Techniques
* IP Spoofing Techniques
* Enumeration
* Password-cracking Techniques
* Cracking Windows 2000 Passwords
* Redirecting the SMB Logon to the attackers
* SMB Redirection, SMB Relay MITM Attacks and Countermeasures
* NetBIOS DOS Attacks

**Session 22:**

* Password-Cracking Countermeasures
* Active/Passive online Attacks
* Offline Attacks
* Nonelectronic Attacks
* Keyloggers and other Spyware Technologies
* Trojans and Backdoors
* Overt and Covert Channels
* Types of Trojans
* Reverse-connecting Trojans
* Netcat Trojan
* Indications of a Trojan Attacks

**Session 23:**

* Wrapping
* Trojan Construction Kit and Trojan Makers
* The countermeasure Techniques in Preventing Trojans
* Trojan-Evading techniques
* System File Verification

**Session 24:**

* Difference between a Virus and a Worm
* Types of Viruses
* Antivirus Evasion Techniques
* Virus Detection Methods

**Session 25:**

* Protocols Susceptible to Sniffing
* Active and Passive Sniffing
* ARP Poisoning
* Ethereal Capture and Display Filters
* MAC Flooding
* DNS Spoofing Techniques
* Describe Sniffing Countermeasures

**Session 26:**

* Types of DOS Attacks
* How DDos Attacks Work
* How BOTs/BOTNETs work
* Smurf Attacks
* SYN Flooding
* Spoofing vs Hijacking
* Types of Session Hijacking
* Steps to perform session Hijacking
* Prevention of session Hijacking

**Session 27:**

* Hacking Web Servers
* Web Application Vulnerabilities
* Web-Based Password Cracking Techniques
* Wireless Hacking
* WEP, WPA Authentication Mechanisms and Cracking Techniques
* Wireless Sniffers and Locating SSIDS, MAC spoofing
* Wireless hacking Techniques
* Methods used to secure Wireless Networks

**Session 28:**

* Linux Hacking
* Compilation of a Linux Kernel
* GCC Compilation Commands
* How to install Linux Kernel Modules
* Linux Hardening Methods
* IDSs, Honeypots and Firewalls

**Session 29:**

* Physical Security
* Overview of Physical Security
* Need of Physical Security
* Factors Affecting Physical Security
* Penetration Testing Methodologies

**Session 30: Malware Reverse Engineering**

* Types of Malware
* Malicious code Families
* Latest Trends in Malware
* Analysis Of Malware