

**Course 14. Ethical Hacking and Information Security**

Sl. No.	Modules	Hours
1	Java Programming with Crypto API	80
2	Application Security	70
3	Ethical Hacking	70
4	Management Development Program	60
5	Project	40
	<b>Total</b>	<b>320</b>

**Eligibility:** Any Engineering /Science graduate with mathematics up to 10+2 level

**Course Prerequisite:** Candidate should have knowledge of computer & networking fundamentals and Basic Computer Programming with OOPs concepts.

**Course Focus:** This course is aimed to provide skills on security programming which will help the students who want to make carrier in security domain.

**Detailed Syllabus****Java Programming with Crypto API**

- Introduction to Java
- Java Overview, Data types, Arrays, Decision statements, Loops
- Classes, Package
- java.lang, java.util
- Java Interfaces
- Exception Handling
- Networking with Java
- JSP & Servlets
- Cryptography
- Java Cryptography Architecture
- Java Cryptography Extension
- SSL and TLS protocols
- A Basic of SSL client and Server
- Client side Authentication
- Managing SSL Session Information
- Dealing with HTTPS

**Application Security**

- MySQL
- Introduction to MySQL
- Installing and Configuring MySQL
- Creating and Dropping Database
- Queries in MySQL
- Overview of Regular Expression
- Web Application Security
- Web application Security Risks
- Identifying the Application Security Risks

- Threat Risk Modelling
- OWASP Top 10
- Secure Coding with Java
- Fundamentals
- Denial of Service
- Injection and Inclusion
- Buffer Overflows and Input Validation
- Access Control
- Python
- Introduction to Python
- Python Objects
- Strings
- Numbers
- Lists
- Sorting
- Dictionaries and Files
- Sockets with Python

### **Ethical Hacking**

- Basics of Information System
- The changing nature of Information System
- Threats of Information System
- Threats and attacks
- Classification of Threads and attacks
- Protecting Information System Security
- Security in mobile and Wireless Computing
- Credit Card frauds in mobile and wireless Computing
- Security Policies and Measures in Mobile Computing
- Information Security Management
- Security Policy, Standards
- Responsibility for Information Security Management
- Building Blocks of Information Security
- Basic principal of Information Systems Security
- Information Security risk analysis
- Term and Definitions for Risk Analysis of Information Security
- Risk Management and Risk Analysis
- Data Privacy Fundamentals
- The Business Aspects of Penetration Testing
- The Technical Foundations of Hacking
- Foot printing and scanning
- Enumeration and Step-by-Step System Hacking
- Linux and Automated Security Assessment Tools
- Trojans and Backdoors
- Sniffers, session Hijacking and Denial of Service
- Web Server Hacking, Web application Vulnerabilities and Database Attacks
- Wireless Technologies, Security and Attacks
- IDS, Honey pots and Firewalls

- Cryptographic Attacks and Defenses
- Social Engineering and Physical Security
- Overview of Malware Reverse Engineering

**Malware Reverse Engineering**

- Types of Malware
- Malicious code Families
- Latest Trends in Malware
- Analysis of Malware

**Management Development Program**

Introduction to communication, Barriers to communication, Kind of communication, Confidence building Non-verbal Communication, Fluency and vocabulary, Synonyms, Antonyms, Grammar, Noun Pronoun, Verb, Adjective, Preposition, Conjunction, Words of Idioms & phrases, Sentence Construction, Fill up the blanks, Pronunciation, Conversation practice, Polite Conversation, Greeting, Logical reasoning, General Aptitude, Writing: Covering letter, Resume, Email, Presentation Skill, group discussion, Interview skills, Mock interview

**Project**