

## **DEPARTMENT OF INFORMATION TECHNOLOGY**

### **EINTVAC05 - INTRODUCTION TO CYBER SECURITY**

#### **COURSE OBJECTIVES**

To understand the basics of network and security

To explore and analyze Attacker Techniques and Fraud Techniques•

To analyze exploitation techniques

#### **UNIT-I**

Network and Security Concepts: Information Assurance Fundamentals- Authentication, Authorization, Nonrepudiation, Confidentiality, Integrity, Availability

#### **UNIT-II**

Attacker Techniques and motivations: How Hackers Cover Their Tracks (Antiforensics), Tunneling Techniques- HTTP, DNS, ICMP, Intermediaries, Steganography and Other Concepts, Detection and Prevention

#### **UNIT-III**

Basic Cryptography, Symmetric Encryption, Public Key Encryption, Firewalls. Microsoft Windows Security Principles: Windows Tokens, Window Messaging, Windows Program Execution.

#### **UNIT-IV**

Fraud Techniques and Threat Infrastructure: Phishing, Smishing, Vishing, and Mobile, Malicious Code, Rogue Antivirus, Click Fraud, Botnets, Fast-Flux, Advanced Fast-Flux.

#### **UNIT-V**

Exploitation Techniques to Gain a Foothold: Shellcode, Integer Overflow Vulnerabilities, Stack-Based Buffer Overflows, Format String Vulnerabilities, SQL Injection, Malicious PDF Files, Race Conditions.

### **TEXT BOOK**

1. James Graham, Richard Howard, Ryan Olson “CYBER SECURITY ESSENTIALS”, CRCPress, Taylor & Francis Group, 2011.

### **REFERENCES**

1. Martti Lehto, Pekka Neittaanmäki, “ Cyber Security: Analytics, Technology and Automation”, Springer-Intelligent Systems, Control and Automation: Science and Engineering-Volume 78, 2015.

**WEB REFERENCES** 1. <https://www.coursera.org/learn/intro-cyber-security-business>

### **COURSE OUTCOMES**

At the end of this course, the students will be able to:

1. Gain Basic Programming Knowledge for Cyber Security
2. Understand the various attacks in web interface.
3. Understand the level of security in operating systems.
4. Know the concepts of Network Security.
5. Understand and apply the security concepts in data base management systems