# SCHEME OF COURSE WORK

**Course Details:**

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|---|---|---|---|
| **Course Title** | **: Introduction to cyber security(15FE1114)** | | |
| **Course Code** | **: 15FE1114** | **L T P C** | **: 1 0 0 1** |
| **Program:** | **: B.Tech.** | | |
| **Specialization:** | **: Information Technology** | | |
| **Semester** | **: VIII & VI Semester ( 2018-19)** | | |
| **Prerequisites** | **: Networking** | | |
| **Courses to which it is a prerequisite** | **: NIL** | | |

**Course Outcomes (COs):**

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| 1 | Understand the basics of network and security. |
| 2 | Apply Windows Security Principles. |
| 3 | Explore Attacker techniques. |
| 4 | Understand Fraud techniques and threat infra structure. |
| 5 | Analyze exploitation techniques. |

**CourseOutcome** Versus **ProgramOutcomes** Versus **Program Specific Outcomes:**

| COs | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **CO-1** | 3 | 3 | 3 | 3 | 3 | | 3 | | | | | | | | 2 |
| **CO-2** | 3 | 3 | 3 | 3 | | | | | | | | | | | 2 |
| **CO-3** | | 3 | 3 | 3 | | | 2 | | | | | | | | |
| **CO-4** | 3 | 3 | 3 | 3 | 3 | | 3 | | | | | | | | 2 |
| **CO-5** | 3 | 3 | 3 | 3 | | | | | | | | | | | 2 |

3 - Strongly correlated, 2 - Moderately correlated, 1-Weakly correlated,Blank – No correlation

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|---|---|
| **Assessment Methods:** | End Exam |

## Teaching-Learning and Evaluation

| Week | TOPIC / CONTENTS | Course Outcomes | Sample questions | TEACHING-LEARNING STRATEGY | Assessment Method & Schedule |
|---|---|---|---|---|---|
| 1 | Network and Security Concepts: Information Assurance Fundamentals- Authentication, Authorization, Nonrepudiation. | CO1 | 1. Brifly explain security concepts.<br>2. Compare symmetric and public key encryption.<br>3. Describe about firewalls and their types. | ▫ Lecture<br>▫ PPT<br>▫ Discussion | End Exam<br>(Week:19/20) |
| 2 | Confidentiality, Integrity, Availability. Basic Cryptography. | CO1 | | | |
| 3 | Symmetric Encryption, Public Key Encryption. | CO1 | | | |
| 4 | Firewalls, Virtualization. | CO1 | | | |

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| 5 | Microsoft Windows Security | CO2 | 1. Explain about | ▫ Lecture | |
| | Principles: Windows Tokens, Window Messaging | | windows tokens and messaging.<br>2. Describe about windows firewall. | ▫ PPT<br>▫ Discussion | End Exam (Week:19/20) |
| 6 | Windows Program Execution | CO2 | | | |
| 7 | The Windows Firewall | CO2 | | | |
| 8 | Attacker Techniques and motivations:How Hackers Cover Their Tracks (Antiforensics) | CO3 | 1. Explain about tunneling techniques.<br>2. Briefly elaborate about steganography. | ▫ Lecture<br>▫ PPT | |
| 9 | Tunneling Techniques- HTTP, DNS, ICMP, Intermediaries | CO3 | | | |
| 10 | Steganography and Other Concepts, Detection and Prevention | CO3 | | | |
| 11 | Fraud Techniques and Threat Infrastructure: Phishing, Smishing, Vishing, and Mobile | CO4 | 1. Differentiate between Phising, smishing and vishing.<br>2. Describe about botnets. | ▫ Lecture<br>▫ PPT<br>▫ Discussion | |
| 12 | Malicious Code, Rogue Antivirus | CO4 | | | |
| 13 | Click Fraud, Botnets | CO4 | | | |
| 14 | Fast-Flux, Advanced Fast-Flux. | CO4 | | | |
| 15 | Exploitation Techniques to Gain a Foothold: Shellcode, Integer Overflow Vulnerabilities | CO5 | 1.Explain about SQLInjection with an example.<br>2.Desctibe about overflow vulnerabilities. | ▫ Lecture<br>▫ Discussion | |
| 16 | Stack-Based Buffer Overflows, Format String Vulnerabilities | CO5 | | | |
| 17 | SQL Injection | CO5 | | | |
| 18 | Malicious PDF Files, Race Conditions | CO5 | | | |
| **19/20** | **END EXAM** | | | | |