# SCHEME OF COURSE WORK

**Course Details:**

| | | | | | |
|---|---|---|---|---|---|
| **Course Title** | : Ethical Hacking | | | | |
| **Course Code** | :15CS2213 | **L  T  P  C** | | | :4 0 0 3 |
| **Program:** | : M.Tech. | | | | |
| **Specialization:** | : Cyber Security | | | | |
| **Semester** | :II Semester | | | | |
| **Prerequisites** | : Operating system Internals, Computer Networks, | | | | |
| **Courses to which it is a prerequisite** | | : USP,OSI | | | |

**Course Outcomes (COs):**

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| 1 | Learn various hacking methods. |
| 2 | Perform system security vulnerability testing. |
| 3 | Produce a security assessment report |
| 4 | Perform system vulnerability exploit attacks. |
| 5 | Learn various issues related to hacking. |

**Program Outcomes (POs):**

A graduate of Cyber Security Specialization will be able to

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| 1 | Understand what are the common threats faced today. |
| 2 | The foundational theory behind Cyber security |
| 3 | The basic principles and techniques when designing a secure system, |
| 4 | How to think adversarial, how today's attacks and defenses work in practice, how to assess threats for their significance, and how to gauge the protections and limitations provided by today's technology. |
| 5 | The basic principles and techniques in ethical hacking and overcome various hackers |
| 6 | Learn various security methodologies to enhance the security of web. |
| 7 | Basic principles of cyber laws and security policies |
| 8 | Various scripting languages to develop programs for security mechanisms. |
| 9 | Various tools and methodologies to analyze the various cyber crimes |
| 10 | Secure protocols inner mechanisms and their practical implementation |
| 11 | Various Forensic technologies and methodologies for security measurements analyze. |
| 12 | .Intrusion detection techniques and image model security aspects in Android application developments. |

**Course Outcome** versus **Program Outcomes:**

| COs | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
| CO-1 |     |     | S   |     |     | S   |     |     |     |      |      |      |
| CO-2 | M   | M   | S   |     |     |     |     |     |     | S    |      | M    |
| CO-3 |     |     | M   |     |     |     |     |     |     | S    |      | M    |
| CO-4 |     | S   |     | S   |     |     |     |     |     |      |      |      |
| CO-5 |     |     |     |     |     |     |     |     |     |      |      | S    |

*S -* **Strongly correlated,** *M - Moderately* **correlated,** *Blank - No correlation*

| Assessment Methods: | Assignment / Quiz / Seminar / Case Study / Mid-Test / End Exam |
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# Teaching-Learning and Evaluation

| Week | TOPIC / CONTENTS | Course Outcomes | Sample questions | TEACHING-LEARNING STRATEGY | Assessment Method & Schedule |
|------|------------------|-----------------|------------------|---------------------------|------------------------------|
| 1 | Passwords, Windows Login Passwords, Changing Windows Visuals, Cleaning Your Tracks. | CO-1 | 1.EXplain Password breaking. 2.Describe the various methods involved in changing windows visuals. | ▫ Lecture ▫ Demonstration | Assignment (Week 3 - 4) |
| 2 | Internet Explorer Users, Cookies, URL Address Bar, Netscape Communicator, Cookies, URL History | CO-1 | 1.Draw the block diagram Netscape communicator | ▫ Lecture / Discussion ▫ Programs implentation | Mid-Test 1 (Week 9) |
| 3 | The Basics, Scalars, Interacting with User by getting Input, Chomp() and Chop(), Operators, Binary Arithmetic Operators., Push() and Pop(), Unshift() and Shift(), Splice | CO-2 | 1.Write a program to create three files with scalar functions chomp,chop,pop ? | ▫ Lecture ▫ Programs implementation | Seminar (Week 3 - 6) |
| 4 | The Exponentiation Operator(**), The Unary Arithmetic Operators, Other General Operators, Conditional Statements, Assignment Operators. | CO-3, CO-4 | 1. Explain Perl operator? | | |
| 5 | The?: Operator, Loops, The While Loop, The For Loop, Arrays, THE FOR EACH LOOP: Moving | CO-3 | 1. Differentiate for() and foreach() and perl scipt model | | |

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| | through an Array, Functions Associated with Arrays | | programs? | | |
| 6 | Default Variables, $_, @ARGV, Input Output, | CO-3,CO-4 | 1.Define Input and output file manipulative functions ? | | |
| 7 | Opening Files for Reading, Another Special VariableS. | C0-4 | 1. Differentiate variables ? | | |
| 8 | Example Models. | CO-4 | | | |
| **9** | **Mid-Test 1** | | | | |
| 10 | Editing your Operating Systems by editing Explorer.exe, Secure your Desktop Icons and Settings | CO-3 | Steps for editing explorer windows | ▫ Lecture<br>▫ Discussion | Mid-Test 2 (Week 18) |
| 11 | . The Registry, The Registry Editor, Description of .reg file, Command Line Registry Arguments | CO-3 | Explain registry models files | | Seminar (Week 10 - 15) |
| 12 | Files, Some Windows & DOS Tricks, Customize DOS, Clearing the CMOS without opening your PC, | CO-3 | Explain CMOS seetings in windows ? | | |
| 13 | A Trick to Play, Disabling Display of Drives in My Computer, Take Over the | CO-3 | Tricks for disabling drives in pc ? | | |
| 14 | Other System The Untold Windows Tips and Tricks Manual, Exiting Windows the Cool and Quick Way | CO-5 | Differentiate trick manual models | | |
| 15 | , Ban Shutdowns, Change the Default Locations | CO-5 | | | |
| 16 | | CO-5 | | | |
| 17 | what is a virus?, boot sector viruses (mbr or master boot record), file or program viruses, multipartite viruses, stealth viruses, polymorphic viruses, macro viruses, blocking direct disk access, recognizing master boot record | CO-5 | Explain the model of operation with virus mechanism ? | | |
| **18** | **Mid-Test 2** | | | | |
| **19/20** | **END EXAM** | | | | |