**NIRMA UNIVERSITY**

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| **Institute:** | Institute of Technology |
| **Name of Programme:** | Integrated B.Tech.(CSE)-MBA |
| **Course Code:** | CSI0903 |
| **Course Title:** | Ethical Hacking |
| **Course Type:** | (□ Core/ □ Value Added Course / √ **Department Elective** / □ Institute Elective/ □ University Elective/ □ Open Elective / □ Any other) |
| **Year of Introduction:** | 2022-23 |

| L | T | Practical Component | | | | C |
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**Course Learning Outcomes (CLOs):**

At the end of the course, the student will be able to –

1. summarize the core concepts related to malware, hardware and software vulnerabilities and their causes (BL2)
2. identify the ethics behind hacking and vulnerability disclosure (BL3)
3. make use of various tools to exploit the vulnerabilities (BL3)
4. build secure web application (BL6)

**Syllabus:** **Total Teaching hours: 30**

| Unit | Syllabus | Teaching hours |
|---|---|---|
| Unit-I | **Introduction to Ethical Disclosure:** Ethics of Ethical Hacking, Ethical Hacking, and the legal system, Proper and Ethical Disclosure | 05 |
| Unit-II | Information gathering, wire, and wireless packet sniffing, ARP and DNS spoofing, MITM attacks, Detection, and Security | 11 |
| Unit-III | **Website Hacking:** Information gathering, OWASP Vulnerabilities and discovery of Vulnerabilities using open-source tools | 08 |
| Unit-IV | **Defence in Depth:** Host-based and Network-based defences (Firewalls, Intrusion Detection/Prevention) | 06 |

Self-Study: The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents

Suggested Readings/ References:


1. Preston Galla, How Personal and Internet Security Work, Que Publications
2. Alfred Basta and Wolf Halton, Computer Security Concepts, Issues and Implementation, Cengage Learning
3. Shon Harris, Allen Harper, Chris Eagle and Jonathan Ness, Gray Hat Hacking: The Ethical Hackers' Handbook, TMH Edition
4. Jon Erickson, Hacking: The Art of Exploitation, SPD
5. Peltier, T. R., Peltier, J., Blackley, J. A. Managing a Network Vulnerability Assessment, CRC Press
6. Caswell, B., Beale, J., Ramirez, G., Rathaus, N. Nessus, Snort, and Ethereal Power Tools: Customizing Open-Source Security Applications, Elsevier

| | Sr. No. | Title | Hours |
|---|---|---|---|
| Suggested List of Experiments: | 1 | Setting Up a Penetration Testing | 02 |
| | 2 | Elementary Linux Commands (kali Linux) | 02 |
| | 3 | Proxy chain using PyCharm in Kali Linux | 02 |
| | 4 | Wireless attacks using Kali Linux | 02 |
| | 5 | Web application Penetration testing using Burp | 04 |
| | 6 | Windows privilege escalation | 04 |
| | 7 | Attack using Metasploit | 04 |

Suggested Case List: -NA-