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| **COURSE NAME** | **ETHICAL HACKING** |
| **COURSE CODE** | **CCS344** |
| **NBA COURSE CODE** |  |
| **REGULATION** | **2021** |
| **YEAR** | **III** |
| **SEMESTER** | **VI** |

**SYLLABUS**

**UNIT I:** INTRODUCTION **6 Ethical Hacking Overview - Role of Security and Penetration Testers .- Penetration-Testing Methodologies- Laws of the Land - Overview of TCP/IP- The Application Layer - The Transport Layer - The Internet Layer - IP Addressing .- Network and Computer Attacks - Malware - Protecting Against Malware Attacks.- Intruder Attacks - Addressing Physical Security**

**UNIT II: FOOT PRINTING, RECONNAISSANCE AND SCANNING NETWORK 6 Footprinting Concepts - Footprinting through Search Engines, Web Services, Social,**

**Networking Sites, Website, Email - Competitive Intelligence - Footprinting through Social Engineering - Footprinting Tools - Network Scanning Concepts - Port-Scanning Tools - Scanning Techniques - Scanning Beyond IDS and Firewall**

**UNIT III: ENUMERATION AND VULNERABILITY ANALYSIS 6**

### **Enumeration Concepts - NetBIOS Enumeration – SNMP, LDAP, NTP, SMTP and DNS Enumeration - Vulnerability Assessment Concepts - Desktop and Server OS Vulnerabilities - Windows OS Vulnerabilities - Tools for Identifying Vulnerabilities in Windows- Linux OS Vulnerabilities- Vulnerabilities of Embedded Oss**

### **UNIT IV: SYSTEM HACKING 6**

### **Hacking Web Servers - Web Application Components- Vulnerabilities - Tools for Web Attackers and Security Testers Hacking Wireless Networks - Components of a Wireless Network – Wardriving- Wireless Hacking - Tools of the Trade**

### **UNIT V NETWORK PROTECTION SYSTEMS 6**

### **Access Control Lists. - Cisco Adaptive Security Appliance Firewall - Configuration and Risk Analysis Tools for Firewalls and Routers - Intrusion Detection and Prevention Systems - Network- Based and Host-Based IDSs and IPSs - Web Filtering - Security Incident Response Teams – Honeypots**

30 PERIODS

**PRACTICAL EXERCISES: 30 PERIODS**

**1.Install Kali or Backtrack Linux/Metasploitable/Windows XP**

**2.Practice the basics of reconnaissance**

**3.Using FOCA/SearchDiggity tools,extract metadata and expanding the target list.**

**4.Aggregates information from public databases using online free tools like Paterva’s Maltego**

**5.Information gathering using tools like Robtex**

**6.Scan the target using tools like Nessus**

**7.View and capture network traffic using Wireshark**

**8.Automate dig for vulnerabilities and match exploits using Armitage**

**FOCA :http://www.informatics64.com/foca.aspx**

**Nessus :http://www.tenable.com/product/Nessus**

**Wireshark :http://www.wireshark.org**

**Armitage :http://www.fastandeasyhacking.com**

**Kali or Backtrack Linux,Metasploitable,Windows XP**

**TOTAL :60 PERIODS**

**TEXTBOOKS**

**1.Michael T. Simpson, Kent Backman, and James E. Corley, Hands-On Ethical Hacking and Network Defense, Course Technology, Delmar Cengage Learning, 2010.**

**2.The Basics of Hacking and Penetration Testing - Patrick Engebretson, SYNGRESS, Elsevier, 2013.**

**3.The Web Application Hacker’s Handbook: Finding and Exploiting Security Flaws, Dafydd Stuttard and Marcus Pinto, 2011.**

**REFERENCES**

**1.Black Hat Python: Python Programming for Hackers and Pentesters, Justin Seitz , 2014.**

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|  | **COURSE OUTCOME** | **K LEVEL** |
| **At the end of the course student will be able to** | | |
| **CO 1** | **To express knowledge on basics of computer based vulnerabilities** | **K1** |
| **CO 2** | **To gain understanding on different foot printing, reconnaissance and scanning methods** | **K2** |
| **CO 3** | **To demonstrate the enumeration and vulnerability analysis methods** | **K3** |
| **CO 4** | **To gain knowledge on hacking options available in Web and wireless applications.** | **K3** |
| **CO 5** | **To acquire knowledge on the options for network protection and use tools to perform ethical hacking to expose the vulnerabilities** | **K3** |

**CO’s- PO’s & PSO’s MAPPING**

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| **CO’s** | **PO’s** | | | | | | | | | | | | **PSO’s** | | |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **1** | **2** | **3** |
| **1** | 2 | 2 | 3 | 2 | 1 | - | - | - | 1 | 2 | 2 | 1 | 1 | 2 | 3 |
| **2** | 1 | 2 | 1 | 2 | 1 | - | - | - | 2 | 2 | 1 | 1 | 1 | 2 | 2 |
| **3** | 2 | 2 | 3 | 3 | 1 | - | - | - | 1 | 2 | 1 | 2 | 2 | 3 | 1 |
| **4** | 2 | 1 | 1 | 2 | 1 | - | - | - | 1 | 3 | 3 | 3 | 3 | 2 | 1 |
| **5** | 2 | 3 | 1 | 1 | 2 | - | - | - | 2 | 1 | 1 | 1 | 1 | 1 | 3 |
| **AVG** | 1.8 | 2 | 1.8 | 2 | 1.2 | - | - | - | 1.4 | 2 | 1.6 | 1.6 | 1.6 | 2 | 2 |

**1 - low, 2 - medium, 3 - high, ‘-' - no correlation**

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| **PREPARED  BY** | **VERIFIED BY** | **APPROVED BY** |
| **COURSE COORDINATOR** | **NBA COORDINATOR** | **HOD** |

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