# 20CS41J2 - CYBER SECURITY

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| Course Category: | Job Oriented Elective | Credits: | 3 |
| Course Type: | Theory | Lecture-Tutorial-Practical: | 3-0-0 |
| Prerequisite: | Knowledge in computer and network fundamentals and basic Security essentials. | Sessional Evaluation:  Univ. Exam Evaluation:  Total Marks: | 40  60  100 |
| Objectives: | * To familiarize various types of cyber-attacks and cyber-crimes. * To give an overview of the cyber laws. * To study the defensive techniques against these attacks. | | |

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| Course Outcomes | Upon successful completion of the course, the students will be able to: | |
| CO1 | Understand the basic concepts of Cyber Security. |
| CO2 | Acquire the knowledge about various types of Cyber Laws. |
| CO3 | Exposure on cybercrimes in devices. |
| CO4 | Learn the concept of protection mechanism in social media. |
| CO5 | Know about policy Management in internet community. |
| CO6 | Analyze different case studies in Cyber Security, |
| Course Content | UNIT-I  **Introduction to Cybercrime:** Definition, Cybercrime and information security, Classification of Cybercrimes, Cybercrime: The legal perspectives, An Indian perspective, Cybercrime and the Indian ITA 2000, A global perspective on Cybercrimes.  UNIT-II  **Cyberoffenses:** Categories of Cybercrime, how criminals plan the attacks, Social Engineering, Cyberstalking, Cybercafe and Cybercrimes, Botnets, Attack vector.  UNIT-III  **Tools and Methods used in Cybercrime:** Introduction, Proxy Servers and Anonymizers, Phishing, Password Cracking, Keyloggers and Spywares, Virus and Worms, Trojan Horses and Backdoors.  UNIT-IV  **Understanding Computer Forensics:** Historical background of Cyberforensics, Digital Forensics Science, The need for Computer Forensics, Cyberforensics and Digital Evidence, Digital Forensics Life Cycle, Network Forensics.  UNIT-V  **Cybersecurity: Organizational Implications**  Introduction, Cost of Cybercrimes and IPR issues, Web Threats for organizations, Social media marketing, Social Computing and the associated challenges for organizations, Protecting People’s privacy in the organization, Organizational guidelines for internet usage, Safe Computing guidelines and Computer usage policy.  UNIT-VI  **Cybercrime and Cyberterrorism:** Introduction, Intellectual property in the Cyberspace, The Ethical Dimension of Cybercrimes, The psychology, Mindset and Skills of Hackers and Other Cybercriminals, Sociology of Cybercriminals. | |
| Text Books &  Reference  Books | **TEXT BOOKS:**   1. Nina Godbole and Sunit Belpure, Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives, Wiley.   **REFERENCE BOOKS:**   1. Cyber Security Essentials, James Graham, Richard Howard and Ryan Otson, CRC Press. 2. Introduction to Cyber Security, Chwan-Hwa(john) Wu,J. David Irwin, CRC Press T&F Group. 3. B. B. Gupta, D. P. Agrawal, Haoxiang Wang, Computer and Cyber Security: Principles, Algorithm, Applications, and Perspectives, CRC Press. | |
| E-Resources | <https://nptel.ac.in/courses> | |

**CO-PO Mapping:** 3-High Mapping, 2-Moderate Mapping, 1-Low Mapping

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|  | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CO1** | 2 |  |  |  |  |  | 1 | 3 |  |  |  | 2 |
| **CO2** | 3 | 2 |  | 2 |  | 3 |  |  |  |  |  | 3 |
| **CO3** |  | 2 | 3 | 3 | 3 |  |  |  |  |  |  | 2 |
| **CO4** |  |  |  | 3 | 3 | 2 |  |  |  | 2 |  | 2 |
| **CO5** |  | 2 |  |  |  | 3 | 2 |  | 3 | 2 |  | 2 |
| **CO6** |  |  |  | 3 | 3 |  |  |  |  | 3 | 3 | 3 |