राष्ट्रीय प्रौद्योगिकी संस्थान पटना / NATIONAL INSTITUE OF TECHNOLOGY PATNA
संगणक विज्ञान एंव अभियांत्रिकी विभाग / DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
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No:- Date:

CSXX2827: Cyber Security
L-T-P-Cr:3-0-0-3

Pre-requisites: Prior knowledge of fundamentals of Network Security and Cryptography

Objectives/Overview:

1. To impart knowledge in cyber security concepts, technologies, tools and challenges.
2. To learn how to develop an understanding of designing and hardening systems, keeping security in focus.
3. To develop necessary skills for transforming an organisation's cybersecurity strategy.

Course Outcomes:
At the end of the course, a student should:

Sl. No	Outcome	POs
1.	Knowledge about cybercrime and its legal consequences in cyber world	PO4, PO6, PO10
2.	Develop the concepts of detection and prevention of Cyber Crime	PO2, PO9, PO12
3.	Validate organizational cybersecurity strategy with the use of related tools, practices, technology.	PO4, PO5, PO8

UNIT I Lectures: 12
Cyber Security Fundamentals: Introduction, cybercrime and Information Security, Classification of Cybercrimes, Cybercrime the legal Perspective, Cyberoffences,, Cyber-attacks, Social engineering, Cyberstalking, Botnets, Attack Vector, Cybercrime and cloud computing, Cybercrimes on mobile and wireless devices, Attacks on mobile/cell phones, Authentication service security, Organizational security policies and measures in mobile computing

UNIT II Lectures: 10
Ethics in Cyber Security: Privacy, Intellectual Property in the cyberspace, Professional Ethics, Freedom of Speech, Fair User and Ethical Hacking, Trademarks, Internet Fraud, Electronic Evidence, forensic Technologies, Digital Evidence collection**Tools and Methods Used in Cybercrime**: Introduction, Proxy Servers and Anonymizers, Phishing, Password Cracking, Keyloggers and Spywares, Virus and Worms, Phishing and Identity Theft, Trojan Horses and Backdoors, Steganography, DoS and DDoS Attacks, SQL Injection, Buffer overflows

UNIT III Lectures: 10

Cybercrimes and Cybersecurity: Cybercrime and Legal Landscape around the world, Cyberlaws, The Indian IT Act, Challenges, Digital Signatures and Indian IT Act, Amendments to the Indian IT Act, Cybercrime and punishment, Cost of Cybercrimes and IPR Issues, Web threats for Organizations, Social Computing and associated Challenges for Organizations.

UNIT IV Lectures: 10

Cybercrime Examples and Mini-Cases: Career Paths in Cybersecurity, Honeypots, Case study (Official Website Hacking, E-mail spoofing, Banking related Frauds, Credit Card related Frauds)

Text Books:

1. Cyber Security by Nina Godhole, SunitBelapure, Wiley India.

2. Cyber Security Essentials by James Graham, Ryan Olson, Rick Howard CRC Press, Taylor & Francis Group, 2011 ISBN: 978-1-4398-5123-4