WEB SECURITY
(ELECTIVE-I)

Course Code: 15CS2207

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Pre requisites: Network security and Cryptography, and proficiency in Java and web programming Languages.

Course Outcomes: By the completion of this course, Student will

CO1: Understand security concepts, security professional roles, and security resources in the context of systems and security development life cycle.

CO2: Understand applicable laws, legal issues and ethical issues regarding computer crime.

CO3: Understand the business need for security, threats, attacks, top ten security vulnerabilities, and secure software development.

CO4: Understand information security policies, standards and practices, the information security blueprint.

CO5: Analyze and describe security requirements for typical web application scenario.

UNIT – I (10-Lectures)

Introduction- A web security forensic lesson, Web languages, Introduction to different web attacks. Overview of N-tier web applications, Web Servers: Apache, IIS, Database Servers.

UNIT – II (10-Lectures)

Review of computer security, Public Key cryptography, RSA. Review of Cryptography Basics, On-line Shopping, Payment Gateways.

UNIT – III (10-Lectures)

Web Hacking Basics HTTP & HTTPS URL, Web Under the Cover Overview of Java security Reading the HTML source, Applet Security

Servlets Security. Symmetric and Asymmetric Encryptions, Network security Basics, Firewalls & IDS.

UNIT – IV (10-Lectures)

Basics, Securing databases, Secure JDBC, Securing Large Applications, Cyber Graffiti. Case study on various web forensic tools like helix 3.0, deft_6.1, related web tools.

UNIT – V (10-Lectures)

Introduction to Information Hiding: Technical Steganography, Linguistic Steganography, Copy Right Enforcement, Wisdom from Cryptography Principles of Steganography: Framework for Secret Communication, Security of Steganography System, Information Hiding in Noisy Data , Adaptive versus non-Adaptive Algorithms, Active and Malicious Attackers, Information hiding in Written Text.

TEXT BOOKS:

McClure, Stuart, Saumil Shah, and Shreeraj Shah. Web Hacking: attacks and defense. Addison Wesley. 2003

RELATED WEB SITES:

1. Collection of Cryptography Web Sites, Publications, FAQs, and References: http://world.std.com/~franl/crypto.html
2. FAQ: What is TLS/SSL? http://www.mail.nih.gov/user/faq/tlsssl.htm
3. The Open SSL Project (SDKs for free download): http://www.openssl.org/