CSCH 452 - Network Security

UNIT I

How To Hack Computer Network: Understanding the Current Legal Climate, The Laws of Security: Client-Side Security Doesn't Work : Hacking Firewalls, Evading IDS Can, Insecurity Secret Cryptographic Algorithms, password to protect password in client side, **Classes of Attack:** Denial of Service, Information Leakage, Symbolic Link Attacks, Attacks against Special Files, Attacks against Databases, Identifying Methods of Testing for Vulnerabilities, Methodology, Diffing, Cryptography, Unexpected Input, Buffer Overflow, Format Strings.

(16 hours)

UNIT II

Sniffing: Obtaining Authentication Information, Popular Sniffing Software, Advanced Sniffing Techniques, Exploring Operating System APIs, Taking Protective Measures, Employing Detection Techniques **Session Hijacking:** Understanding Session Hijacking, Examining the Available Tools, Playing MITM for Encrypted Communications, **Spoofing:** Attacks on Trusted Identity, The Evolution of Trust, Establishing Identity within Computer, Capability Challenges, Desktop Spoofs, Impacts of Spoofs, **Tunneling:** Strategic Constraints of Tunnel Design, Designing End-to-End Tunneling Systems, Port Forwarding: Accessing Resources on Remote Networks, Hardware Hacking, Viruses, Trojan Horses, and Worms. **(16 hours)**

UNIT III

IDS Evasion: Using Packet Level Evasion, Using Application Protocol Level Evasion, **Automated Security Review and Attack Tools** : Exploration of the Commercial automated security Tools, Reporting Security Problems. **(16 hours)**

Text Books

(1). "Hack proofing your network ", Ryan Russell, Syngress, 2002

(2). "Network and System Security", John R. Vacca, Syngress, 2010

(3). "COMPUTER NETWORKS, A Systems Approach", Larry L. Peterson & Bruce S. Davie, Third Edition, Morgan Kaufmann Publishers, 2003

(4). "Computer Networks" , Andrew S. Tanenbaum David J. Wetherall, Fifth Edition, Pearson Education Limited 2014