

## Advanced Information Security

Introduction- Computer Security, Threats to security, History of Computer security, Computer System Security and Access Controls (System access and data access).

Threats - Viruses, worms, Trojan horse, bombs, trap doors, spoofs, email virus, macro viruses, remedies, Intruders, Malicious software, Firewalls, vulnerabilities & threats, Network Denial of service attack.

Communication security- Encryption, classical encryption techniques, data encryption standards, advance encryption techniques Network Security-Kerberos, X.509, some network security projects- SDNS, DISNet, Project MAX, Secure NFS

Security- E-Mail Security, IP security, Web security Server security- security for network server, web servers, mobile technologies (java and java script etc). Intrusion detection techniques -- techniques to provide privacy in Internet Application and protecting digital contents (music, video, software) from unintended use, authentication.

System and Application Security- mail security (PGP etc) file System security, program and security, memory security. Sandboxing. Security threads protection intruders- Viruses-trusted system. Secure programming languages- concepts structured multiprogramming, shared classes, cooperating sequential processes. structure of the multiprogramming system RC-4000 software.

Books:

- 1) Dieter Gouman, John Wiley & Sons, "Computer Security", Library of Congress Cataloging in Published Data- third Edition, 2011,
- 2) Mathew Bishop, "Computer Security: Art and Science", Addison-Wisley, 2002
- 3) Mathew Bishop, "Introduction to computer Security", Addison-Wisley 1<sup>st</sup> Edition, 2004
- 4) Kaufman, Perlman and Speciner, "Network security", Pearson Education 2<sup>nd</sup> Edition, 2002
- 5) William Stallings, "Cryptography and Network Security", Pearson Education, 5<sup>th</sup> Edition, 2011

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