

# Topics for Computer Security

## Comprehensive Exam

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Topics from Security in Computing, Pfleeger and Pfleeger 4th Edition 2007

1. Elementary Cryptography - Substitutions / Permutations
2. Elementary Cryptography - Symmetric, Assymmetric Encryption, DES, Rijndael
3. Elementary Cryptography - Public Key Encryption, RSA, Digital Signatures
4. Program Security - Buffer Overflow Attack and other nonmalicious program errors
5. Program Security - Viruses, Worms, Trojan Horses, Trapdoors, Controls
6. Protection in a General Purpose Operating System  
- Memory and Address Protection, Access Control
7. User Authentication, Passwords
8. Trusted Operating System Design
9. Network Security - Threats, Security Controls

10. Network Security - Firewalls, Intrusion Detection Systems, Secure e-mail
11. Administering Security - Planning, Risk Analysis
12. Administering Security - Security Policies, Physical Security
13. Legal, Privacy, Ethical Issues in Computer Security
14. Database and Data Mining Security