

LIST OF ENTRANCE EXAM QUESTIONS

FOR THE INTERNATIONAL MASTER'S DEGREE PROGRAM

COMPUTER SYSTEM INFORMATION SECURITY



Part 1

1. Modern concept of information security.
2. Classification of sensitive data. Confidentiality, sensitivity.
3. Criteria of information technology security assessment.
4. Types of information security.
5. Basic concepts of information security. Confidentiality, integrity, availability.
6. Laws and regulations in the field of information security (international documents).
7. Computer network models.
8. Computer networks. TCP/IP stack. IPsec protocol.
9. Data storage and processing systems.
10. Databases. Types of relations. Normalization. Management systems.
11. Data structures. Sorting and searching algorithms.
12. Programming languages. Types and differences.
13. Virtualization and Cloud Computing: types and techniques.

Part 2

1. Computer systems security vulnerabilities, threats and attacks.
2. Core concepts of access control. Identification, authentication, authorization.
3. Types of authenticating information. Advantages and disadvantages. Two-factor authentication.
4. Security and access control models.
5. Channels and methods of unauthorized access. Protecting information from unauthorized access.
6. Malware and antivirus software.
7. Information security risks.
8. Encryption. Symmetric key and public key.
9. Modern cryptographic standards.
10. Network security. Firewalls.
11. Network security. SSL/TLS.
12. Vulnerabilities detection methods and tools.
13. Intrusion detection systems.

RECOMMENDED READING

Cybersecurity

1. Cyber Security: Comprehensive Beginners Guide to Learn the Basics and Effective Methods of Cyber Security Paperback. Author: Brian Walker.
2. Cybersecurity. An Essential Guide to Computer and Cyber Security for Beginners, Including Ethical Hacking, Risk Assessment, Social Engineering, Attack and Defense Strategies, and Cyberwarfare. Author: Lester Evans.
3. Cyber Security Hardcover. Authors: Jocelyn O. Padallan.

Cryptography

1. Applied Cryptography: Protocols, Algorithms, and Source Code in C 2nd Edition. Author: Bruce Schneier.
2. The Code Book: The Science of Secrecy from Ancient Egypt to Quantum Cryptography. Author: Simon Singh.
3. Understanding Cryptography. A Textbook for Students and Practitioners. Authors: Paar, Christof, Pelzl, Jan.