How can we handle it?
Network and Information Security Education

TEN BLOCKS

ACM
AIS
IEEE
INFORMS
ISI
SDS
TBD
YAD

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COMPUTER SCIENCE.

or Computing Science (CS), George Forsythe, 1961

Theoretical

Theory of computation
Information and coding theory
Algorithms and data structures
Programming language theory
Formal methods
Concurrent, parallel and distributed systems
Databases and information retrieval

Applied

Artificial intelligence
Computer architecture and engineering
Computer graphics and visualization
Computer security and cryptography ●
Computational science
Information science
Software engineering

1. Computer Engineering

2. Information Technologies

3. Information Systems

Organizational Issues and Information Systems

Application Technologies

Software Methods and Technologies

Systems Infrastructure

Computer Hardware and Architecture

3

2

1

Theory Principles Innovation

Development

Application Deployment Configuration

More Theoretical

More Applied

The shaded area of the diagram represents the focus of typical curricula of related field of computer science

RECENT
TRENDS.

Security

The emergence of **security** as a major area of concern

Concurrency

The growing relevance of **concurrency**

Net-Centric Computing

The pervasive nature of **net-centric computing**

TEN
BLOCKS.

Information Security and Risk Management

- Security Management Concepts and Principles
- Change Control Management
- Data Classification
- Risk Management
- Policies, Standards, Procedures and Guidelines
- Security Awareness Training
- Security Management Planning
- Ethics

Access Control

2

- Access Control Techniques
- Access Control Administration
- Identification and Authentication Techniques
- Access Control Methodologies and Implementation
- Methods of Attack
- Monitoring and Penetration Testing

Cryptography

- Use of Cryptography
- Cryptographic Concepts, Methodologies, and Practices
- Private Key Algorithms
- Public Key Infrastructure (PKI)
- System Architecture for Implementing Cryptographic Functions
- Methods of Attack

Physical (Environmental) Security

4

- Elements of Physical Security
- Technical Controls
- Environment and Life Safety

Security Architecture and Design

- Principles of Computer and Network Organizations, Architectures, and Designs
- Principles of Security Models, Architectures and Evaluation Criteria
- Common Flaws and Security Issues—System Architecture and Design

Business Continuity Planning and Disaster Recovery Planning

6

- Business Continuity Planning
- Disaster Recovery Planning
- Elements of Business Continuity Planning

Telecommunications and Network Security

7

- Communications and Network Security
- Internet, Intranet, Extranet Security
- E-mail Security
- Secure Voice Communications
- Network Attacks and Countermeasures

Application Security

8

- Application Issues
- Databases and Data Warehousing
- Systems Development Controls
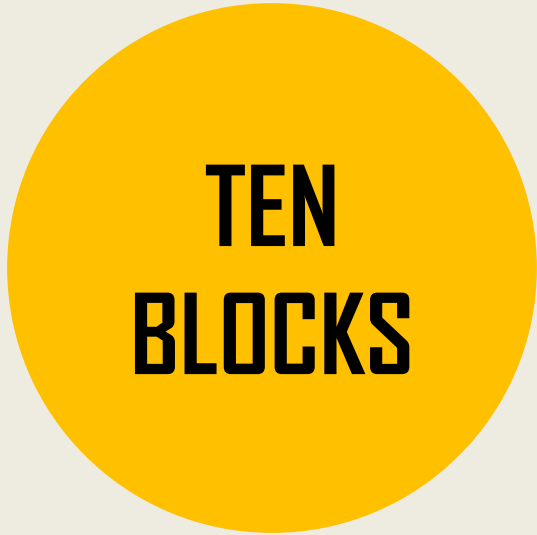- Methods of Attack

Operations Security

9

- Concepts
- Resource Protection Requirements
- Auditing

Law, Compliance and Investigations

10

- Information Law
- Investigations
- Major Categories of Computer Crime
- Incident Handling

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