Information & System Security

Lecture 0

VIT-AP
UNIVERSITY

Know Your Teacher

Your teacher may be a friend, a philosopher, and a guide…

Teachers genuinely play an important role in society.
They can make or break a future generation;
such is the power that rests in the hands of the teachers.
The students are like the clay and the teachers are
like the potters that shape their destiny.

Saroj Kumar Panigrahy

PhD(CSE)- NIT Rourkela

M.Tech(CSE)- NIT Rourkela

B.Tech(CSE)- Berhampur University

If I won’t sweat,
I won’t shine

6 years of Research and 16 years of Teaching Experience

Contact Me

Cabin # 329-B

Faculty Area 11, AB-1

VIT-AP
UNIVERSITY

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✉ **saroj.panigrahy@vitap.ac.in**

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Open Hours

Monday

Time: 4-5 pm

Venue:

Meet

meet.google.com/usn-rwve-ngf

Know Your Course

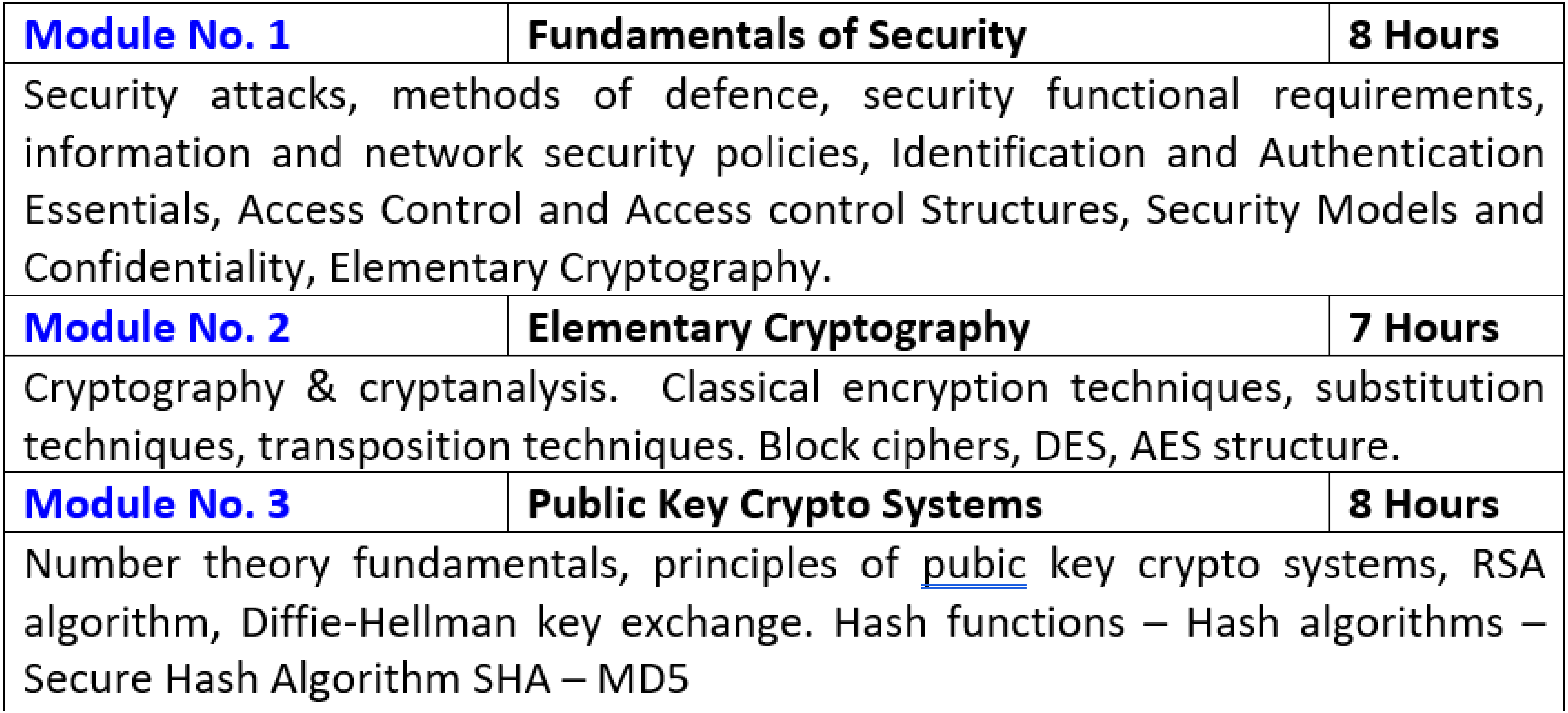
SWE3003

Information & System Security

T-J-C: 3-2-4

Objectives:	Objectives: 1. To learn principles of Information and System security. 2. To introduce the practices of cryptography and program security technology along with their practical use and applications.
Expected Outcome:	On completion of the course, students will have the ability to 1. Explain the basic concepts of information and systems security and the risks faced by computer systems. 2. Identify and analyze security problems in information systems. 3. Understand the principles of cryptography, network and information security and apply it in suitable security application. 4. Explain how security mechanism in computer systems work

Syllabus

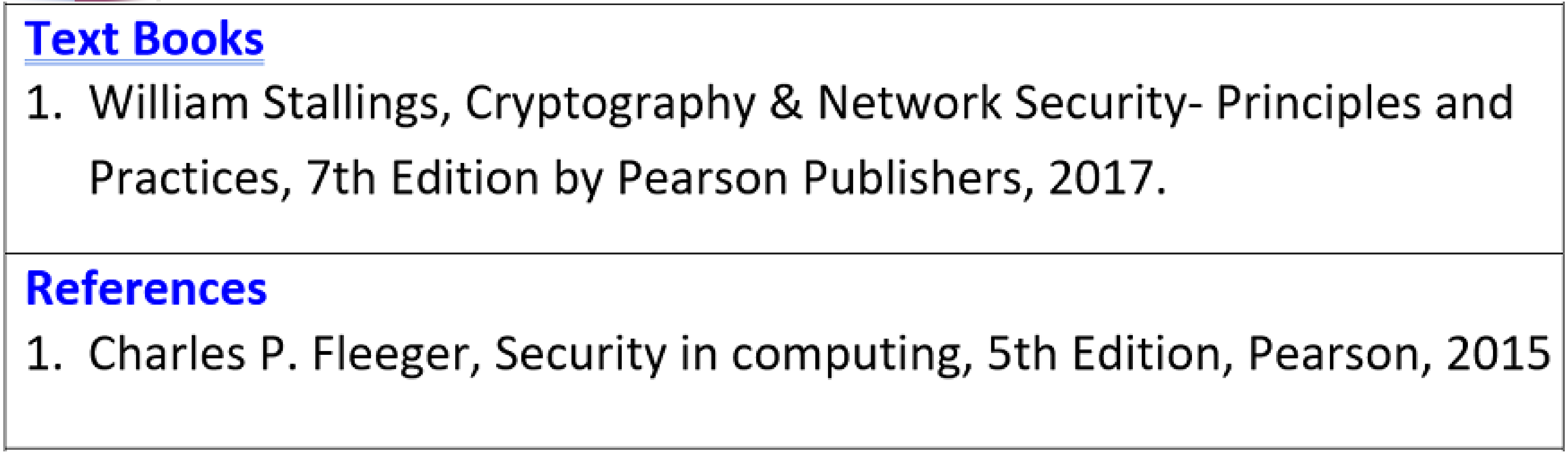


<table>
<tr><td><b>Module No. 1</b></td><td><b>Fundamentals of Security</b></td><td><b>8 Hours</b></td></tr>
<tr><td colspan="3">Security attacks, methods of defence, security functional requirements, information and network security policies, Identification and Authentication Essentials, Access Control and Access control Structures, Security Models and Confidentiality, Elementary Cryptography.</td></tr>
<tr><td><b>Module No. 2</b></td><td><b>Elementary Cryptography</b></td><td><b>7 Hours</b></td></tr>
<tr><td colspan="3">Cryptography & cryptanalysis. Classical encryption techniques, substitution techniques, transposition techniques. Block ciphers, DES, AES structure.</td></tr>
<tr><td><b>Module No. 3</b></td><td><b>Public Key Crypto Systems</b></td><td><b>8 Hours</b></td></tr>
<tr><td colspan="3">Number theory fundamentals, principles of pubic key crypto systems, RSA algorithm, Diffie-Hellman key exchange. Hash functions – Hash algorithms – Secure Hash Algorithm SHA – MD5</td></tr>
</table>

Syllabus

Module No. 4	**Data Base Security**	**7 Hours**
Relational databases, Security requirements, Reliability and Integrity, Sensitive data, Inference, Multilevel secure databases, concurrency control and multilevel security, Data mining, Privacy preserving data mining		
Module No. 5	**Network Security**	**8 Hours**
Threats in Networks, TCP/IP security, Network Security Controls, Intrusion Detection Systems, Firewalls and Intrusion Prevention Systems, Email security, Network attacks and DNS protection, Internet security procedures, Application and Data Hacking.		
Module No.6	**Program Security**	**7 Hours**
Secure programs, Non-malicious program errors, types of malicious software, viruses and counter measures, Bots, Rootkits, Targeted malicious code, Controls against program threats, software security issues.		

Syllabus

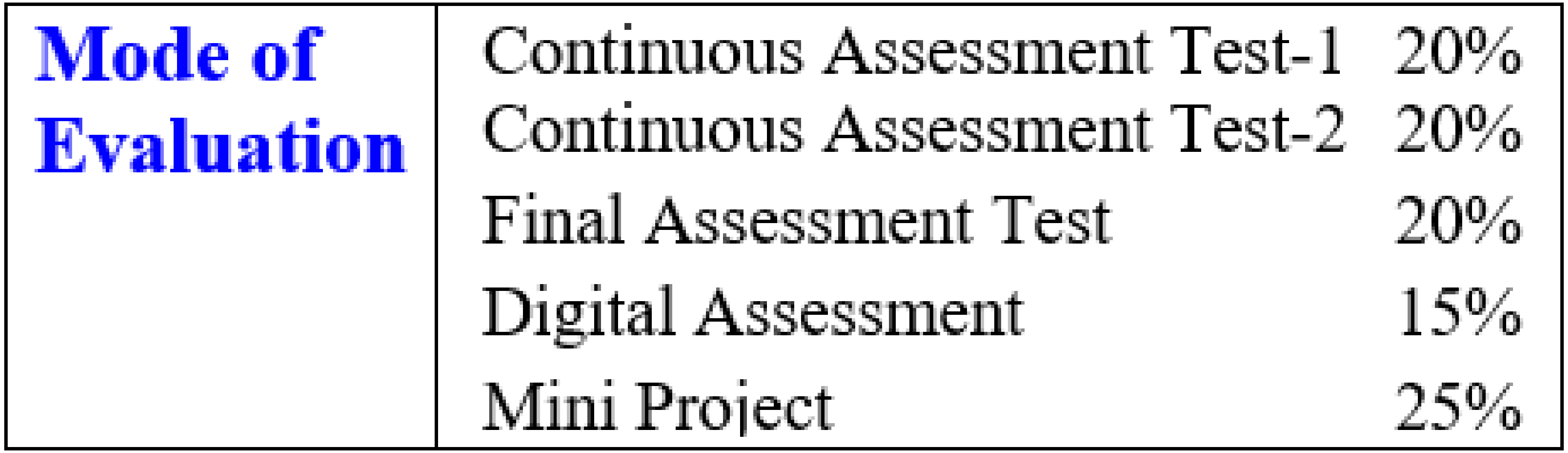


Text Books

1. William Stallings, Cryptography & Network Security- Principles and Practices, 7th Edition by Pearson Publishers, 2017.

References

1. Charles P. Fleeger, Security in computing, 5th Edition, Pearson, 2015



Mode of Evaluation	Continuous Assessment Test-1	20%
	Continuous Assessment Test-2	20%
	Final Assessment Test	20%
	Digital Assessment	15%
	Mini Project	25%

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তোমাকে ধন্যবাদ
감사합니다
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merci