ICT211e Encryption Techniques and Systems Security

Level: 2

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY SEMESTER

E-Learning: BLENDED - Learning is done MAINLY online using interactive study materials in Canvas. Students receive guidance and support from online instructors via discussion forums and emails. This is supplemented with SOME face-to-face sessions. If the course has an exam component, this will be administered on-campus.

Synopsis:

This course provides an overview of the encryption techniques and system security. Topics include basic security concepts, symmetric encryption, message confidentiality, public key encryption, message authentication, intrusion detection, viruses, firewalls and trusted systems.

Topics:

- Introduction: Security attacks and Services I
- Introduction: Security attacks and Services II
- Symmetric Encryption and Message Confidentiality I
- Symmetric Encryption and Message Confidentiality II
- Pubic-Key Cryptography and Message Authentication I
- Pubic-Key Cryptography and Message Authentication II
- Intruders I
- Intruders II
- Malicious Software I
- Malicious Software II
- Firewalls I
- Firewalls II

Textbooks:

William Stallings: Network Security Essentials Applications and Standards (eTextbook) 6th edition
Prentice Hall, Pearson
ISBN-13: 9781292154916

William Stallings: Network Security Essentials Applications and Standards (eTextbook) 6th edition
Prentice Hall, Pearson
ISBN-13: 9781292154916-AA

Learning Outcome:

- Comment on computer security concepts
- Explain security attacks, security services and mechanisms
- Apply symmetric encryption techniques such as DES, AES
- Demonstrate message authentication
- Apply public-key encryption techniques such as RSA
- Examine Intrusion detection techniques
- Describe password management
- Explain malicious software, viruses, and worms
- Apply security protection using Firewalls
- Use symmetric encryption and public-key encryption to protect data
- Examine system security techniques to protect computer system
- Apply encryption techniques to protect data
- Recommend system security techniques to protect systems

Assessment Strategies:

Continuous Assessment Component	**Weightage (%)**
PRE-CLASS QUIZ	2
QUIZ	6
PRE-CLASS QUIZ	2
TUTOR-MARKED ASSIGNMENT	18
PRE-CLASS QUIZ	2
Sub-Total	**30**

Examinable Component	**Weightage (%)**
Written Exam	70
Sub-Total	**70**

Weightage Total	**100**