SU DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
SYLLABUS (Tentative)
COSC 472 Network Security

Description: The course will study the principles and practice of network security. It covers three areas: security risks and countermeasures, principles of computer cryptography, and applied cryptography in network systems. Topics include the themes and challenges of network security, the role of cryptography, and modern techniques for computer and network security.

Prerequisite: Computer Networks (COSC370) with a grade of C or better

Required Text: "Network Security Essentials", by William Stallings, Prentice Hall, 5th edition, 2010 ISBN: 9780133370430.

References: "*Security in Computing*", Charles P. Pfleeger and Shari Lawrence Pfleeger, 4/e Prentice Hall, "*Network Security: Private Communication in a Public World*", Kaufman, Perlman, and Speciner., 2e. Prentice Hall PTR, 2002
"*Computer Security: Art and Science*", Matt Bishop. Addison Wesley Professional, 2003.

Topics	Weeks
Introduction to Network Security	2.0
Security Architecture, Attacks, Services and Models, Recent Developments	
Concepts of Cryptography	
Modern Symmetric Cryptographic Systems: Principles, Algorithms, Ciphers Public Key	4.0
Cryptography: Principles, Algorithms, Authentication, Hash Functions Basic Number Theory	
Network Security Applications	5.0
Authentication Applications: Kerberos, X.509 Authentication Service E-mail Security: PGP, S/MIME IP Security: IPSec, Virtual Private Networks, IPv6 Security, Mobile IP Security Web Security: SSL, TLS, SET	
System Security	
Intrusion and Intrusion Detection, Viruses and Worms, Firewalls, Denial of Service	2.0
Tests	<u>1.0</u>
	14.0

EVALUATION
Homework, Labs, Programs, and Projects 50%
Tests and Final Exam 50%

NOTE: ONCE A STUDENT HAS RECEIVED CREDIT, INCLUDING TRANSFER CREDIT, FOR A COURSE, CREDIT MAY NOT BE RECEIVED FOR ANY COURSE WITH MATERIAL THAT IS EQUIVALENT TO IT OR IS A PREREQUISITE FOR IT.

EAL/jlh   6/2014