Ceng 471 - Cryptography

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Tentative Agenda

Week	CENG471 Cryptography (Tuesday, 13:30-16:15)
1 (01/10)	Course Introduction - Introduction to Cryptography: Basic Concepts of Cryptography and an overview
2 (08/10)	Classical Cryptosystems: Shift Ciphers, Affine Ciphers, The Vigenere Ciphers …
3 (15/10)	Symmetrical Cryptosystems: DES
4 (22/10)	Symmetrical Cryptosystems: AES
5 (05/11)	**Midterm 1**
6 (12/11)	Number-Theoretic Reference Problems
7 (19/11)	Asymmetrical Cryptosystems Public Key Parameters and RSA,Discrete Logarithms – ElGamal, DHKE etc.
8 (26/11)	Hash Functions and Data Integrity, Digital Signatures
9 (03/12)	Elliptic Curve Cryptography
10 (10/12)	Key Distribution and Management, PKI, X.509
11 (17/12)	**Midterm 2**
12 (24/12)	Modern Cryptosystems Homomorphic Cryptosystems Part 1
13 (31/12)	Untrusted environments and secure operations
14 (07/01)	BlockChain and BitCoin
15 (?)	**Final Exam**

Books:

1) Introduction to Modern Cryptography, Mihir Bellare, Phillip Rogaway, 2005.
2) Handbook of Applied Cryptography, A.Menezes, P.van orschot, S.Vanstone, 1996.
3) An Introduction to Mathematical Cryptography, Jeffrey Hoffstein, Jill Pipher, Joseph H. Silverman, 2008.
4) (from ebrary) Basics of Contemporary Cryptography for IT Practitioners**,** Ryabko, B. Fionov, Andrey, 2005.
5) (from ebrary) Innovative Cryptography 2nd Ed., M. Alex, M. Nick, 2007
6) (from ebrary) User's Guide to Cryptography and Standards, D. Alex, M.Chris, 2004.

Grades

Assignments:	25%
Midterms:	50%
Final:	25%