

Lectures for the course: Electronic Commerce Technology (IT 60104)

Week 1

Lecture 1 – 30/12/2010

- Introduction to the course
- Evaluation guidelines

Week 2

Lecture 2 – 3/01/2011

- Overview of E-Commerce
- E-Commerce vis-à-vis E-Business
- Interplay between E-Commerce and E-Business

Lecture 3 – 4/01/2011

- Electronic Market
- Electronic trade process
- Characteristic features of E-Commerce

Lecture 4 – 6/01/2011

- E-Commerce business models
- Various type of classification of E-Commerce business models

Week 3

Lecture 5 – 10/01/2011

- Recap of topics covered
- B2B E-Commerce characteristics
- Advantages of B2B E-Commerce
- B2C E-Commerce

Lecture 6 – 11/01/2011

- B2C E-Commerce various scenarios
- Steps in B2C E-Commerce
- Various B2C business models
- C2C, C2B, P2P and M-Commerce business models

- Layered architecture of E-Commerce

Lecture 7 – 13/01/2011

- Review of E-Commerce project
- Plan for E-Commerce project development
- Literature survey

Week 4

Lecture 8 – 17/01/2011

- Introduction to cryptography
- Basic terms
- Security violation scenarios
- Types of attack

Lecture 9 – 18/01/2011

- Types of cipher
- Caesar cipher and other basic substitution ciphers
- Attacks on substitution cipher – Letter and bigram, trigram frequencies
- Mono-alphabetic and poly-alphabetic substitution ciphers

Lecture 10 – 20/01/2011

- Review of E-Commerce project
- DFDs
- Project GUIs developed
- Database connectivity
- Research issues identified

Week 5

Lecture 11 – 25/01/2011

- Transposition ciphers
- Symmetric key encryption
- S-DES – overview and key generation

Lecture 12 – 27/01/2011

- Review of E-Commerce project
- Database designs
- GUIs developed

- Password encryption

Week 6

Lecture 13 – 01/02/2011

- DES
- Key generation and encryption
- Strengths and weaknesses

Lecture 14 – 03/02/2011

- Review of E-Commerce project
- Database designs
- GUIs developed

Week 7

Lecture 15 – 07/02/2011

- DES Modes of operation
- Double DES and Triple DES
- Meet in the Middle Attack
- AES overview

Lecture 16 – 10/02/2011

- Review of E-Commerce project
- Flow of operations
- Further improvement
- Plan for incorporating new ideas

Week 8

Lecture 17 – 14/02/2011

- Key distribution in symmetric key cryptography
- Public key cryptography
- RSA – Basic principle and application
- Digital signature application

Lecture 18 – 15/02/2011

- Diffie-Hellman Key exchange

- Digital Certificates
- Application in B2C E-Commerce

Week 9

Mid Sem Exam held

Week 10

Lecture 19 – 28/02/2011

- Mid-sem scripts shown
- Introduction to electronic payment
- Traditional payment schemes
- Requirements for electronic payment schemes

Lecture 20 – 01/03/2011

- Credit card processing steps

Lecture 21 – 04/03/2011

- Review of E-Commerce project
- Plan for new algorithm development

Week 11

Lecture 22 – 07/03/2011

- Basic SSL based credit card transaction for B2C E-commerce
- SET Protocol
- Dual Signature

Lecture 23 – 08/03/2011

- Electronic Funds transfer
- Automated Cheque clearance
- Electronic clearing service

Lecture 24 – 11/03/2011

- Student presentation on dynamic pricing
- Student presentation on recommender systems

Week 12

Lecture 25 – 14/03/2011

- Electronic Cheque Payment
- Electronic Fund Transfer

Lecture 26 – 15/03/2011

- Electronic Cash
- Basic protocol
- Problems in basic protocol

Lecture 27 – 17/03/2011

- Student presentation on game theoretic modeling of auctions
- Student presentation on various types of recommender systems

Week 13

Lecture 28 – 21/03/2011

- Chaum's blinding protocol
- Smart card based payment
- Payment gateways
- Paypal

Lecture 29 – 22/03/2011

- Micropayment for information goods
- Credit card fraud detection (CCFD) – introduction
- Challenges in CCFD

Lecture 30 – 24/03/2011

- Progress on recommender system design and auction system design
- Feedback on methods that can be followed

Week 13

Lecture 31 – 28/03/2011

- Credit card fraud detection using sequence alignment

Lecture 32 – 29/03/2011

- Issues in credit card fraud detection
- Use of multiple rules
- Real life situations experienced by cardholders – known cases of denial of service
- True positive vs. False positive design choice revisited

Lecture 33 – 31/03/2011

- Electronic Data Interchange
- XML for data exchange
- Website design guidelines for B2C and C2C business models

Week 13

Lecture 34 – 04/04/2011

- E-Commerce of multimedia
- E-books
- Audio sales

Lecture 35 – 05/04/2011

- Video on Demand
- IPR Issues
- Technological and business solutions

Lecture 36 – 07/04/2011

- Student presentation on new game theoretic modeling of auction
- Student presentation on recommender system development

Week 14

Lecture 37 – 11/04/2011

- Legal aspects of E-commerce
- IT Act 2000
- 2008 amendments

Lecture 38 – 13/04/2011

- Mobile E-commerce
- Layered architecture
- WAP

Week 15

Lecture 39 – 18/04/2011

- Secure connection in cellular network
- Location of WAP gateway
- Mobile payment systems
- Mobile banking

Lecture 40 – 19/04/2011

- Summary and conclusion