

COMPSCI 314 S1 C

Tutorial Monday, 8 May 06

Week 1

- 1.2: Terminology
 - Modes: simplex, duplex
 - Types: connectionless (packet switched), connection-oriented
 - Quality of Service
- 1.3: Communications Basics
 - Transmission modes: baseband, modulated
 - Media: copper, fibre
 - Transmission control: asynchronous, synchronous
 - Manchester (balanced) encodings
 - Framing: character- and bit-based
- 1.4: Protocol Basics
 - Idle RQ, link utilisation

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Week 2

- 1.4.3-1.4.9: Protocols
 - Continuous RQ, flow control, sequence numbers
 - Network layers
 - Protocol specification, service primitives
 - HDLC
 - IP stack
- 2.1: Telephone Network overview
- 2.2.1-2.2.1:
 - Analog lines
 - PSTN modems (overview only)

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Week 3

- 2.6 Internet Service Providers
 - Broadband modems (not ISDN modems)
- 2.6.4 PPP
 - Link protocol
 - Frame format
 - Byte stuffing using Escape character (01111101, 0x7D)
- A.2.1 Compression Principles

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Week 4

- A.2.2 Text Compression
 - Huffman coding
 - Lempel-Ziv (LZ) coding
 - A.2.3 Image Compression (overview only)
- B Error Detection
 - Parity
 - Block sum (longitudinal parity)
 - CRC
- C Error Correction
 - Hamming codes
 - Convolutional codes (overview only)

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Week 5

- 3.1, 3.2 LANs
 - Ethernet/IEEE802.3
 - Wiring configurations (10Base5, 10Base2, 10BaseT)
- 3.3 LAN Interconnection
 - Repeater hubs, bridging hubs, switching hubs
 - Transparent bridging
- 3.4 High-speed LANs
 - Fast Ethernet (100Base4T)
 - 8B6T, DC balance
 - 100BaseX, 4B5B encoding
 - Gigabit Ethernet
- 3.5 VLANs
 - IEEE 802.1Q

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Week 6

- 3.6 LAN Protocols
 - IEEE 802 protocols, media-independent interface
- Security
 - 10.1-10.2 Encryption, ciphers, DES, triple DES, RSA
 - 10.3 Nonrepudiation
 - 10.4.1 Public-key systems

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Week 7

- 10.4 Authentication
 - IPsec, IKE
- 10.7 Security
 - WEP, 802.11g, 802.11i, ...
- 10.8 Web Security
 - SSL
 - SET

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This evening's test

- 6.25 pm, Monday 8 May
- Test rooms
 - PLT1 (303-G20) 293 Surnames A - L
 - MLT1 (303-G23) 279 Surnames M - Z
- Format of test
 - One-hour test, short answer questions
 - Test covers material presented in lectures for *first half of semester* (i.e. this week's lectures are *not* included)
 - 2005 paper (with model answers) is on 'tests and assignments' course page

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