

## **CSU34031 – Advanced Telecommunications**

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### **Course Details**

- Duration - 12 weeks
- Lectures
  - 3 hrs a week (Mon, Tue & Thur 10-11)
- Assessment
  - Coursework 20%
  - Summer Exam 80%
- Coursework
  - Two project exercises which count for 20% of the marks
- Reference Texts
  - Computer Networking - A Top-Down Approach, 7th Ed., James F. Kurose, Pearson Intl.
  - Understanding Cryptography, Christoff Paar, Springer-Verlag

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## Course Outline

### Part 1 (4 weeks)

- Transport Layer
  - Multiplexing and Demultiplexing
  - Connectionless Transport: UDP
  - Connection-oriented Transport: TCP
  - TCP Congestion Control
- Application Layer
  - Network Application Architectures
  - WWW & HTTP
  - Domain Name System (DNS)
  - P2P Applications
  - Web Applications

## Course Outline II

### Part 2 (6 weeks)

- Network Security & Cryptography
  - Symmetric-Key Cryptography everyone has same key
  - Asymmetric-Key Cryptography Different keys (public/private)
  - Digital Signatures, X.509 Certs & PKI
  - Authentication Protocols
  - Secure Socket Layer (SSL)
  - IPsec
  - DNSSEC DNS is currently quite vulnerable
  - Electronic Payment Systems