

## 3BA3 – Data Communications

- Lecturer: Andronikos Nedos <[nedosa@cs.tcd.ie](mailto:nedosa@cs.tcd.ie)>
- Two semester course:
  - *Operating Systems (12 weeks) (Kenneth Dawson)*
  - *Data Communications/Networking (12 weeks) (Me)*
- Web Resources
  - <http://www.cs.tcd.ie/courses/ba/3ba3/>
  - Slides provided online in PDF form
  - Password protected web pages
    - Username: 3BA3
    - Password: oscomms

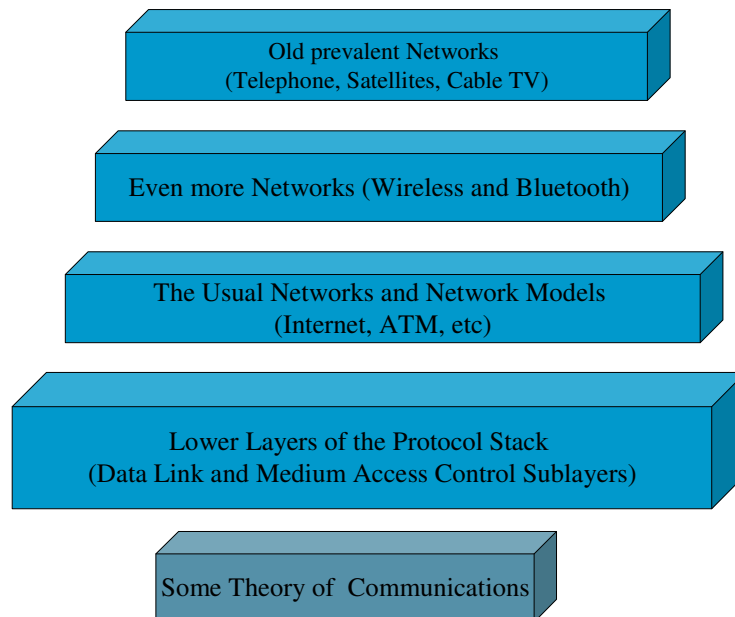
## Course Organisation

- Single Text:
  - Computer Networks (4<sup>th</sup> edition)
    - Andrew S. Tanenbaum
    - 500.17 N691\*3 (4\*counter reserve, 16\*S-LEN)
- Application based
- Coursework
  - 1 Assignments in C++ / Python + 1 Essay ?
  - Multiple Choice Test ?

## Example Applications

- Telephone
  - Voice: Driving factor for most telecommunication systems.
  - Text messaging: Telegraph!! 1-1 asynchronous communication.
  - Images: Images from camera phones (or video conferencing) requires more bandwidth.
- Television: Very different broadcast medium
- Computers: Primarily data transmission
  - Local Networks: Between machines
  - Peripherals: Between devices for a single machine
- Internet: Huge network connecting many machines/fridges/sensors with a number of well defined protocols.

## Course Coverage



# Internet & other examples

- [Internet](#)
- [Network Software](#)
- [Connection Oriented Networks – ATM](#)
- [Reference Models](#)
- [Ethernet & Wireless LANs](#)
- [Theoretical Basis for Communication](#)

# Ethernet

- Introduction
  - [LANs](#)
  - [Ethernet](#)
  - [Coaxial Cable](#)
- [Channel Allocation](#)
- [Multiple Access Protocols](#)
- [Ethernet](#)

## Example Data Link Protocols HDLC & PPP

Course Intro  
Contents

- [Data Link Layer Design Issues](#)
- [Error Detection & Correction](#)
- [Elementary Data Link Protocols](#)
- [Sliding Window Protocol](#)
- [Protocol Verification](#)
- [HDLC & PPP](#)

## Larger Networks

Course Intro  
Contents

- Introduction
  - [MANs, WANs, Internetworks](#)
  - [Fiber Optics](#)
- [Switching](#)

# PSTN

Course Intro  
Contents

- [PSTN](#)
- [Cable Television](#)

# Wireless Networks

Course Intro  
Contents

- [Introduction](#)
- [Wireless Transmission](#)
- [Wireless LANs](#)
- [Broadband Wireless](#)
- [Bluetooth](#)

# Satellites and Mobiles

Course Intro  
Contents

- [Communications Satellites](#)
- [Mobile Telephone System](#)