UG3 Computer Communications & Networks (COMN)

2016-17, Semester 2

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Overview

• Introductory course on Computer Communications & Networks
  – Focus on fundamental concepts, highly successful design principles and widely used techniques

• No pre-requisite courses
• Assumes familiarity and programming (in Java) on Linux platforms

• Is a pre-requisite for UG4/MSc Computer Networking course
• Must be familiar with this course’s material if planning on doing 4th year project on a networking topic
Administrative Details

• Instructor: Myungjin Lee
  – Informatics Forum 1.03

• Teaching Assistant: Davide Pinato
  – Informatics Forum 1.05
  – D.Pinato@sms.ed.ac.uk

• Office Hours: By appointment

• Out-of-class communication
  – Course mailing list: comn-students@inf.ed.ac.uk
  – Q&A via Piazza (https://piazza.com/class/irrw456bufb1in)
  – Meetings with instructor and TA, by appointment
Administrative Details

• When and Where: **Semester 2**
  – Tuesdays and Fridays, 14:10-15:00
  – Lecture venue: G.07 Meadows Lecture Theatre - Doorway 4, Medical School

• Course descriptor
  – [http://www.drps.ed.ac.uk/16-17/dpt/cxinfra09027.htm](http://www.drps.ed.ac.uk/16-17/dpt/cxinfra09027.htm)

• Course webpage
  – Schedule w/ lecture slides, assignments, TA contact info, past exam papers, examinable material, etc.
Activities & Assessment

• Usual two lectures per week
• No formal tutorials
• **Coursework (40% of course mark): one assignment, split in two parts**
  – Will involve programming using Java and socket API
    • Implementation and experimentation of application-level protocols for reliable end-to-end communication
  – Part 1: 30% of coursework mark / 12% of course mark
    • Due by 4pm on Fri, 17th Feb 2017
  – Part 2: 70% of coursework mark / 28% of course mark
    • Due by 4pm on Fri, 24th Mar 2017
• **Exam (60% of course mark)**
  – Past exam papers: [http://www.inf.ed.ac.uk/teaching/exam_papers/](http://www.inf.ed.ac.uk/teaching/exam_papers/)
  – List of examinable material will be provided on course webpage
Syllabus

• **Introduction to Computer Networks, the Internet, TCP/IP architecture and protocols**
  – Protocol, network architecture, reference models, layering, service, interface, multiplexing, switching and standards

• **Application Layer**
  – Network applications (Web/HTTP, e-mail, …) and socket API

• **Transport Layer**
  – Connectionless vs. connection-oriented communications
  – Congestion/flow/error control
Syllabus

• **Network Layer**
  – Routing and internetworking

• **Data Link Layer and Medium Access Control Sub-Layer**
  – Data link protocols, error detection and correction, channel allocation and multiple access protocols, Ethernet

• **Physical Layer**
  – Communication media: copper (twisted pair, coax), fiber
  – Wired broadband Internet access alternatives (ADSL vs. cable modem)
Textbooks

Main text:

Secondary texts:

Courtesy note on course slides:
• Slides borrowed/modified from others
  – Jim Kurose and Keith Ross