

Introduction to ITS 413 - Internet Technologies and Applications

Dr Steve Gordon
ICT, SIIT

Welcome

- To an advanced course on technologies and applications that are used in the Internet
- A 3rd/4th year course for ICT stream and others

Who Am I?

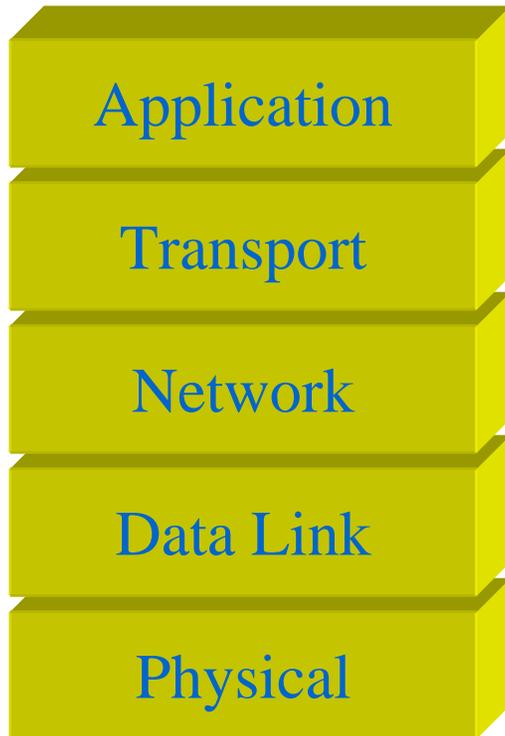
- Steve Gordon
 - Assistant Professor in ICT
- Contact details:
 - Email: steve@siit.tu.ac.th
 - Office: 3610, Bangkadi
 - Phone: ext 2014, Mobile: 0817227288
 - Consultation: anytime
 - Website: <http://ict.siit.tu.ac.th/~steven/>

Topics

Technologies

Mobile/Wireless

Applications



TCP

Internet, QoS,
Multicast

DSL, PSTN,
PDH, SDH,
FTTx

Mobile IP

WLAN, 3G,
WiMax

P2P, BitTorrent
Search, Voice,
Video

Why is ITS 413 Useful?

- It will help you get a job!
 - Designing and writing applications that use the Internet
 - Setting up and managing computer networks
 - Designing and using network software and hardware
- You will have deeper understanding of:
 - Details of network protocols' operations
 - Protocol and algorithm design principles
 - Factors affecting performance and security of networks
 - Directions and challenges for future Internet technologies

Prerequisites

- I assume you have passed:
 - ITS 323 Introduction to Data Communications
 - You may not have completed the co-requisites:
 - ITS 327 Computer Network Architectures and Protocols; or
 - ITS 393 Networking and Collaborative Computing
- And you know:
 - What are computer networks and distributed systems?
 - What are communication protocols?
 - What is the Internet and what are the basic principles of operation, e.g. routing?
 - What are the principles and details of layered communications, e.g. OSI 7 layer stack?
 - What devices are used in networks, e.g. computers, switches, routers, cables?
 - How do basic protocols and algorithms work, e.g. MAC, routing, physical transmission?

Course Structure

- Lectures
 - 3 hours per week
- Self study
 - At least 6 hours per week
 - Browsing lecture notes BEFORE and AFTER class, reading the textbook and other materials, studying for quizzes and exams, preparing assignments, consultations, group discussions, ...
- Assessment

Assessment

- Assignments
 - Set of problems for you to complete over a number of weeks
 - Test your in-depth understanding of concepts and protocols
 - Open book
 - 30%

Assessment

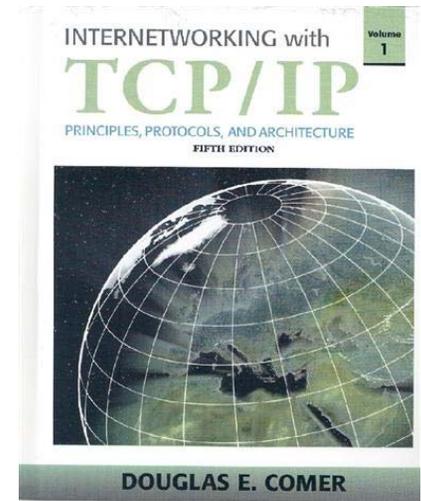
- Mid-term Exam
 - Closed book
 - 35%
- Final Exam
 - Closed book
 - 35%
- For advice:
 - Closed book assessment is not a memory test (e.g. I won't test your knowledge of every header field in every protocol) – it's a test of understanding
 - We will discuss types of questions and topics before exam

Academic Misconduct

- What is it?
 - Plagiarism, cheating, copying, “lending”, ...
- Examples
 - Copying assignment answers from friend (verbal or written)
 - Giving your assignment (or some answers) to a friend
 - Looking at neighbours answers during quiz/exam
 - Copying sentences/paragraphs/code from textbooks/Internet without acknowledgement
- Results
 - If detected, questions or entire assessment item may get 0 marks
- Discussion with friends is encouraged; telling your friends answers is not!

Learning Materials

- Lectures
 - Attend, listen and ask questions!
 - Will include examples and demonstrations
- Lecture notes
 - PDF of Powerpoint slides
 - Available on website and from Copy Centre
 - Make your own notes
- Recommended Textbook
 - Internetworking with TCP/IP by Douglas Comer
 - 5th Edition
- Other Useful Textbooks
 - 3rd and 4th edition of Comer textbook
 - Network textbooks by Stallings, Tanenbaum, Comer, Kurose, ...
 - These other textbooks should only be used as supplementary readings



Learning Materials

- Recommended Readings
 - For selected topics I will list papers/chapters/websites/standards that should be read
 - These will be publicly available on the Internet or available through the Library (electronic or hardcopy)
- Course Website
 - All materials will be available from the website
 - Announcements, selected solutions will be on the website
- Mailing List (access via course website)
 - You must subscribe (as will be used for announcements)

Course Web Site

- <http://ict.siit.tu.ac.th/~steven/its413/>
 - Introduction, Topics, Lecture Notes, Assessment Schedule, Textbooks, Web Links, Extra Handouts, Maillist, ...
 - When you click on Lecture Notes (and other handouts) to download, you will be prompted for a username and password:
 - Username: its413
 - Password: stevecourse