

# Introduction to ITS 323 – Introduction to Data Communications

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ICT, SIIT

# Welcome

- To a first course on the basics of communications and how computer networks work
- A 3<sup>rd</sup> year course for computer scientists and IT professionals
- Course website available from <http://ict.siit.tu.ac.th/>
  - Click on its323 on the left menu
  - You DO NOT need to log in to <http://ict.siit.tu.ac.th/>
  - BUT to download lecture notes you will be *prompted* for username/password:
    - Username: siit Password: stevecourse



# Who Am I?

- Steve Gordon
- Assistant Professor in ICT
- 2001-2006: Researcher/Lecturer in Australia
  - Telecommunications, Internet, Wireless Networks, ...
- Contact details:
  - Email: [steve@siit.tu.ac.th](mailto:steve@siit.tu.ac.th)
  - Office: 2304-7, Bangkadi (IT&MT Building)
  - Phone: ext 2014
  - Consultation: email or phone for appointment



# Prerequisites

- There are no formal prerequisites, but I assume you know:
  - Basic engineering mathematics (waveforms, statistics, ...)
  - Operating system concepts (processes, RPC, ...)
  - Software design principles (divide-and-conquer, functions, ...)
  - Programming languages (e.g. C, C++, Java or similar)



# What will you learn in ITS 323?

- Components of computer networks
- Transmission techniques
  - How are bits transferred from source to destination over different mediums
- Communication protocols: principles and details
  - Protocol mechanisms: retransmissions; error detection; flow control; ...
  - Details of common/important protocols: HDLC, Ethernet, TCP, IP, ...
- Internet architecture and applications
  - What is the Internet and how do applications work?



# Why is ITS 323 Useful?

- It will help you get a job!
  - ISPs (Pacific, True), Telecommunication companies (CAT, TOT, AIS), service companies (IBM, HP), equipment manufacturers (Toshiba, Cisco), small to large businesses (e.g. as network manager/engineer),  
...
  - Designing and writing Internet applications
  - Managing computer networks
  - Designing and managing telecommunication systems
- Prerequisite to other courses:
  - Computer Network Architectures and Protocols
  - IT Lab III (Networking)
  - Internet Technologies and Applications
- You will have an understanding of:
  - The principles of telecommunication systems
  - Details of popular Internet protocols and systems
  - Principles of building networks



# Course Structure

- Lectures
  - 4 hours per week
  - No lectures during Universiade
- 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

- Quizzes
  - 10 minute quizzes at the beginning of selected lectures
  - Cover the topics since the last quiz
  - Test your understanding of lectures, reading materials and homework problems
  - Closed book
  - 6 quizzes; 5 best marks will count
  - 20% total (4% each)
- Assignments
  - Set of problems for you to complete over a number of weeks
  - Test your in-depth understanding of concepts and protocols
  - Open book
  - 20%



# Assessment

- Mid-term Exam
  - Test your knowledge and understanding of all material to date
  - Use as practice for final exam
  - Closed book
  - 25%
- Final Exam
  - Closed book
  - 35%
- For advice:
  - Closed book assessment is not a memory test (e.g. I won't test your ability to remember header formats) – it's a test of understanding
  - We will discuss types of questions and topics before exam



# Schedule (see website)

Item	Date	Weight
<b>Quizzes</b>		<b>20%</b>
- Quiz 1	19/6, 21/6	4%
- Quiz 2	2/7, 2/7	4%
- Quiz 3	10/7, 12/7	4%
- Quiz 4	4/9, 6/9	4%
- Quiz 5	17/9, 17/9	4%
- Quiz 6	25/9, 27/9	4%
<b>Assignments</b>		<b>20%</b>
- Assignment 1	27/8	10%
- Assignment 2	18/9	10%
<b>Exams</b>		<b>60%</b>
- Mid-term Exam	19/7	25%
- Final Exam	11/10	35%



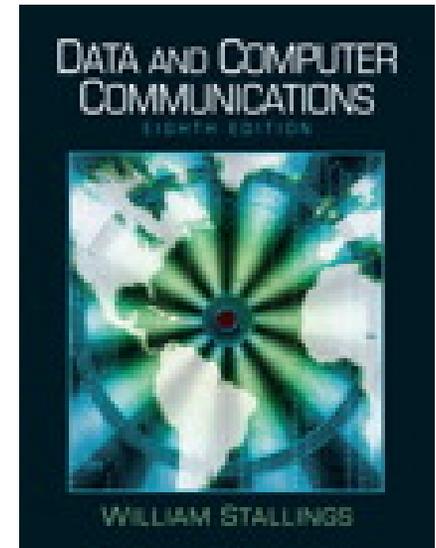
# Academic Misconduct

- 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
  - Aim to have available 1 day before lecture
  - Make your own notes
- Recommended Textbook
  - “Data and Computer Communications” by Stallings
  - 8<sup>th</sup> Edition (90% of my content is based on this)
- Other Useful Textbooks
  - Earlier editions of Stallings textbook
  - These other textbooks should only be used as supplementary readings



# Learning Materials

- Recommended Readings
  - Almost every lecture corresponds to a chapter in the Stallings textbook; it is recommended you read the chapter before the lecture
- Homework Problems
  - Stallings textbook contains useful practice homework problems; try to solve them!
- 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)

