# SE 4C03 Winter 2006

# 00 Preliminaries

Instructor: W. M. Farmer

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# Instructor

Dr. William M. Farmer

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# Teaching Assistant

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# Mission

The Internet has revolutionized science, technology, and culture and has elevated information security to a major societal concern. The mission of the course is to teach students the underlying principles of internetworking and information security. The student will learn how the Internet works and what are its strengths and weaknesses. The course will discuss the threats to the security of computers and networks and the techniques that can be used to counter these threats. The discussion will include physical networks, the TCP/IP protocol suite, common network services, information security measures, and applications of cryptography.

# Work Plan

- Lectures by instructor

- Five lab exercises during Tuesday lab sessions
  - Done in teams of two or three
  - Performed on an experimental "Little Internet"

- Research project outside of class
  - Done individually
  - Purpose is to investigate an important topic or a new technology
  - Products: proposal, 2-page paper

- Midterm test during class time on Friday, February 17

- Final exam on the date scheduled by the University

# Mechanics

- Course web site:

  `http://www.cas.mcmaster.ca/˜wmfarmer/SE-4C03-06/`

- Required text:

  D. E. Comer, *Internetworking with TCP/IP, Vol. 1, Fifth Edition*, Prentice Hall, 2005. ISBN: 0131876716.

- Teaching assistant will:

  – Provide assistance during lab sessions
  – Mark lab exercises
  – Answer questions concerning the course material

- Each student is required to keep a log book

# Academic Dishonesty

- Academic dishonesty consists of misrepresentation by deception or by other fraudulent means

- Includes:
  - Plagiarism
  - Copying
  - Improper collaboration

- Academic dishonesty can result in serious consequences

- Your work must be your own. Plagiarism and copying will not be tolerated!

- Students may be asked to defend their written work orally

# Other Policy Statements (1)

1. Significant study and reading outside of class is required.

2. Regular class attendance is required.

3. The student is expected to ask questions during class.

4. You may want to discuss the assignments with your fellow students. **If you do that, you must record a summary of your discussions in your log book including a list of all those with whom you had discussions and a description of what information you received.** It is part of your professional responsibility to give credit to all who have contributed to your work.

5. A student may use his or her texts and notes during the midterm test and final exam.

# Other Policy Statements (2)

6. The instructor reserves the right to require a deferred final exam to be oral.

7. Assignments may not be submitted late and the midterm test may not be taken later without **prior** approval from the instructor.

8. Calculators and electronic devices are **not** permitted during the midterm tests and final exam.

9. Suggestions on how to improve the course and the instructor's teaching methods are always welcomed.

# Grading

| | |
|---|---|
| Lab Exercises (5) | 20% |
| Project (proposal and paper) | 20% |
| Midterm test | 20% |
| Final exam | 40% |
| **Total** | **100%** |

1. **A student who fails the final exam automatically fails the course.**

2. The project papers will be formally assessed by the class.

3. The instructor reserves the right to adjust the marks for an assignment, midterm test, or final exam by increasing or decreasing every score by a fixed number of points.

# Syllabus

01  Physical Networks [chapter 2]

02  The Internet Model and TCP/IP [chapters 1, 3]

03  Internet Addressing [chapters 4, 5, 9]

04  Internet Protocol (IP) [chapters 6–8]

05  Transport Protocols [chapters 10–12]

06  Information Security [chapter 30 and notes]

07  Overview of Cryptography [notes]

08  Interaction Schemes [chapters 18–21]

09  Common Network Services [chapters 23–27]

10  Defense Mechanisms [chapter 30 and notes]