



IT495: High-Speed Networks

Spring 2016

Course Staff

Lecture Time: Sunday 12:45 – 2:00 PM (Hall 9)
Monday 11:15 – 12:30 AM (Hall 8)

Course Instructor: Dr. Haitham S. Hamza

Email: courses@ansr.cu.edu.eg

Office Hours: Sunday 2:30 – 3:30 PM
Monday 2:30 – 3:30 PM

Teaching Assistants: TBA

Course Objective

This course introduces students to the fundamental concepts of broadband high-speed networks. The course covers the core concepts of Internet and broadband technologies and protocols. In addition, it exposes students to various issues and techniques in analyzing the performance of broadband and high-speed networks.

Suggested References

1. Larry L. Peterson and Bruce S. Davie. Computer Networks: A Systems Approach. Morgan Kaufmann Publishers, 4th Ed. 2007.
2. William Stallings. High-Speed Networks and Internets: Performance and Quality of Service, 2nd Ed, Prentice Hall, 2002.
3. William Stallings. Data and Computer Communications. Prentice-Hall, Inc., 5th Ed., 1997.
4. Andrew S. Tanenbaum. Computer Networks. Prentice-Hall, Inc., 3rd Ed., 1997.

Grade Distribution

The overall course grade is distributed as follows:

Homework Assignments	5 %
Quizzes	10 %
Midterm Exam	25 %
Final Exam	60 %

Grade letters will be calculated according to grading system published on the faculty webpage:
<http://www.fci-cu.edu.eg/?pg=academic/gba.htm>

Ground Rules

The following rules are strict in order to ensure quality learning and fairness to all students:

- Homework assignments must be submitted on the due date in lecture. A **25 % per day** will be deducted for late homework. Under no circumstances a homework assignment shall be accepted after Thursday of the due week.
 - Homework assignments must be submitted in a neat and clean format. The instructor and/or the TA reserve the right to reject any homework assignment that is not deemed appropriate.
 - No make-up exams will be conducted expect for urgent medical circumstances. In such a case, the student must represent the official paper work from the university health center about her/his situation.
 - You **MUST** attend in your lab. Attendance in another lab with out my permission will not be counted towards your grade.
 - To dispute grades, students must first discuss their grades with the course TA before contacting the instructor.
 - You **MUST** read the **Code of Ethics for FCI Students**:
http://www.fci-cu.edu.eg/Code_of_Ethics_Students
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Course Outline

The following is a **tentative** course outline and is subject to change.

- Course Description and Introduction to High-Speed Networks
- Protocols and Network Layered Architectures
- Switching and Multiplexing Techniques
- Design Issues in High-Speed Routers
- High-Speed Switch/Router Types and Architectures
- Design and Analysis of High-Speed Switching Fabrics
- Introduction to Queuing Theory
- Network algorithms

OPNET can be downloaded for free from the following link:

http://www.opnet.com/university_program/itguru_academic_edition/
