

ECE462: Data and Computer Communications

Fall 2008

Instructor: Dr. Ali Zadeh

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Course Description: This 3-credit course introduces students to the fundamental concepts in modern data communications and computer networks. Topics include:

- point to point communication links and transmission of digital information, modems and codecs, packet switching, multiplexing and concentrator design, multi-access and broadcasting, local area networks, and wide area networks.
- The architectures and protocols for computer networks and the concept of OSI reference model
- OSI seven layers; physical interfaces and protocols, data link control layer, network layer.

Prerequisite: STAT 346 or 344 or permission of instructor.

Required Textbook: Behrouz A. Forouzan, *Data Communications and Networking*, Forth Edition, ISBN-13: 978-0-07-296775-3, ISBN-10 0-07-296775-7

Course Policies:

□ Grading for the course will be based on the following:

Midterm exam	30 %
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Final exam	35 %
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Homework	15 %
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Quiz	20 %
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- All exams will be closed notes, closed book, only calculators will be allowed. Make sure to bring a calculator. **Calculator sharing will not be permitted during any exam.**
- Students without proper identification (Student ID, Drivers license, etc) **will not be admitted** to any exam.
- No student will be allowed to leave the classroom within the first 30 minutes of **any** exam.
- The final exam will be **comprehensive**, with an emphasis on the latter part of the course.

- ❑ Quizzes may be administered at any time during the lecture. It is highly encouraged that you are always prepared for these quizzes.
- ❑ **Although attendance will not be recorded, it is assumed that you will attend all classes.** It is imperative that you do so, as materials not present on the lecture slides will also be covered in class.
- ❑ All course materials may be accessed by visiting <http://courses.gmu.edu>
- ❑ Important announcements may be posted on Blackboard so please make sure to follow the bulletin board periodically. The bulletin board on Blackboard may also be used for discussions between students.
- ❑ There will be weekly homework that are strictly due on the specified due date. The homework assignment will be posted on Blackboard. **Late submissions or homework via email will not be accepted except under highly legitimate circumstances.** Please do not hand in the homework after class has started. Wait until after the lecture is over to hand in homework if you are late for class.
- ❑ The lecture slides are posted on Blackboard. **It is highly advised that you print these notes and bring them to class. It is also advised that you go over these notes as well as read the respective chapters that will be covered in class beforehand.**
- ❑ All students are under the [Honor code](http://honorcode.gmu.edu). Please make sure you read the code to resolve any uncertainties. **Any violation of the code will not be tolerated at any time.** You may find honor code guidelines from the following link: <http://honorcode.gmu.edu>
- ❑ You may direct your questions to the instructor or to the Teaching Assistant during regular office hours. You may also request an appointment to meet with the instructor/TA if you are unavailable during these office hours.
- ❑ Make-up exams will only be given to students with highly legitimate excuses. **You must present solid proof of your reasons to do so in advance.**
- ❑ Students with special requests/circumstances need to contact the instructor within a week after these special circumstances arise.
- ❑ Students with disabilities should contact the Office of Disability Services (ODS) as soon as possible. Only registered students with ODS will be provided various accommodations by the Professor as outlined by the ODS. You may contact the ODS by visiting the following link: <http://ods.gmu.edu>
- ❑ Cell phones and pagers **must** be turned off during the lecture.
- ❑ Eating and surfing on the Internet during class time is not permitted.
- ❑ **Class participation is highly encouraged** and fosters an interactive classroom environment.
- ❑ The last day to drop the course with no tuition liability is September 9th. The last day to drop with 100% tuition liability is September 26th. Please check the GMU academic calendar for further information: <http://registrar.gmu.edu/calendars/Fall08calendar.pdf>
- ❑ It is very important for you to make sure you understand everything at the end of each lecture. **Please do not hesitate to ask questions in class.** Since there are a wide variety of topics covered in this course, it is also very important that you go over the materials after each class to make sure you fully understand the concepts. Do not wait until the exam to go over the materials.

Wishing you a great semester!

ECE462: Tentative Course Calendar and List of Topics by Week:

Date	Topics	Chapter Readings
Mon 25-Aug	Overview of Syllabus	
Wed 27-Aug	Introduction to Data Communications	Chapter 1
Mon 01-Sep	No Class, Labor Day	
Wed 03-Sep	OSI Network Model	Chapter 2
Mon 08-Sep	Physical Layer: Data and Signals	Chapter 3
Wed 10-Sep	Data and Signals (Cont'd)	Chapter 3
Mon 15-Sep	Digital Transmission	Chapter 4
Wed 17-Sep	Analog Transmission	Chapter 5
Mon 22-Sep	Bandwidth Utilization: Multiplexing & Spreading	Chapter 6
Wed 24-Sep	Transmission Media	Chapter 7
Mon 29-Sep	Switching	Chapter 8
Wed 01-Oct	Using Telephone and Cable Networks for Data Trans.	Chapter 9
Mon 06-Oct	Data Link Layer: Error Detection & Correction	Chapter 10
Wed 08-Oct	Midterm Exam Review	
Tue 14-Oct	Mid-Term Exam	
Wed 15-Oct	Error Detection & Correction (Cont'd)	Chapter 10
Mon 20-Oct	Data Link Control	Chapter 11
Wed 22-Oct	Data Link Control (Cont'd)	Chapter 11
Mon 27-Oct	Multiple Access	Chapter 12
Wed 29-Oct	Multiple Access (Cont'd)	Chapter 12
Mon 03-Nov	Wired LANs: Ethernet	Chapter 13
Wed 05-Nov	Connecting LANs, Backbone & Virtual LANs	Chapter 15

Mon 10-Nov	SONET/SDH	Chapter 17
Wed 12-Nov	Virtual Circuit Network: Frame Relay and ATM	Chapter 18
Mon 17-Nov	Network Layer: Logical Addressing	Chapter 19
Wed 19-Nov	Logical Addressing (Cont'd)	Chapter 19
Mon 24-Nov	Internet Protocol	Chapter 20
Wed 26-Nov	No Class on Wed., Thanksgiving Recess	
Mon 01-Dec	Overview of Routing	Chapter 22
Wed 03-Dec	Final Exam Review	
Mon 08-Dec	Reading Day	
Wed 10-Dec	Final Exam, 4:30 p.m.-7:30 p.m.	