RU ENG ECE 16:332:543
Communication Networks I

Fall 2014

HOME PAGE

http://www.ece.rutgers.edu/~marsic/Teaching/CN1/

Lecture Schedule, Homeworks, and Exams

Instructor:

Ivan Marsic
Office hours: Tuesday 3:30 – 4:30 p.m.
(Appointments other than office hours have to be requested by email with the subject of appointment explained.)
Room 711, CoRE Building
Phone: (848) 445-6399
Web: http://www.ece.rutgers.edu/~marsic/

Grader:

Young Lee
Email: apple205@scarletmail.rutgers.edu
Office: CoRE-731
To discuss grading issues, request a meeting by email.

Lectures:

Tuesday: 5:00 – 8:00 p.m. in SEC-117

Course Description:

This course serves as an introduction to analytical techniques for computer networks, particularly network performance modeling and analysis.
Topics: Point-to-point protocols. Multiaccess communication. Delay and blocking analysis. Queueing network analysis. Routing Algorithms.

Prerequisites:

Undergraduate knowledge of probability.

Textbook:

Dimitri Bertsekas and Robert Gallager: *Data Networks*, 2nd ed.
Prentice Hall, Upper Saddle River, NJ, 1992.
ISBN 0-13-200916-1
Book information at: http://www.pearsonhighered.com/educator/product/Data-Networks/9780132009164.page
Amazon: http://www.amazon.com/Data-Networks-2nd-Dimitri-Bertsekas/dp/0132009161/

Course Lecture Notes:

- Computer Networks · Performance and Quality of Service
- Wireless Networks

Online Readings:

- T.B.A.

Team Projects:

Two types of projects are included in this course:

- Wireshark labs, description provided **here**.
- TCP congestion simulation project, description provided **here**.

Grading: (subject to change)

Wireshark Labs: 30%
TCP Project: 30%
Final exam: 40%

All exams are *open book*, meaning that the students can have access to the textbook or any other paper-based materials.
No cell phone, laptops, or other networked devices are allowed at the exams for two reasons:

1. to avoid student collaboration during the exam
2. to deny unfair advantage for students using a digital textbook to do quick searches for the exam topics.

Please do not inquire about exceptions, because none will be allowed.
No discussion is allowed among the students during the exam. Such students shall be asked to leave the classroom.
Please remember to bring your own calculator to the exam.

All assignments should be prepared using a word processor. Handwritten assignments or those containing handwritten material (e.g., figures, tables, etc.) will *not* be accepted.

Requests for grade review will be considered no later than *four weeks* after notification of the grade.

Collaboration / Academic Honesty:

It is reasonable to discuss with others possible general approaches to problems. It is unreasonable to work together on a detailed solution, to copy a solution, or to give away a solution. Such instances of academic dishonesty will result in a course grade of F or expulsion from Rutgers University.
Students are expected to familiarize themselves with and adhere to the University policy on academic integrity.

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Maintained by: *Ivan Marsic*

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Make every effort to form your project team (3 students) before **September 8, 2014** and notify the instructor by email, listing the team members and their emails. After this date, the students without a team will be randomly assigned a team.

Wireshark Projects	
Item	**Due date**
1. WS Project 1	September 18
2. WS Project 2	October 2
3. WS Project 3	October 26
4. WS Project 4	November 23

TCP Project Deliverables	
Item	**Due date**
1. Software design	October 19
2. Software demo	December 2
3. Final report	December 8

Lecture Schedule -- subject to change

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Sep
    2 (Tue)   Overview of computer networking   (Lecture notes: Ch. 1)
    9 (Tue)   Overview of TCP   (Lecture notes: Ch. 2)
   16 (Tue)   Network Traffic   (Lecture notes: Sec. 3.1, 3.2)
   23 (Tue)   Integrated and Differentiated Services   (Lecture notes: Sec. 3.3)
   30 (Tue)   Media Transport Protocols   (Lecture notes, Sec. 3.4)

Oct
    7 (Tue)   Packet Switching and Queuing in Routers   (Lecture notes: Sec. 4.1, 4.2)
   14 (Tue)   Network Measurement
   21 (Tue)
   28 (Tue)   Probability Theory Refresher;  Markov Chain Theory   (Bertsekas & Gallager: Appendix A, page 259 )

Nov
    4 (Tue)   M/M/1 Queues;  M/G/1 Queues   (Bertsekas & Gallager: Sec. 3.3 - 3.5)
   11 (Tue)   Networks of Queues   (Bertsekas & Gallager: Sec. 3.6 - 3.8)
   18 (Tue)   ******* Wireshark project presentations   (in regular classroom SEC-117) *******
   25 (Tue)   Changes in Designation:  Tues Nov 25 ← Thursday Classes
         (Thanksgiving Recess: Thurs Nov 27 — Sun Nov 30)

Dec
    2 (Tue)   ******* TCP project presentations   (in regular classroom SEC-117) *******
    9 (Tue)   Aloha Protocol Analysis   (Bertsekas & Gallager: Sec. 4.2)
       (Regular Classes End: Wed Dec 10 || Fall Exams End: Mon Dec 22)

   T.B.D. ******* FINAL EXAM *******
                Time      T.B.D.
                Location  T.B.D.
                Please bring calculator and the textbook to the exams.
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Ivan Marsic

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