

SYLLABUS

TDC 562

Computer-Communications Network Design and Analysis

Spring Quarter 2014

Instructor: Greg Brewster
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Required Text: TCP/IP Illustrated, Volume 1, 2nd Edition: The Protocols, Kevin R. Fall, W. Richard Stevens, Addison-Wesley, 2012.

This course provides an in-depth study of Internet protocols from the perspective of network performance, simulation and troubleshooting. The course includes in-depth study of traffic measurement techniques, performance management, network planning and design using simulation tools and analysis.

Required coursework components and their contribution to the final grade will be:

- (a) 4 homework assignments (35%)
- (b) 3 lab assignments (25%)
- (c) Class Presentation (20%)
- (d) Simulation Project (20%)

Homework and lab assignments must be completed individually. Any students who submit identical solutions or solutions that are clearly copied and modified will lose credit for these components. Assignments received late will be penalized as follows: up to 1 day late is 20% penalty; up to 2 days late is 30% penalty; more than 2 days late results in no credit for the particular assignment.

Class Presentations will require students to research assigned performance evaluation topics and present results in a 10-15 minute presentation. The Project assignment will be a detailed OPNET simulation of a specific network layout, with presentation of results. Class participation will be based on contributions to online discussion boards, as discussed in class. The Class Presentation assignment will be handed out in Week 3 and presentations will occur in weeks 7-9. The Simulation Project assignment will be given out in Week 6 and will be due Monday, June 4th.

TDC 463 is a prerequisite for this course. It will be assumed that you already know about Ethernet and IP addressing, subnetting and routing.

Class Schedule

TDC 562

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<i>Date</i>	<i>Topics</i>	<i>Readings</i>	<i>Assignments</i>
Mar. 31	Introduction, Review of IPv4 and IPv6, ARP and ND, Packet capture and analysis	Ch. 1, 2.1-2.5, 4, 5.1-5.4, 8.5	
Apr. 7	NAT, ICMP, Performance measurement tools. Analysis of results	Ch. 7.1-7.6, 8.1-8.4, 10	HW #1 out
Apr. 14	TCP performance measurement and tuning	Ch. 12, 13.1-13.4, 14, 15, 16	Lab #1 out HW #2 out Class Presentations Assignment out <i>HW #1 due 4/17</i>
Apr. 21	More TCP, Performance Management, Introduction to Simulation and OPNET	Handouts	Lab #2 out <i>HW #2 due 4/24</i>
Apr. 28	Characterizing system parameters using OPNET		Lab #3 out <i>Lab #1 due 5/1</i>
May 5	Further parameterization of Simulations, Intro to Analytical Models		Simulation Project Out <i>Lab #2 due 5/8</i>
May 12	Basic Queues and Loss Systems	Handouts	HW #3 out <i>Lab #3 due 5/15</i>
May 19	Queueing Networks		HW #4 out <i>HW #3 due 5/22</i>
May 26	NO CLASS – Memorial Day		<i>HW #4 due 5/19</i>
June 2	Class Presentations		
June 9	Simulation Projects Due		Projects Due

Course Policies

Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under Announcements in D2L or COLWeb and sent via email.

Online Course Evaluations

Evaluations are a way for students to provide valuable feedback regarding their instructor and the

course. Detailed feedback will enable the instructor to continuously tailor teaching methods and course content to meet the learning goals of the course and the academic needs of the students. They are a requirement of the course and are key to continue to provide you with the highest quality of teaching. The evaluations are anonymous; the instructor and administration do not track who entered what responses. A program is used to check if the student completed the evaluations, but the evaluation is completely separate from the student's identity. Since 100% participation is our goal, students are sent periodic reminders over three weeks. Students do not receive reminders once they complete the evaluation. Students complete the evaluation online in [CampusConnect](#).

Academic Integrity and Plagiarism

This course will be subject to the university's academic integrity policy. More information can be found at <http://academicintegrity.depaul.edu/>. If you have any questions be sure to consult with your professor.

Academic Policies

All students are required to manage their class schedules each term in accordance with the deadlines for enrolling and withdrawing as indicated in the [University Academic Calendar](#). Information on enrollment, withdrawal, grading and incompletes can be found at: cdm.depaul.edu/enrollment.

Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential.

To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at: csd@depaul.edu.

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