ECE540 Advanced Computer Networks

Course Syllabus

Course Description:

Research, design and implementation of computer networks. This class will allow students to develop knowledge and expertise in computer networks, mobile communication and wireless networks, multimedia networks, network security and management, and state-of-art Internetworking solutions.

Course Instructor	Dr. Wei Wennie Shu	wshu@unm.edu

Textbook and Supplemental Materials

Required:

- ✓ Computer Networking: A Top-Down Approach Featuring the Internet, James Kurose and Keith Ross, 7th edition, ISBN 978-0133594140, Pearson, 2016.

Course Objectives

Course Objectives and Module Objectives are very important for you to know. The following are the objectives for the course, each module will have specific learning objectives listed on the Weekly Overview Page. All Module Objectives are designed to help you meet the Course Objectives. The activities in that module, discussions, assignments and assessments are developed so that you can demonstrate that you have met these objectives. Please pay close attention to them, as they are what is expected for you in this course. Upon completion of this course, students will be able to:

C1. Explain and examine fundamental concepts of computer networks both wired and wireless, together with associated models, protocols, and algorithms.

C2. Evaluate and criticize different design schemes to apply to layers in the network architecture.

C3. Define networking performance metrics and characteristics, and describe tradeoffs in the performance-oriented design choices.

Prerequisites and Co-requisites

ECE440 or equivalent

Specific Course Requirements and Technical Requirements

About Computer and Operating Systems

- A high speed Internet connection is highly recommended.

- Supported browsers include: Internet Explorer, Firefox, and Safari. Detailed Supported Browsers and Operating Systems: http://online.unm.edu/help/learn/students/
- Any computer capable of running a recently updated web browser should be sufficient to access your online course. However, bear in mind that processor speed, amount of RAM and Internet connection speed can greatly affect performance.
- Some course work will require programming and applications in LINUX-based systems, such as script language for data processing, network simulations tools.

About Web Conferencing

- Web conferencing will be used in this course. More details will be provided in the course.
- You will need a USB headset with microphone.
- A high-speed internet connection is highly recommended for these sessions. A wireless Internet connection may be used if successfully tested for audio quality prior to web conferencing.
- We highly recommend the Firefox browser when using Web Conferencing. Web Conferencing and Media Support
  +1 505-277-0857 (M-F 8am-5pm)
  +1 877-688-8817, learn@unm.edu

Procedures for Completing Coursework

All written work needs to be submitted online. If you have a difficulty using a tool to complete work, for the purposes of this course, please contact UNM Learn Student Technical Support.

UNM Learn automatically records all students' activities including: your first and last access to the course, the pages you have accessed, the number of discussion messages you have read and sent, web conferencing, discussion text, and posted discussion topics. This data can be accessed by the instructor to evaluate class participation and to identify students having difficulty.

Course Timing

- All modules, except for Module 1, will open on Wednesdays and be available throughout the week ending on the following Tuesday.
- The course due dates will usually fall on both Fridays and Wednesdays or be specified in each Module. Check the course schedule for a full list of due dates.
- Module 1 will be open on Monday as we ask you to complete some orientation activities during the first two days of the course.
- We expect that this course will take approximately 12-15 hours of time per week.

Instructor Response Time

We routinely check the course for postings or emails, Monday – Friday (8 – 5) and try to watch for emergencies on the weekend. We will try our best to response to your questions within 30 hours Monday – Thursday.

Assignments

Please see the Course Schedule within the course for more details.
Note: Your end of course assignment (in Module 08) will be to take part in our Paper Presentation. In order to utilize what you've learned, we will have you select a technical paper to read, understand, criticize and create a brief screen capture of your presentation which you will upload into the LEARN to share with all of your colleagues. More details will be provided in the course.

Grading

Weeks	Grading Items	Percentage	Notes
Module 1	Assignment	2%	
Modules 2-4	Assignments	22%	*6-9% for each module*
	Exam I	18%	
Modules 5-7	Assignments	22%	*6-9% for each module*
	Exam II	18%	
Module 8	Paper Presentation	18%	
Total		**100%**	

- **Final letter grade ---** Below is a *general guideline* for assignment of final letter grades based on the percentage of points received, and in accordance with the weighting of different course components described above.

≥ 93%	A
≥ 88%	A-
≥ 83%	B+
≥ 78%	B
≥ 73%	B-
≥ 68%	C+
≥ 60%	C
< 60%	Fail

These are general guidelines rather than rigid grade assignments. There are no extra-credit opportunities in this class.

Netiquette

- In following with the UNM Student Handbook, all students will show respect to their fellow students and instructor when interacting in this course. Take Netiquette suggestions seriously. Flaming is considered a serious violation and will be dealt with promptly. Postings that do not reflect respect will be taken down immediately.
- This course encourages different perspectives related to such factors as gender, race, nationality, ethnicity, sexual orientation, religion, and other relevant cultural identities. The course seeks to foster understanding and inclusiveness related to such diverse perspectives and ways of communicating. To support this, respect must be shown.

- Link to Netiquette document: http://online.unm.edu/help/learn/students/pdf/discussionnetiquette.pdf

UNM Policies

- **Copyright Issues** - All materials in this course fall under copyright laws and should not be downloaded, distributed, or used for any purpose outside this course..
- **Accessibility** - The American with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodations of their disabilities. If you have a disability requiring accommodation, please contact me immediately to make arrangements as well as Accessibility Services Office in 2021 Mesa Vista Hall at 277-3506 or http://as2.unm.edu/index.html. Information about your disability is confidential.
- **Academic Misconduct** - You should be familiar with UNM's Policy on Academic Dishonesty and the Student Code of Conduct (https://pathfinder.unm.edu/campus-policies/academic-dishonesty.html) which outline academic misconduct defined as plagiarism, cheating, fabrication, or facilitating any such act.

UNM Resources

- **CAPS Tutoring Services** http://caps.unm.edu/programs/online-tutoring/ - CAPS is a free-of-charge educational assistance program available to UNM students enrolled in classes. Online services include the Online Writing Lab, chatting with or asking a question of a Tutor.
- **UNM Libraries** http://library.unm.edu
- Student Health & Counseling (SHAC) Online Services http://online.unm.edu/help/learn/support/shac