INTRODUCTION TO WIRELESS COMMUNICATIONS
CSCE 4510/5510
Spring 2017

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COURSE DESCRIPTION
The objective of this course is to provide an overview of the broad field of wireless communications. All forms of wireless communications such as cellular and local and personal area networks will be comprehensively covered in this course. Topics such wireless communication techniques, protocols and medium access control to form wireless networks, deployment and system management to coordinate the entire set of devices that compose wireless systems will be discussed.

COURSE OUTCOMES
1. Understand channel capacity.
2. Understand antennas, propagation, and satellites.
3. Understand signal-encoding techniques.
4. Understand spread spectrum communication and CDMA.
5. Understand coding and error control.
6. Understand cellular network design.
TEXTBOOK
Wireless Communication Networks and Systems
Cory Beard and William Stallings
Pearson, 2016

PRE-REQUISITES: CSCE 3510

TOPICS TO BE COVERED
1. Fundamentals of Communication Networks
2. Wireless Communications
3. Signal Encoding
4. Channel Encoding
5. Multiplexing Techniques
6. Wireless LAN and PAN
7. Cellular Networks and LTE
8. Long Range Communications

SCHEDULE AND GRADING
Homework: 25%
Programming Assignment: 15%
Midterm 03/08: 20%
Final Exam 05/10: 25%
Paper Presentation/Project: 15%
Notes:

ATTENDANCE POLICY
Student attendance will be recorded. Every student who misses a class is responsible to learn the materials discussed and obtain the homework assigned on the missed class. The instructor is not responsible for re-teaching the material missed by a student who did not attend the class. Absence in class and lack of participation in class discussions may result in lowering of the grades.

ASSIGNMENTS
Homework and assignments will be provided throughout the semester and posted on Blackboard Learn. Electronic submission on Blackboard Learn of your solutions/answers by scanning or taking a clear picture is preferred. You will lose 25% points if you are late by a day to turn in your assignments. You will get only half of the points if you turn in the assignments up to a week late. Assignment turned in after a week without instructor’s approval will receive zero points. It is expected of the students to show utmost sincerity and honesty in completing their assignments. While discussion among students is encouraged, sharing solutions and copying someone else’s work is strictly prohibited. Any student engaged in such activities will get no credit for their assignment. MATLAB assignments will be provided as programming assignments throughout the semester.

MIDTERM EXAM
The midterm exam will be conducted during regular class hours. The exams will cover the topics discussed up to 1 week ahead of the exam date. The students are expected to give the exams on their own and no discussions will be allowed. The format of the exam will be provided at least two weeks before the exam date.

FINAL EXAM
The final exam will be scheduled on the finals week. The exams will cover the topics discussed throughout the semester. The students are expected to give the exams on their own and no discussions will be allowed. The format of the exam will be provided at least two weeks before the exam date.
PAPER PRESENTATION

Students are expected to read a research paper in their area of interest in wireless communications and present a detailed written report at the end of the semester. The publication date of the paper must be 2015 or newer. The students need to select the research paper they want to present by 02/13. Undergraduate students are permitted to choose a different project instead of a paper presentation with instructor’s approval.

GRADING

If the students are not satisfied with their grades, they will have to schedule an appointment with the instructor at least 24 hours after receiving the grades. Classroom hours will not be used for discussing grades. Students are expected to keep track of their academic progress, grades will not be changed after 2 weeks of being provided.

EXTRA CREDIT

The students will get an opportunity to earn extra credit by solving take-home problems. The students are expected to solve the problems on their own. Any evidence of cheating will result in zero credit and no further opportunities to earn extra credit.

ADA STATEMENT

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information, see the Office of Disability Accommodation website at http://disability.unt.edu. You may also contact them by phone at (940) 565-4323.
ACCEPTABLE STUDENT BEHAVIOR

Student behavior that interferes with an instructor’s ability to conduct a class or other students’ opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student’s conduct violated the Code of Student Conduct. The university’s expectations for student conduct apply to all instructional forums, including university and electronic classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at http://deanofstudents.unt.edu.