

# EENG 5820 - Wireless Communications

## Fall 2021

### Course Description:

This course discusses the fundamentals of wireless communications. Topics include the modeling of wireless channels, diversity techniques to combat fading, wireless channel capacity limits, and modern cellular wireless communication system implementations.

### Learning Objectives:

The goals of this course are to expose the students to basic knowledge of wireless communication systems, ranging from wireless channels, diversity techniques and capacity limits, and to prepare the students for advanced topics and research in wireless communications.

### Lectures:

Mo, We, 17:30 - 18:50, NTDP B217.

### Instructor:

Hua Sun. Office: NTDP B225. Email: [Hua.Sun@unt.edu](mailto:Hua.Sun@unt.edu).

Office Hours: Mo, We, 16:30 - 17:30, NTDP B225.

**TA:** Wen Du. Office: NTDP B209. Email: [WenDu@my.unt.edu](mailto:WenDu@my.unt.edu).

Office Hours: Tu, 15:00 - 16:00, NTDP B209.

Zoom: <https://unt.zoom.us/j/85366602458?pwd=dmZxSEdjTWtiZG9URVFmWmVGTUU2QT09>

### Textbook:

David Tse and Pramod Viswanath, *Fundamentals of Wireless Communication*, ISBN 978-0521845274, Cambridge University Press (2015).

Lecture notes and other supplementary materials are posted online.

### Prerequisites:

EENG 5810 Digital Communications or equivalent.

### Grading Policy:

Homework: 10%

Midterm Exam: 30% (in class)

Final Exam: 30% (17:30 p.m. - 18:50 p.m., Monday, December 6, NTDP B217)

Project (Group Presentation and Report): 30%

### General Policies:

- **Academic Integrity Standards and Consequences.** According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A

finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. [Insert specific sanction or academic penalty for specific academic integrity violation].

- **ADA Accommodation Statement.** UNT 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 a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students 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 ODA website at [disability.unt.edu](http://disability.unt.edu).

- **Emergency Notification & Procedures.** UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Blackboard for contingency plans for covering course materials.

- **Face Coverings.** UNT encourages everyone to wear a face covering when indoors, regardless of vaccination status, to protect yourself and others from COVID infection, as recommended by current CDC guidelines. Face covering guidelines could change based on community health conditions.

- **Attendance.** Students are expected to attend class meetings regularly and to abide by the attendance policy established for the course. It is important that you communicate with the professor and the instructional team prior to being absent, so you, the professor, and the instructional team can discuss and mitigate the impact of the absence on your attainment of course learning goals. Please inform the professor and instructional team if you are unable to attend class meetings because you are ill, in mindfulness of the health and safety of everyone in our community.

If you are experiencing any symptoms of COVID-19 (<https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or [askSHWC@unt.edu](mailto:askSHWC@unt.edu)) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Team at [COVID@unt.edu](mailto:COVID@unt.edu) for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure.