

## EENG 3920 Modern Communication System Design Project

**Instructor:** Shuping Wang  
**Office:** NTDP F130  
**Phone:** 940-369-8895  
**Email:** [shuping@unt.edu](mailto:shuping@unt.edu)

**Fall 2025**  
**Time:** (Th) 10:00 am – 12:50 pm  
**Meeting Place:** NTDP B288  
**Office Hours:** (TuTh) 1:00 pm - 2:30 pm

**TA:** Danah Omary  
**Office Hours:** MoWe 1:00 pm to 2:30pm in Room B250  
**Email:** [DanahOmary@my.unt.edu](mailto:DanahOmary@my.unt.edu)

### Course Description

Students are required to design electronic communication systems with electronic devices such as transistors, capacitors, inductors, and resistors. Topics include LC circuits and oscillators, AM modulation, SSB communications, and FM modulation.

### Course Information

#### Co-requisite

EENG 3520 Electronics II

#### Required Textbook and References

- J. S. Beasley, J. D. Hymer, and G. M. Miller, Laboratory Manual to Accompany Electronic Communications. Pearson, 2014, ISBN 978-0-13-301066-4 (**Required**).
- J. S. Beasley, J. D. Hymer, and G. M. Miller, Electronic Communications a Systems Approach, Pearson, 2014, ISBN 978-0-13-298863-6 (**Recommended**).

#### Attendance

Attendance is mandatory. Lectures will focus on presenting the principles and theories related to course topics, and active participation in class discussions is expected. Lab sessions will provide hands-on experience to reinforce and deepen understanding of key concepts. Since the class meets only once a week, attending every session is critical to your success.

#### Lab report

Lab reports will be required to assess understanding and reinforce the materials covered in the experiment sessions.

- Lab report must be uploaded to Canvas at the due date/time.
- Lab reports turned in late will be penalized 50%. No lab report is accepted after 24 hours.
- Students have one week to contest any grade once the grade is posted.

#### Tests and Exams

There will be four (4) Tests. Test content will be drawn from class lectures, discussions, handouts, and class/laboratory exercises.

#### Missed Tests

**No make-up tests will be administered.** If a student is unable to take a scheduled test for any reason, the weight of that test will be redistributed across the remaining tests.

## **Grading Elements and Weights**

Tests:	40%
Labs:	60%

## **Grade Distribution**

Points	Letter Grade
90.0% - 100%	A
80.0% - 89.9%	B
70.0% - 79.9%	C
60.0% - 69.9%	D
59.9% & Below	F

## **UNT Policies**

### **ODA Policy**

UNT makes reasonable academic accommodations 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 \(https://disability.unt.edu/\)](https://disability.unt.edu/).

### **Prohibition of Discrimination, Harassment, and Retaliation (Policy 16.004)**

The University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

### **Student Evaluation of Instruction**

SPOT is a requirement for all organized classes at UNT. The survey will be made available at the end of the semester.

### **Academic Integrity Policy**

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.

## Tentative Course Outline

- Fundamental Communications Concepts (8/21)
- Introduction to workstation in the lab (8/21)
- Lab 1 (Exp. 2) Waveforms/Spectrums in the Time/Frequency Domains (8/28)
- Amplitude Modulation (9/4)
- Lab 2 (Exp. 3) Introduction to Spectrum Analysis (9/4)
- **Test 1** (9/11, 30 minutes)
- Angle Modulation (9/11)
- Lab 3 (Exp. 5) Frequency Modulation: Spectrum Analysis (9/18)
- **Test 2** (9/25, 30 minutes)
- AM and FM Circuits (9/25)
- **Test 3** (10/2, 30 minutes)
- Transmitters (10/2)
- Lab 4 (Exp. 6) Radio-Frequency Amplifiers and Frequency Multipliers (10/9,10/16)
- Lab 5 (Exp. 7): Colpitts RF Oscillator Design (10/23, 10/30)
- Receivers (11/6)
- Lab 6 (Exp. 10) Sideband Modulation and Detection (11/6, 11/13)
- **Test 4** (11/20, 30 minutes)
- **Review** (11/20)
- Lab makeup (12/4)