Course Information

EE3150
Communications Laboratory

Professor Contact Information

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Course Pre-requisites, Co-requisites, and/or Other Restrictions

(strictly enforced) Co-requisite: EE3350

Course Description

This laboratory is designed to enhance students' understanding of communications principle in a laboratory setting. The format of this lab is such that students are encouraged to engage in design and implementation activities which will be demanded from them upon graduation. Given that this course is often followed by the Senior Design class, an emphasis is placed on fostering independent thinking while encouraging team efforts. Furthermore, although a number of prescribed modulation schemes are considered here, the focus remains on the overall understanding of communication principles and practice and not on a particular modulation scheme that is in use today.

Student Learning Objectives/Outcomes

Students are expected to be able to:

1. Ability to calculate signal properties both in time and frequency domain
2. Ability to design filters for communication systems
3. Ability to design amplitude modulated (AM) systems
4. Ability to design frequency and phase modulated systems
5. Ability to design and make measurements of communication systems

Students are expected to work independently. Although experiments are conducted by groups of two students, each student is required to work on his/her pre-lab and subsequent lab analysis independently. This implies that the only common factors between pre-labs and lab analyses of lab partners must be limited to the experimental outcome observed in the lab. Any student in violation of the above policy will be referred to UTD's disciplinary committee.

Required Materials

1. K. Kiasaleh, Communications Laboratory Guide, Senita Publishing, 2014.

Suggested Course Materials

1. David Pozar, Microwave Engineering, 3rd ed. John Wiley and Sons, 2005 (chapter 8).
2. B. P. Lathi, Modern Digital and Analog Communication Systems, 3rd edition, Oxford Series in Electrical and Computer Engineering, 1998
3.

Lab Schedule

Week of Aug. 29	**official start date of the lab**	**Lecture on Filter Theory**	
Week of Sep. 12			**Pre-lab 1 is due**
Week of Sep. 26	**Lab 1 exam**		
Week of Oct. 3		**Lecture on AM**	
Week of Oct. 10			**Pre-lab 2 is due**
Week of Oct. 24	**Lab 2 Exam**		
Week of Oct. 31		**Lecture on FM**	
Week of Nov. 7			**Pre-lab 3 is due**
Week of Dec. 5	**Lab 3 Exam**		

Grading Policy (tentative):

1. Pre-labs **20**%
2. In-lab Exams 75%
3. Lab Reports **5**%

An overall score of 40% or better is required to earn a passing grade (C- or better) in this course.

The above grading policy only applies to those who have attended all labs and have completed all experiments. If any of the experiments is not completed, a score of 0 (and subsequently a grade of F) will be assigned for the course regardless of the exam grades.

Course & Instructor Policies

1. **In this lab, upon completion of an experiment, an examination of the material related to that experiment will be conducted. Exams are taken individually and not as a team. The exam will contain both theoretical questions as well as experimental procedures. The schedule for the exams is listed above under the title "Lab Schedule."**
2. **Each lab contains a pre-lab which must be completed by students individually (not as a group). Pre-lab must be turned in on the commencement date of the experiment at the beginning of the lab. There are no late pre-labs, unless student can provide excused reason(s) for missing the deadline for the pre-lab, such as illness (a note from a physician is needed), work-related (a note from the supervisor is needed), holy days, etc. Even though a grade of 0 is assigned to unexcused late pre-lab submissions, the completion of pre-lab is REQUIRED before initiating or continuing an experiment. In the event of excused absence, students are required to complete the pre-lab before initiating the experiment in the next scheduled lab session.**
3. Upon completion of an experiment, students will turn in their individual raw data along with their observations/conclusions to their TAs within **7 calendar days**. The reports can be emailed to the TA for the course by close of business day of the due date. This submission is not a formal lab report, but rather an account of the observations made in the lab along with the answers to questions raised in the lab manual. Students must obtain their respective TA's signature on the data sheet they have collected in the experiment before leaving the lab.
4. Make up for an experiment will be granted for excused absences outlined above. In such a case, the experiment must be completed as soon as possible so that it will not interfere

with the normal lab schedule. Furthermore, any student who has missed the lab week due to an excused absence is required to complete the experiment individually.

5. During the lab period, upon the completion of a significant step (measurement or observation) ask your TA to verify your results. DO NOT PROCEED to the next step until the TA has verified and taken note of your results. THESE OBSERVATIONS WILL BE USED TO DETERMINE YOUR IN-LAB PERFORMANCE.
6. Finally, any unexcused absence results in a grade of 0 for the lab and pre-lab.
7. Although there are set times for the labs and students are required to attend their designated lab times, with the approval of the instructor and provided that space and personnel are available, students can attend other lab sessions to work on their experiments.
8. If a group cannot complete the experiment due to equipment malfunction or other unforeseen situation, students are allowed to attend other lab sessions for that week, if space is available. If space cannot be found, then students can complete their work in the following week, However, EVERY effort must be made to complete the experiment during its designated week.
9. During the weeks when no experiments are scheduled, students are required to come in during their designated time (or other times with permission) and work on their experiments. Students are required to sign the sign-in sheet every time they are in the lab. Weekly attendance for this lab is mandatory.

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to http://go.utdallas.edu/syllabus-policies for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.