University of Texas at El Paso
Electrical and Computer Engineering
Introduction to Communication Networks
EE3354 / EE3154, Fall 2019

INSTRUCTOR:	Virgilio Gonzalez
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OFFICE HOURS:	, or by appointment
TEXTS:	William Stallings, "*Data and Computer Communications*", **10th** Edition, Prentice Hall
Catalog Description:	Familiarization with communication networks through simulation experiments done with computer software. Topics include Protocol Layers, Link Analysis, Circuit & Packet switches, LANs and Internet Protocols

Course Outcomes

1. Analyze Analog Transmission Links
2. Analyze Digital Transmission Links
3. Understand Fundamentals of Low Level Protocols
4. Design Basic Communication Networks
5. Use computer simulation tools for the analysis of communication systems

Content Material

Item #	Topic
1	Data Communications Overview
2	Layering Protocol Model
3	Physical Layer, Physical Media
4	Properties of Signals, Analog & Digital
5	Signal Encoding, Analog Modulation
6	Digital Baseband Transmission
7	Fiber Optic Link Analysis
8	Digital Modulation
9	Coding, Error Detection and Correction
10	Data Link, Point to Point
11	Multiplexing
12	Switched and Cellular Networks
13	FR & ATM
14	Local Area Networks (Contention based)
15	Wireless LAN and WAN
16	IP and Routing (Network Layer)
17	Transport layer and upper applications
18	Selected Topics along major chapters

* Correspond to supplementary material

GENERAL COURSE POLICIES

- Samples of student work will be collected for quality assurance purposes. Please notify the professor, in writing, if there is any confidentiality restriction.
- **No late work** will be accepted and special accommodations require the letters with instructions from CASS.
- The Professor will be available only during the assigned office hours or by appointment.
- For email questions or concerns, please start the email subject line with " **EE3354: …** " .
- Most homework, Special Problems and other assignments will be solved online with **Blackboard**.
- A **Blackboard** (https://blackboardlearn.utep.edu/) **account is required**. They normally already exist. If you don't know your account and password, please check with the Help Desk in extension 4357 (or 747-5257 off campus)
- Each piece of written work must have **EE3354 or EE3154**, **name,** student **ID, TEAM** number (when applicable) at the **upper right corner** of the first page; and the **name** in all remaining pages.
- All printed work must be stapled, with good presentation. Final results must be emphasized (example red underline or highlighted box)
- Online work must have in the first text line the name of the student and the team number.
- Due dates for Lab assignments, homework and exams will be notified through Blackboard and in class.
- Computers, cell phones and other electronic instruments can be used only for class purposes only. Students will be warned if they are using applications such as instant messaging, web browsing in sites unrelated to class, or other applications because those activities distract the students. Additional infringements or if the action is very disruptive will result in student dismissal from the classroom and assign corresponding absence.
- Detailed instructions for the **Labs** and other policies will be **provided later** in separate handouts and in **Blackboard**

Academic Honesty

- It is expected that the students will conduct with integrity in all course areas. Do not attempt to engage in a dishonest activity such as copying, plagiarism, falsifying information, etc. The professor will take measures to prevent such instances and will bring a case to the university authorities.
- Information about University wide policies could be found in the Dean of Students Web page at http://studentaffairs.utep.edu/Default.aspx?alias=studentaffairs.utep.edu/dos

GRADING

ITEM	Points / Ea
Exams 1, 2, 3 & 4	200
Team class discussions/problems	5
Homework	10-20
Lab Reports or special assignments	30-60
PowerPoint presentations	100
Points given by instructor on student participation	20

- Each element will accumulate points
- Some elements are individual and others depend on team performance
- **Show always all the procedure** to arrive to the solutions. End results without the right procedure are considered conceptual errors.

- In exams each problem has its own weight and will be indicated at the beginning of the problem, points are given by problem section (e.g. sections *a* and *b* of same problem have their own points).
- The grade of an exam answer will be 100% if perfect. 50% for non-conceptual procedural errors and 0% if no answer. There is a tolerance of ±20% based on the relevance of the errors.
- <mark>Graduate Students</mark> will be graded in the exams in the following way: The grade of an exam answer will be 100% if perfect. 50% for numerical or sign errors. and 0% for procedural errors. There is a tolerance of ±10% based on the relevance of the errors.
- To earn partial credit students will need to identify the cause of the errors and provide with an additional correction document stating the proper procedure to obtain a valid answer.
- Labs and special problems have the grades Satisfactory (100%), Attempted (50%) or Unsatisfactory (0%) for the points available. Online quizzes are either "all or nothing" points.
- Letter scale will be **A:** 90%-100%; **B:** 80%-89.9%; **C:** 70%-79.9%; **D:** 60%-69.9%; **F:** below 60% of the reference grade.
- Special assignments and labs will be reported in **teams of 3 UG students (2 UG and 1 Gr, or 2GR)**. However there is always an individual evaluation for each activity.
- PowerPoint presentation will be in groups of 3 students (Only 1 graduate per team).
- <mark>Graduate students</mark> are expected to make a higher quality job than undergraduates.
- All members ***must contribute*** for each assignment and shall be able to demonstrate it, along with the understanding of their peer's portions.
- **Each report must have a typed cover page**.
- Reports will be turned in to the professor or the TA before each deadline in through the assignment area in **Blackboard**. Each student must submit a copy of the team report to be graded in the system.
- <u>Additional</u> requirements may be stated in the assignments.

TEAM Policies (When Applicable)
- Some assignments will be reported in **teams of 2 or 3 students**. However there is always an individual evaluation for each activity. **Teams could be self selected.**
- PowerPoint presentation will be in **groups of 2 or 3 students.**
- All members ***must contribute*** for each assignment and need to show their <u>own</u> part in the team's report.

EE3154 Lab Policies
- The Lecture and the Lab grade will be the same.
- You will be required to design and implement several lab assignments over the course of the semester, students must be enrolled in EE3154 for this reason. Labs will be solved mainly using several simulation tools including LabView, MATLAB or OPNET. Most are available on the PC lab, on the engineering desktop, or on COMLAB (E314B). The reports could be edited anywhere
- Each student needs to format lab reports according to the following guidelines.
  - All the pages will be collected and accumulated through the semester electronically
  - Keep an index table for the semester (include item #, title, date and page).
  - Each page must be numbered in the upper outside corner
  - Each lab assignment has three sections, Pre-lab, Measurements, and conclusions
  - (30%) The Pre-Lab includes all computations, designs and research needed before executing the lab.
  - (40%) The measurements and observations include data collected and notes on how things happened. You might need to cut and paste (literally) printouts with some screenshots or other plots.

- o (30%) Conclusions: this section includes your comments on what you learned, including what went wrong and how it was solved. Also include what you think might be future work or applications of the subject.
- Additional requirements may be stated in the assignments.

GRADING

ITEM	Weight
PreLab	30%
Measurements and observations	40%
Conclusions	30%