University of Texas at El Paso
Electrical and Computer Engineering
Intro to Communication Networks – Fall 2024
ECE3370 / ECE3170

INSTRUCTOR:	Virgilio Gonzalez
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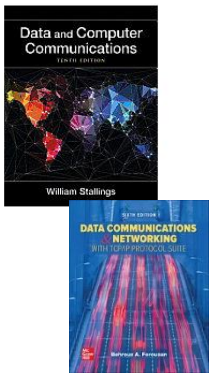
Lecture HOURS:	W 6:00PM – 8:50 PM, LAB: There is no preassigned lab hours, exercises will require work on computer at home, online or remotely.
OFFICE HOURS:	T 3:00 – 4:00 PM, W 4:00PM – 5:00 PM,
TEXT: Optional Recommended references	• Main: William Stallings, "Data and Computer Communications", 10th Edition, Prentice Hall, ISBN: 9780133506488 • Secondary: Behrouz A Foruzan, "Data Communications and Networking", 6th ed., McGraw Hill. ISBN 9780078022098 • Supplemental materials in Blackboard 
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
Prerequisites/ Co-requisites	ECE2302 , ECE2300

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

Session#	Topic	Stalling Chapter
1	Overview	1
2	Protocol Architecture	2
3	Physical layer, Media, link capacity	4. 3

4	Analog systems	5
5	LAN vs WAN, Circuit vs Packet vs Virtual circuits	*
6	Internet Protocol	14
7	Transport	15
8	Data Link / Framing / MAC	6, 7
9	LANs (IEEE802.x)	11
10	Ethernet	12
11	Wireless LAN	13
12	WAN Technology, Switching	9
13	Cellular	10
14	Final presentations	*
15	Selected Topics	*

- This is a HytFlex class. It will meet during the regular hours in the classroom and will be simultaneously streamed. The recordings will be available a few days later.
- Each session consists of a regular lecture supported by supplementary materials. They are composed of brief notes, videos and assigned readings.
- You are expected to dedicate about 2 to 3 hours per session to review the assigned materials, answer problems, and submit postings and assignments.
- Students are encouraged to use MS Teams to interact during the allocated office hours to talk with the instructor. Face-to-face time is also available in the professor's office. Please make an appointment reservation to guarantee availability.
- For the final sessions, the students will need to form teams and will be assigned a current topic in the telecommunications industry. The team will need to make a slide presentation / video presentation (guidelines available in Blackboard) and upload to the instructor to share with the class.
- Technology Requirements
    - Supplementary course content is delivered via the Internet through the **Blackboard** learning management system (LMS). Ensure your UTEP e-mail account is working and that you have access to the Web and a stable web browser. Mozilla Firefox and Google Chrome are the most supported browsers for Blackboard; other browsers may cause complications with the LMS. When having technical difficulties, update your browser, clear your cache, or try switching to another browser.
    - LAB: You will use computer simulations and remote access to lab systems. You will use LABVIEW and other remote tools, such as Tetcos-NETSIM. It is highly recommended to get your own FREE copy of LabView through the Engineering Technology Center. https://www.utep.edu/engineering/etc/Software/index.html
    - In-site or Remote Desktop Access to lab resources. The computer lab in room ENGR-E319 has the software tools installed and is available to EE students for in person work during regular school hours. The computer could be accessed remotely after hours by using the Remote Desktop application.

- You might need to have or have access to a computer/laptop, scanner, a webcam, and a microphone. You will need to download or update the following software: Microsoft Office, PDF reader tool (Adobe or others), Media players (Flashplayer, Windows Media Player or QuickTime), and Java. Check that your computer hardware and software are up-to-date and able to access all parts of the course.
- If you encounter technical difficulties beyond your scope of troubleshooting, please contact the Help Desk as they are trained specifically in assisting with the technological needs of students.

GRADING (Lab and Lecture are combined)

ITEM	Points / Total
Exams 1, 2, & 3	150 ea / 450 total
Assignments and discussion boards	150 total
Participation	10 total
LABs (~6)	40ea / 240 total
Student Group Presentations	150
TOTAL	1000

- Each element will accumulate points, Some elements are individual and others depend on team performance (presentations)
- Exams will be conducted through Blackboard and require solving problems or applying concepts.
- **Show always all the procedure** to arrive to the solutions. End results without the right procedure are considered conceptual errors. Procedures for exams will be uploaded separately.
- After the initial grading is done, to earn partial credit, students might need to identify the cause of the errors and provide with an additional correction document stating the proper procedure to obtain a valid answer. (maximum 50 % credit only)
- **Homework.** Students will need to propose a solution to an open-ended problem, or researching technologies. Then will need to post the concise proposal in the Blackboard discussion boards within the allocated deadlines. Expected length is between one or two paragraphs per problem and attach needed graphics.
  - Afterwards, students are required to inspect at least two proposals from other students and make comments about the solutions. Responses must be posted no later than 48 hrs after the assignment become active. The length of the comments should be about one single paragraph.
- 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.
- Team assignment require forming a team consisting of 2 or 3 students. Each team assignment will specify the team size.
- All members ***must contribute*** for each assignment and shall be able to demonstrate it, along with the understanding of their peer's portions.
- **Graduate students** are expected to make a higher quality job than undergraduates.
- **Each report must have a typed cover page**.

- Reports will be turned in to the professor or the TA before each deadline through the assignment area in **Blackboard**.
- Some large attachments might require saving the document in a shared OneDrive folder and share the link with the instructor.
- Additional requirements may be stated in specific assignments.

GENERAL COURSE POLICIES

- Samples of student work will be collected for accreditation 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: …** " .
- Each piece of written work must include **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 have 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 when applicable.
- Detailed instructions for the **assignments** will be **provided later** in separate handouts through **Blackboard**

AI allowed with proper acknowledgement

Use of AI technologies or automated tools, particularly generative AI such as ChatGPT or DALL-E, is ***only allowed with proper attribution given for its use***.

Students must properly cite and give full credit to the program used upon submission of every relevant assignment. For example, text generated using ChatGPT must be cited:

> Chat-GPT(version). Date of query (year/month/day). "Text of your query." Generated using OpenAI. https://chat.openai.com/

A short paragraph describing how the tool(s) was/were used for the assignment must be included.

Academic Honesty, Accommodations and NETiquette

- 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
- NETtiquette

- Always consider audience. Remember that members of the class and the instructor will be reading any postings.
- Respect and courtesy must be provided to classmates and to instructor at all times. No harassment or inappropriate postings will be tolerated.
- When reacting to someone else's message, address the ideas, not the person. Post only what anyone would comfortably state in a F2F situation.
- Blackboard is not a public internet venue; all postings to it should be considered private and confidential. Whatever is posted on in these online spaces is intended for classmates and professors only. Please do not copy documents and paste them to a publicly accessible website, blog, or other space. If students wish to do so, they have the ethical obligation to first request the permission of the writer(s).

- The University is committed to providing reasonable accommodations and auxiliary services to students, staff, faculty, job applicants, applicants for admissions, and other beneficiaries of University programs, services and activities with documented disabilities in order to provide them with equal opportunities to participate in programs, services, and activities in compliance with sections 503 and 504 of the Rehabilitation Act of 1973, as amended, and the Americans with Disabilities Act (ADA) of 1990 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Reasonable accommodations will be made unless it is determined that doing so would cause undue hardship on the University. Students requesting an accommodation based on a disability must register with the UTEP Center for Accommodations and Support Services.

STUDENT RESOURCES

UTEP provides a variety of student services and support:

- UTEP Library: Access a wide range of resources including online, full-text access to thousands of journals and eBooks plus reference service and librarian assistance for enrolled students.
- Help Desk: Students experiencing technological challenges (email, Blackboard, software, etc.) can submit a ticket to the UTEP Helpdesk for assistance. Contact the Helpdesk via phone, email, chat, website, or in person if on campus.
- University Writing Center (UWC): Submit papers here for assistance with writing style and formatting, ask a tutor for help and explore other writing resources.
- Math Tutoring Center (MaRCS): Ask a tutor for help and explore other available math resources.
- History Tutoring Center (HTC): Receive assistance with writing history papers, get help from a tutor and explore other history resources.
- Military Student Success Center: UTEP welcomes military-affiliated students to its degree programs, and the Military Student Success Center and its dedicated staff (many of whom are veterans and students themselves) are here to help personnel in any branch of service to reach their educational goals.
- RefWorks: A bibliographic citation tool; check out the RefWorks tutorial and Fact Sheet and Quick-Start Guide.