THE UNIVERSITY OF TEXAS AT TYLER
DEPARTMENT OF COMPUTER SCIENCE
COSC 4325 – Data Communications and Computer Networks
Fall 2024

Instructor: Nary Subramanian, Ph.D.
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Lecture: MWF 9.05 am to 10.00 am COB 211

Office Hours: MWF 10.00 am to 11.00 am; and by appointment using phone or Zoom

Pre-req: Junior or Senior Standing in Computer Information Systems or Information Technology

Text: *Business Data Communications and Networking* by Jerry Fitzgerald, Alan Dennis, and Alexandra Durcikova, 14th (Fourteenth) Edition, Wiley Publishing, ISBN 978-1-119-70266-5.

Catalog Description: Study of problems and limitations associated with interconnecting computers by communication networks. OSI reference model, architecture of circuits, message and packet switching networks, network topology, routing, flow control, capacity assignments, protocols, coding and multiplexing.

Course Description: Data communications refers to the transfer of information over wires that are interconnected to form computer networks. Based on our daily experiences of using mobile devices, connected appliances, and workstations, we can come to the fair conclusion that without the ability to transfer data over communication networks we can do practically nothing! This, in fact, seems to be the view of enterprises as well – without a properly designed and secure network most of the business processes simply cannot operate: access to the Intranet, access to shared resources, access to the Internet, and emails, all require a robust network to be available in the first place. In this course we will study in a systematic manner how data are transferred over computer networks so that we understand the technical and management issues involved in this field which, in turn, will help us design and develop our own computer networks based on the given business application and data requirements. We will be using the Canvas Learning Management System for the coursework – all slides and other material used in class will be posted on Canvas.

Grading: Grading will be based on exams, labs, and homework. There will be two mid-term exams (as per schedule given later). Homework will need to be uploaded to Canvas and homework will be due before the deadline – late submissions will not be graded. Labs will be assigned on a periodic basis and will need to be completed in the Networking Lab (COB 258) outside of class times; all lab assignments must be submitted before their deadlines – late submissions will not be graded. Weights are given below:

First Midterm Exam	20%
Second Midterm Exam	20%
Final Exam	25%
Labs	20%
Homework	15%

Grading Policy:

Points	Grade
≥85	A
≥75, < 85	B
≥65, < 75	C

Course Objectives:

1. Understand the principles of data communications and network
2. Analyze different networking options
3. Design a networked system given the requirements
4. Compare different networking technologies
5. Apply security principles to secure data in transit.

Tentative Schedule:

Week	Chapter	Topic
1	1	Introduction to Data Communications
2	2	Application Layer
3	3	Physical Layer
4	4	Data Link Layer
5	5	Network and Transport Layer
6	FIRST MIDTERM EXAM, Wednesday, October 2nd, 2024	
7	6	Network Design
8	7	Wired and Wireless Local Area Networks
9	8	Backbone Networks
10	9	Wide Area Networks
11	SECOND MIDTERM EXAM, Wednesday, November 6th, 2024	
12	10	Internet
13	11	Network Security
14	12	Network Management
15	FINAL EXAM, Monday, December 9th, 2024, 8 am to 10 am	

Census Date: September 9th, 2024

Attendance and Make-up Policy

It is in your interest to attend all classes. There will be no make-ups for missed exams; missed exams will get a grade of zero.