CS/CE 4390 – Computer Networks - Fall 2025

Prof. Zygmunt J. Haas

Course Description:

This is a basic course in computer networks, which covers the classical/fundamental topics of the networking field. The goal of the course is to familiarize the students with the basic elements and the design philosophies of modern telecommunications and computer networks. The emphasis of the course is on protocol design methodologies and on the performance of the networking protocols. The presentation of the material follows the OSI Model, utilizing the top-down approach, and focusing on the TCP/IP protocol suite. Both wired and wireless networks are discussed. Additional topics that are generally covered, time permitting, include multimedia communication, network security, and network management.

Course Instructor: Prof. Zygmunt J. Haas, **haas@utdallas.edu**

Office Hours: Tuesdays, 2:00pm-3:00pm or by appointment; Location: **MS TEAMS.**

Course Modality and Expectations:

- **Instructional Mode:** Online synchronous delivery mode
- **Course Platform:** All course material will be accessible in eLearning. All instruction will be through the MS Teams platform, including office hours. Additionally, students are always welcome to email the instructor/TA with any questions.
- **Expectations:** Students should be familiar with the eLearning platform. Students should (online and synchronously) attend **all** the lectures. It is a requirement for each student to have a web cam, as well as means to scan or take photos of documents (a smart phone is fine).
- **Asynchronous Learning Guidelines:** Asynchronous access will **not** be provided.

Class Participation: **Regular lecture attendance is mandatory. Attendance will be taken at each lecture.** Students who fail to follow the class material regularly are inviting scholastic difficulty. The course's material gets much more complex as the course progresses, and it is typically very difficult to catch up with missed classes. Furthermore, note that exams are based on material discussed in class, which may not be explained or fully explained) on slides. **Therefore, it is extremely important that students take notes in class during lectures.**

Class Recordings: The instructor may on occasion record meetings of this course. Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. The instructor's recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Class Materials: The instructor may provide class materials that will be made available to all students registered for this class. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in the class or uploaded to other online environments, except to implement an approved

Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.

Pre-/co-requisites: (CS/CE/SE 3345 (Data Structures and Introduction to Algorithmic Analysis) or equivalent; a Programming Course (C/C++ or Java).

Student Learning Objectives/Outcomes:

- Ability to understand the need for and structure of the OSI, TCP/IP network models
- Ability to design and evaluate methods for framing messages in transmission media
- Ability to analyze and evaluate different error detection schemes
- Ability to understand and evaluate stop-and-wait, sliding window protocols
- Ability to understand and evaluate multiple-access protocols
- Ability to design and evaluate routing protocols
- Ability to design and evaluate flow control and congestion control protocols
- Ability to understand the issues in internetwork design
- Ability to understand the various Internet protocols (TCP/IP)
- Ability to write networking protocols

Course TA: TBA

Course Website: The material and announcements of this course can be accessed using your UT Dallas NetID on the **eLearning** website. (Please see the course access and navigation section of the **Getting Started with eLearning** webpage for more information. To become familiar with the eLearning tool, please see the **Student eLearning Tutorials** webpage. UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The **eLearning Support Center** includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.)

Course Times: Mondays and Wednesdays, 1:00pm-2:15pm; Virtual Classroom (**MS Teams**)

Required Course Textbook:

- Tanenbaum, Feamster, and Wetherall, "Computer Networks", **6th Edition**, 2021, ISBN: **9780137523214** (note: **not** Global Edition) Retail book prices - Buy New♦: $77.00; Buy Used♦: $57.75 (♦Campus Bookstore prices and availability are subject to change at any time without notice.)
  The textbook can be purchased online or at the **UT Dallas Bookstore**.
- References to technical articles may be provided during the course.

Suggested Course Materials: Notes/Slides, to be posted on the course web site

Homework Assignments:

There will be approximately 8-10 homework assignments, which will be typically posted on Tuesdays. Each assignment will be due typically a week after its distribution, with some exceptions. Some assignments may require limited computer use. It is expected that every student in the class possesses a web camera, and a smart phone or a scanner, so that the student can scan/take a photo of their assignments, which will then be submitted through eLearning as PDF files. **Note: No late homework submissions, or homework not submitted through eLearning, will be accepted – NOTE: no exceptions! Each homework is to be submitted as a single PDF file, with no links. It is the students' responsibility to verify that an upload was successful.**

Technical Requirements: In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable successful learning experience. Please review the important technical requirements on the Getting Started with eLearning webpage.

It is expected that every student in the class has available a camera, and a smart phone or a scanner, so that the student can scan/take photos of their assignments, which will then be submitted through eLearning. Only PDF files will be accepted.

Grading Policy:

Midterm 1:	20%
Midterm 2:	20%
Final Exam	25%
Homework Sets:	20% (total)
Attendance:	15%
Extra Credit:	Small extra credit may be awarded for active students

Grading Rules:

- All the components are essential for the final grade.
- No one is exempt from the exams. If you have missed an exam due to a **legitimate reason**, you need to reschedule a makeup exam as soon as possible.
- If you did not turn in up to 2 homework sets due to a **legitimate reason**, the turned-in assignments will carry the total of the 15% of the final score.
- Any final score component missed not due to a **legitimate reason** will count as no credits in the final score calculation.
- See the course web site for what constitute a **legitimate reason**.
- Note: Individual work is assumed in all grading components. In solving the homework sets, use of any means other than the course material is strictly prohibited.
- Use of **any** AI tools in this class, including Generative AI, is prohibited at any time.
- Note that academic honesty and integrity is expected in all the graded elements of the course and will be strictly enforced.
- Note: The date of the final exam is set by the University. It cannot be changed and no exceptions will be allowed.

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."

Reading Assignments: Reading assignments will be posted weekly. It is very important to go over the reading material before the classes. Unless specified otherwise, reading assignments are from the textbook.

Class and Office Hours Rules:

- For any questions or concerns about the course, including the requirements, the topics, the problems, and so on, please contact the instructor. I am happy to answer all your questions.
- Ask questions, participate.
- Silence communication devices and do not have side conversations.
- Mute your microphone, unless you speak.
- In general, be polite and courteous to everyone.

Communication: This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool will also be used during the semester. For more details, please visit the **Student eLearning Tutorials** webpage for video demonstrations on eLearning tools. Student emails to the instructor will be answered within 3 working days under normal circumstances.

Distance Learning Student Resources: Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the **eLearning Current Students** webpage for more information.

Exams and Other Tests: This course may use **Honorlock** – an online exam proctoring tool. To successfully take an exam, you must have a web camera with microphone, a laptop or desktop computer (no tablets/phones), Chrome browser, a reliable internet connection and your photo ID. You will be prompted to install the Honorlock Chrome Extension (which you can remove after you finish the test). You will then access the exam within the eLearning course website and go through the authentication process. The web camera will monitor you throughout the test. Please see **Support Information** for additional information.

Server Unavailability or Other Technical Difficulties: The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online **eLearning Help Desk**. The instructor and the eLearning Help Desk will work with the students to resolve any issues at the earliest possible time.

Tentative Syllabus:

Topic	Reference
Introduction	Chapter 1
The Physical Layer	Chapter 2
The Data Link Layer	Chapter 3
The Medium Access Control (MAC) Sublayer	Chapter 4
The Network Layer	Chapter 5
The Transport Layer	Chapter 6
The Application Layer	Chapter 7
Network Security	Chapter 8
Additional (advanced) Topics, time permitting	

Academic Support Resources: The information contained in the following link lists the University's academic support resources for all students. Please go to **Academic Support Resources** webpage for these policies.

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 **UT Dallas Syllabus Policies** webpage for these policies. (See also the following pages of this document.)

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

General Rules:

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights, nor escapes the responsibilities of, citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity:

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Any form of plagiarism, including from the WWW, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course may use the resources of turnitin.com, which searches the web for possible plagiarism and is highly effective.

Email Use:

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal From Class:

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, the instructor cannot drop or withdraw any student. The student must do the proper paperwork to ensure that s/he will not receive a final grade of "F" in a course if the student chooses not to attend the class once s/he is enrolled.

Student Grievance Procedures:

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the

respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the deal will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grades:

As per university policy, an incomplete grade will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

Disability Services:

The University of Texas at Dallas is committed to providing reasonable accommodations for all persons with disabilities. The syllabus is available in alternate formats upon request. If you are seeking classroom accommodations under the Americans with Disabilities Act (2008), you are required to register with the AccessAbility Resource Center, located in the Administration Building (AD), Suite 2.224. Their phone number is 972-883-2098, email: accessability@utdallas.edu and website is https://accessability.utdallas.edu(opens in a new tab) . To receive academic accommodations for this class, please obtain the proper AccessAbility Resource Center letter of accommodation and meet with me at the beginning of the semester.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. AccessAbility Resource Center provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days:

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

Prepared by: Z.J. Haas, June 6, 2025 (version 1.2)