Overview

Course Syllabus

Note: This syllabus will be reviewed during the first class meeting. The instructor reserves the right to amend this syllabus during the semester if needed. Students will be notified when revisions are made.

Feeling Overwhelmed?

Part I: General Information

Course Description

This course introduces the principles of data communications and networking. It covers topics including the TCP/IP protocol stack (physical, data link, network, transport, and application layers), local area networks, performance of queueing, multiple access schemes, IEEE 802 standards, wireless and mobile networks, and network security.

Instructor Information

- Ahmed Hamdi Sakr (**Dr. Sakr**)
- Office: CEI 3027
- Office Hours: Wednesdays (3:00 PM - 4:00 PM, and by appointment)
- Email: ahmed.sakr@uwindsor.ca
- Website: ahmedsakr.com

Graduate Assistant (GA) Information

- Ashab Uddin
    - Office Hours: Tuesdays, 9:00 - 10:50 AM at CEI 3082
    - Email: uddin81@uwindsor.ca (24hr response time Mon.-Fri.)

- Md Shakil Ahamed Shohag:
    - Office Hours: Wednesdays, 10:00 - 11:50 AM at CEI 3081
    - Email: shohagm@uwindsor.ca (24hr response time Mon.-Fri.)
- Kimia Gholizadeh
    - Office Hours: Tuesdays, 9:00 - 10:50 AM at CEI 3082
    - Email: gholizak@uwindsor.ca (24hr response time Mon.-Fri.)
- Arjit Malik
    - Office Hours: Wednesdays, 10:00 - 11:50 AM at CEI 3081
    - Email: malik89@uwindsor.ca (24hr response time Mon.-Fri.)

Class and Lab Information

- Class Location: Toldo Health Education Center 200
- Class Time: Mondays and Wednesdays (4:00 PM - 5:20 PM)

Course Content

The following topics will be covered:

- Introduction to Data Communication and Networking
- Layered Internet Protocol Stack
- Physical Layer: Signals, Data Transmission, and Transmission Media
- Data Link Layer: Data Link Control, Media Access, and Addressing
- Local Area Networks, Wide Area Networks, and Wireless Networks
- Network Layer: IPv4, IPv6, and Routing
- Transport Layer: UDP, TCP, and Queueing Systems
- Application Layer
- Cellular Networks and Mobile Internet Protocols

Resources

- Course Brightspace site
- Primary textbook:
    - B. A. Forouzan, "Data Communications and Networking with TCP/IP Protocol Suite," McGraw-Hill, 6th (5th or 4th) Edition, 2021.
- Recommended textbook:

    - J. F. Kurose and K. W. Ross, "Computer Networking: a Top Down Approach," Pearson, 8th (7th or 6th) Edition, 2020.
- Internet Engineering Task Force RFC Documents: https://www.ietf.org/standards/rfcs

Learning Outcomes

In this course, the students will be able to:

1. design computer communication systems, and express trade-offs in the system design,
2. interpret impact of critical parameters in data communication systems and apply techniques to improve overall system performance by tuning each parameter,
3. describe trade-off among delay, transmission rate, reliability, and system complexity and evaluate optimum values in the system design,
4. define terminology and recognize mathematical tools for computer communication systems,
5. underline importance of safe and reliable design principles in the communication systems for the well-being of the society,
6. assess importance of continuous education and learning with understanding of evolution of computer communication systems, and
7. use software tools to simulate, analyze, and optimize computer communication systems.

Evaluation Methods

The course grade will be evaluated as follows:

Method of Evaluation	% of Final Grade
Homework	20
Midterm exams and quizzes	40
Final exam	40

Important Dates

Check Brightspace website regularly for announcements. A full list of Important Academic Dates is available at https://www.uwindsor.ca/registrar/.

Supplemental Privileges

A supplemental examination is **not** allowed in this course.

Part II: Policies and Procedures

Assessment Considerations

Submission of Assignments

All assignments must be submitted electronically through the course Brightspace site. Email submissions will not be accepted. It is your responsibility to check submitted files and make sure all files are readable after submission. Corrupted files will be considered a no submission.

Late or Missed Assignments, Reports, or Projects

Unless otherwise stated, there is a 24-hour grace period for assignments submission after the due date without a penalty. Late assignments submitted after 24 hours will not be accepted. If you are experiencing difficulty meeting a deadline, you are encouraged to contact the course instructor as soon as possible to discuss the situation in advance of the deadline. There is no grace period for in-class activities.

Missed Tests

If you miss an exam for a medical or similar reason, appropriate documentation should be forwarded immediately to the office of the Associate Dean of Engineering no later than three business days following the absence. Documentation shall include the Faculty of Engineering Medical Form or other appropriate documents. Only then, a test make-up arrangement can be taken at the instructor's earliest convenience in a time slot that does not conflict with your scheduled classes. The test can be either an oral or written examination. There is no bargaining with the instructor to change the date of the make-up test. Transferring the term test weight to apply to the final examination is an

acceptable remedy if a student misses an exam for a medical or similar reason. There is no make-up option for missed quizzes.

Late Registration

Students who register late for the course are responsible to familiarize themselves with course information they missed prior to registration. No special accommodation will be provided for missed assignments or assessments.

Collaboration

Healthy collaboration and discussions related to general course content are highly encouraged. However, you must individually and independently write and submit your own work for assignments, projects, exams, etc. You must not offer, or ask for, substantial assistance to, or from, other students in completing graded homework for individual credit.

The point of collaborative learning is to increase your ability to succeed in this class. As a general rule, if you do not understand what you are handing in, you are probably cheating. If you have given somebody the answer, you are probably cheating.

If you have collaborated with another student, you must add a statement in your submission to acknowledge any collaboration including the name of the student and the nature of the discussion. You will not be penalized for declared collaborations. Any undeclared collaborations will be considered cheating.

External resources

You are encouraged to use external resources such as textbooks and online videos. This should be done in a way that enhances your understanding without trivializing the assessed material.

For example, reading more about the underlying theory to work out a solution by yourself is permitted. However, typing or posting the question on the internet and copying or paraphrasing the answer is not permitted and constitutes cheating.

If you use an external resource, you must cite it including title, URL, etc. You will not be penalized for declared use of external resources. Any undeclared use of external resources will be considered cheating.

Examination Procedure

- Students must follow all instructions provided before each exam.
- Students are not permitted to discuss the exam with any other individual.
- Students with similar answers may be asked for a follow-up oral exam to check the integrity of their answers.
- Students should understand their responsibilities under the Senate Bylaw 31: Academic Integrity and the Student Code of Conduct.

Electronics

- Approved calculator: Non-programmable calculators.
    - Casio: All Fx-115, Fx-300, and Fx-991 models.
    - Texas Instruments: All TI-30X and TI-36X models.
- Electronic devices aside from calculators are not permitted during tests/exams.
- Cell phones are not allowed during exams or quizzes.

Grading

Grades for the course will be consistent with the following table:

Range (%)	Letter (Undergraduate)	Letter (Graduate)
90-100	A+	A+
85-89.9	A	A
80-84.9	A-	A-
77-79.9	B+	B+
73-76.9	B	B
70-72.9	B-	B-
67-69.9	C+	C+
63-66.9	C	C
60-62.9	C-	C-

Range (%)	Letter (Undergraduate)	Letter (Graduate)
57-59.9	D+	F
53-56.9	D	F
50-52.9	D-	F
0-49.9	F	F

Academic Integrity

All incidents of academic dishonesty will be documented with the Associate Dean of Engineering. University procedures will be followed. Such incidents may include, but are not limited to: submission of assignments other than your own, receiving or sharing prior knowledge of test questions, sharing or receiving information during a test by any means (including electronic), possession of any electronic device (including cell phones) during a test except for an approved calculator, sharing or receiving knowledge of a test with students who have not yet written the test, sharing a calculator or formula sheet during the test, using a solutions manual to prepare submitted assignments.

The instructor may identify academic integrity concerns with submissions for a graded aspect of the course. In such cases, the instructor may set up a meeting with individual student(s) to further assess knowledge in the given area. This assessment can either confirm the original mark, or can be considered in place of the initial assessment to increase or decrease the original mark. All such cases will be documented with the Department Head.

The uploading of test, exam, assignment, laboratory, and project questions or prompts to, as well as the downloading of answers or responses from ChatGPT and other on-line services is a breach of academic integrity. Academic integrity violations will be dealt with according to Bylaw 31. Typical sanctions for a first offense range from a zero grade to a formal censure listed on your transcript.

Per the University Policy on Student Code of Conduct,

> ***Plagiarism*** *is the act of copying, reproducing or paraphrasing portions of someone else's published or unpublished material*

> *(from any source, including the internet), without proper acknowledgement. Plagiarism applies to all intellectual endeavours: creation and presentation of music, drawings, designs, dance, photography and other artistic and technical works. In the case of oral presentations, the use of material that is not one's own, without proper acknowledgment or attribution, constitutes plagiarism and, hence, academic dishonesty.* [Source]

For more information on academic integrity and student misconduct please refer to Bylaw 31.

General Class Expectations

Attendance and punctuality

Attendance in classes and labs is critical to student success; students should seize the opportunity to share and discuss information in labs, tutorials, and classes. Questions solved in the lectures and tutorial sessions will be similar to the homework problems. A good understanding of the process of solving these problems will help with the homework. The solution to homework problems will not be provided. It is your responsibility to find out what you missed from a classmate and complete any missed work in the event of missing a class, tutorial, or lab.

Acceptable Use of Technology During Class

The use of technology during lectures and tutorials is limited to resources associated with this course, such as lecture notes and property data information. Social media and general web surfing are never acceptable uses of technology during class; additionally, you distract the students around you. If a situation arises where you need to communicate by e-mail or cell phone, please respect your fellow students and leave the classroom to attend to the matter. You may return to class when the matter is resolved.

Classroom Conduct

The classroom environment is premised on commitment to professionalism, respect, honesty, and privacy. In this context, students

are expected to:

- Represent themselves honestly in all communications, applications, assignments, tests, examinations, and other correspondence.
- Respect the need of others to work in an environment that is conducive to learning in any setting.
- Be courteous and polite in all verbal or electronic exchanges with instructor and fellow classmates.
- Be active and engaged participants in the learning process.
- Respect the personal information and privacy of others.
- Respect all copyright laws.

While participating in this course, students are encouraged to engage in appropriate behaviors. Inappropriate behaviors may include:

- Using email or login account information that is not your own.
- Engaging in any behavior that may be disruptive to other learners in the learning environment.
- Writing, using, sending, downloading, or displaying any information that is hostile, insulting to others, derogatory, obscene, harassing, threatening or otherwise offensive.
- Reproducing course content or reposting course materials without explicit permission.

Communication Policy

Students are encouraged to utilize office hours to ask questions. When sending emails to your instructor and/or teaching assistants, please keep the following in mind:

- Only emails sent from your UWindsor address will be responded to. This is in-line with university policy that requires that all email correspondence between university personnel and students be through the university system.
- It is impossible for us to check and respond to student emails during every hour of every day. If you send me or your teaching assistant an email, be patient - we will respond as quickly as we can.

- Do not wait to email a question about the exam, an assignment, or class just before these things occur. If you do, chances are your question will go unanswered.
- Always be courteous and respectful in your email correspondence.
- Practice good writing even in your email messages. Try to avoid text messaging 'shorts' and slang, bad grammar, and avoidable spelling mistakes.
- Include an informative subject line, a salutation (e.g., Dear Dr. Lastname), a body, and a closing (e.g., Best regards, Name and student number).
- A template for an email to your professor that you may edit and use as needed can be found here.

Intellectual Property

Copyright of Course Materials

Course materials are the intellectual property of the instructor of the course and are protected by copyright laws. Course materials include streamed lectures, lecture notes, tutorials, lab manuals, slides or other digital presentations, assignments, exams, supplemental materials, and other digital course materials.

Course materials are made available to you for your own study and instructional purposes only and are not for redistribution, resale, or profit. Please note that students may not reuse or repost these course materials without the permission of the instructor. Sharing course materials to a third-party website can lead to a violation of Copyright law.

Student Recording of Lectures

Students are **not** permitted to record lectures in any format (audio, video, photograph, etc.). Posting any recordings you may make to other websites without the permission of the instructor may constitute copyright infringement and will be subject to the University's misconduct policies, at minimum.

Student Perceptions of Teaching (SPT)

The SPT survey will be administered during the last two weeks classes. As I value your feedback, I encourage you to take the time to complete the survey.

Bylaws and Policies

- Senate bylaws can be found at http://www.uwindsor.ca/secretariat/49/senate-bylaws
- Senate policies can be found at http://www.uwindsor.ca/secretariat/48/senate-policies

Feeling Overwhelmed?

From time to time, students face obstacles that can affect academic performance. If you experience difficulties and need help, it is important to reach out to someone. For help addressing mental or physical health concerns on campus, contact (519) 253-3000:

- Student Health Services at ext. 7002 (http://www.uwindsor.ca/studenthealthservices/)
- Student Counselling Centre at ext. 4616 (http://www.uwindsor.ca/studentcounselling/)
- Peer Support Centre at ext. 4551

A full list of on-and off-campus resources is available at http://www.uwindsor.ca/wellness.

Student Accessibility Services

Student Accessibility Services (SAS) (https://www.uwindsor.ca/studentaccessibility/) provides a variety of services and supports to students with documented disabilities (including: learning disabilities, attention deficit/hyperactivity disorder, acquired brain injuries, vision, hearing and mobility impairments, chronic medical conditions, and psychiatric issues).

If you have, or think you may have a disability, you may wish to visit SAS to learn how best to meet your academic goals. Students with disabilities who require academic accommodations in this course must contact an Advisor in SAS (lower level of Dillon Hall, (519) 253-3000 ext. 6172, or

online at https://www.uwindsor.ca/studentaccessibility/) to complete SAS Registration and receive the necessary Letters of Accommodation.

After registering with SAS, you must present your Letter of Accommodation and discuss your needs with me as early in the term as possible.