<div align="center">

THE UNIVERSITY OF WESTERN ONTARIO

DEPARTMENT OF COMPUTER SCIENCE LONDON,
ONTARIO, CANADA

Computer Science 3357a
Computer Networks I
Course Syllabus - Fall 2019

</div>

1   Course Description

This course provides an introduction to concepts and issues involved in computer networks and data communications. Topics include the Internet, protocol layers and their service models (both the OSI and TCP/IP models), network programming, principles of reliable data transfer, congestion control, routing, error detection and correction techniques, analog and digital data signaling and transmission, and a variety of other topics in network security, multimedia networking, mobile and wireless data communications, and network management, as time permits.

2   Lecture Topics

The following list of topics may be covered, depending on time and the dynamics of the semester.

- *Networking fundamentals.* A history of computer networking and the Internet; the structure of the Internet; connectionless and connection-oriented services; circuit switching and packet switching fundamentals; protocols; layered protocol architectures and service models.

- *A tour of protocol layers.* The OSI and TCP/IP layered architectures; the application layer and sample application services; transport layer services, including discussions of the principles of reliable data transfer and congestion control; network layer services, including routing and multicasting; data link layer services, including error detection and correction techniques and a variety of protocols (Ethernet, ATM, wireless 802.11b, etc.); physical layer services, including signaling, analog and digital data transmission, and channel capacity.

- *Network programming.* Socket programming; TCP and UDP programming interfaces; asynchronous communications; advanced socket options and programming techniques.

- *Advanced topics.* Multimedia networking; network security; wireless and mobile computing; network management.

3   Prerequisites / Antirequisites

Prerequisites

- Computer Science 2210a/b and 2211a/b

- Students are assumed to be familiar with the Python programming language

Antirequisites

- ECE 4436a/b

<div align="center">

1

</div>

Note: Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you will be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

4   Instructor

Name	Office	Office Hours	Email
James Ciesla	MC 365	Wed 10:30-11:30am (or by appointment)	jaciesla@uwo.ca

TA Consulting hours will be posted in OWL during the second or third week of the course.

5   Course Web Site

The course web site is hosted via Western's OWL System, which can be accessed at the following address:

https://owl.uwo.ca

All course materials will be posted at this site. Lecture notes may be posted after lectures on this site, and announcements will be posted on the main page. It is the student's responsibility to check the course web site on a frequent and regular basis.

6   Required Textbook

Computer Networking: A Top-Down Approach
James F. Kurose and Keith W. Ross
Pearson, 7th Edition, 2016
ISBN: 978-0-13-359414-0

There will be one copy of the text available at the Taylor Library on 1-day reserve.

It is expected that students follow along in the textbook and read the sections and chapters corresponding to the lectures given.

7   Lecture and Lab Schedule

There are 3 lecture hours per week.

Lecture Section	Room	Times
001	SEB-1200	Wed 11:30am-12:30pm
001	SEB-1200	Fri 9:30am-11:30am

See the online timetable at:

https://studentservices.uwo.ca/secure/Timetables/mastertt/ttindex.cfm

8 Lectures

Copies of lecture notes will be available on the course web site after each lecture for the purpose of review. You are advised that these are copies of the instructor's notes and are not complete course notes. They are not a substitute for attending lectures.

Be advised that lecture notes are provided as a *courtesy* and are *not a right*. If class attendance becomes an issue, the instructor reserves the right to stop posting and/or remove lecture notes from the course web site at any time.

9 Student Evaluation

Students will be evaluated based on the following components:

	Weight	Out (Tentative)	Due (Tentative)
Assignment 1	5%	Fri Sep 20, 2019	Fri Oct 4, 2019
Assignment 2	20%	Fri Oct 4, 2019	Fri Oct 25, 2019
Assignment 3	25%	Fri Oct 25, 2019	Fri Nov 22, 2019
Test	15%		Fri Nov 01, 2019 (in class)
Final Exam	35%		Final exam period

Notes:

- If, for any reason, the schedule given above cannot be adhered to, the marks will be prorated as follows:

  - The assignments are worth a total of 50%. If any assignments must be cancelled, the remaining individual assignment weights will be prorated to add up to 50%.
  - The tests/exams are worth a total of 50%. If any tests/exams must be cancelled, the remaining individual test/exam weights will be prorated to add up to 50%.

- There will be no makeup exams or assignments, except for students requesting special consideration for religious reasons. These students must have notified the course instructor and filed documentation with their Dean's office at least 2 weeks prior to the date of the exam.

- If you miss an evaluation for any other reason and present valid documentation to the Dean's office, your final exam mark will be weighted to include the weight of the missed item. You must notify the course instructor within a week of the missed evaluation and documentation must be received by your Dean's office within 2 weeks of the missed evaluation.

- All assignments are due by 23:59:59 on their specified due dates. Due dates are subject to change.

- To be eligible to receive a passing grade in the course, your mark on the final exam must be at least 45%, and your weighted average on the assignments must be at least 45%. Otherwise, the maximum overall mark you can receive is 45%. To be eligible to receive a grade of 60% or higher, your mark on the final exam must be at least 50%, and your weighted average on the assignments must be at least 50%. Otherwise, the maximum overall mark you can receive is 58%.

10 Assignments

10.1 General

- All assignments are to be completed individually.

- Assignment descriptions, including updates and clarifications, will be posted on the course web site.

- Instructions for the submission of assignments will also be posted on the course web site.

- It is the student's responsibility to keep up-to-date backups of assignment files in case of system crashes or other unforeseen events.

- Assignments are marked by teaching assistants. Every effort will be made to return marked assignments within 3 weeks of the assignment due date.

- If you have any questions regarding an assignment mark, you must first contact and discuss your concerns with the TA who marked the assignment. If the matter remains unresolved, you may then take your concerns to your course instructor.

- The marks for all assignments will be posted by the end of the term. It is your responsibility to ensure that the posted marks are correct.

10.2 Submission of Assignments

- All assignments require electronic submission only. No paper submission will be required.

- Electronic submissions will be made via OWL.

- Instructions for submitting programming assignments will be posted on the course web site.

10.3 Late Assignments

- All assignments are due on Fridays by 23:59:59.

- Saturday and Sunday count as one day; that is, assignments submitted between Saturday at 00:00:00 and Sunday at 23:59:59 are considered only one day late.

- Late penalties will be assessed as follows:

Submitted by	Days late	Penalty
Friday at 23:59:59	0	0%
Sunday at 23:59:59	1	4%
Monday at 23:59:59	2	8%
Tuesday at 23:59:59	3	16%

- *An assignment which is more than 3 days late (i.e. submitted after Tuesday) will not be accepted.*

- **No extensions** will be given for assignments.

    - Weekends already count as one day, and the late penalty is relatively light, so you're already getting a break.

- **–** However, in the event of serious medical or compassionate grounds, you should follow the procedure for Academic Accommodation for Medical Illness, as given in section 13.

10.4   Programming Assignment Marking Schemes

- A programming assignment is considered to be "working" if it is shown to satisfy all the requirements specified in the assignment description, including correct results.

- Note that a programming assignment is an exercise meant to give you practice in certain concepts. Therefore, a program that produces the correct output is not necessarily a "working" program; it must also satisfy the specifications given in the assignment description.

- Other criteria in terms of which an assignment will be evaluated include coding style, comments, and efficiency.

11   Exams

- There will be a 45-minute, in-class test on Friday November 01, 2019.

- A 3-hour, closed-book final exam will be held at the end of the course, during the final exam period.

- For both exams, each student will be permitted to bring in one 8.5" by 11" sheet containing *original, hand-written* notes on both sides. Sheets that have been photocopied, contain text that has been shrunk in some manner, or that are deemed to have been produced by anything/anyone other than the student by hand using a pen or pencil will be confiscated at exam time.

- No calculators, electronic devices, or reference materials of any kind (other than the "cheat sheet" discussed above) are allowed.

- Each student must achieve a grade of at least 45% on the final exam in order to be given a passing grade in the course.

- Students must bring their UWO identification to the exam.

- The final exam is scheduled by the Office of the Registrar during the final exam period. Details will be provided when they are available. Students are advised not to make travel plans until they have consulted the final exam schedule.

- As an important note, computer-marked multiple-choice exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

12   Success Strategies

We want to see you succeed in this course. Most students typically find this course to be interesting. Get engaged and make the most of it. Here are some tips on doing well in CS 3357a:

- *Come to class.* Yes, you *could* just read the textbook, but exposing yourself to the material twice (in lecture and in your readings) will help you to master it. The lectures also introduce real world examples of networking, you might be surprised just how much it affects the world around us.

- *Start your assignments early.* This is not first year anymore. Your assignments will likely take you a while to complete, and putting yourself under time pressure does not make them any easier.

- *Read the textbook.* There is a large amount of material covered in this course. The textbook is quite readable, and will help you to understand the concepts presented. Keep up with your readings. Aim to read 5 pages each night.

- *Ask questions.* Don't be shy. Feel free to contact the TAs or your instructor when you have tried in earnest to solve a problem and cannot figure it out.

- *Struggle.* With that said, do not immediately ask for help when you encounter a problem. Try to figure it out on your own. It is in struggling through a problem that one learns the most.

- *Get to know WireShark.* Early in September, while things are not too busy, consider downloading and installing the network tool WireShark. It is a powerful tool for analyzing network traffic and is referenced numerous times throughout the textbook, plus we will be using it for our assignments!

13   Academic Accommodation for Medical Illness

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or supporting documentation to the Academic Counselling Office of your home faculty as soon as possible.

If you are a science student, the Academic Counselling Office of the Faculty of Science is located in WSC 191, and can be contacted at 519-661-3040 or scibmsac@uwo.ca.

A student requiring academic accommodation due to illness must use the Student Medical Certificate when visiting an off-campus medical facility:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform_15JUN.pdf

For further information, please consult the university's medical illness policy at:

http://www.uwo.ca/univsec/pdf/academic policies/appeals/accommodation medical.pdf

Below is a link to the policy on Accommodation Consideration for Student Absences:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf

14   Course Communications

Students should check the course web site (in OWL) and their uwo.ca email on a regular basis. This is the primary method by which information will be disseminated to all students in the class. The missing of critical information due to your failure to check the course web site or email cannot be used as a basis for appeal.

You should note that email at WTS and other email providers may have quotas or limits on the amount of space they dedicate to each account. Unchecked email may accumulate beyond those limits and you may be unable to retrieve important messages from your instructors. The failure to receive an email due to your account being over its quota cannot be used as a basis for appeal. You are expected to keep sufficient free space in your email account to accommodate incoming email.

15   Computing Facilities

Each student will be given an account on the Computer Science Department senior undergraduate computing facility, GAUL. In accepting the GAUL account, a student agrees to abide by the department's Rules of Ethical Conduct.

After-hours access to some Computer Science lab rooms is granted electronically by student card. If a card is lost, a replacement card will no longer open these lab rooms, and the student must bring the new card to a member of the Systems Group in Middlesex College Room 345.

16   Accessibility Statement

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x82147 for any specific question regarding an accommodation.

The policy on Accommodation for Students with Disabilities can be found here:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_disabilities.pdf

17   Tutoring

The role of tutoring is to help students understand course material. Tutors should not write part or all of an assignment for the students who hire them. Having employed the same tutor as another student is not a legitimate defense against an accusation of collusion, should two students hand in assignments judged similar beyond the possibility of coincidence.

18   Ethical Conduct and Academic Offences

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a scholastic offence, at the following address:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

All assignments must be completed individually. You may discuss approaches to problems with other students; however, the work handed in must be your individual effort.

Students must write their essays and assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a serious and major academic offence (see Scholastic Offence Policy in the Western Academic Calendar).

Assignments that are judged to be the result of academic dishonesty will, for the student's first offence, be given a mark of zero with an additional penalty equal to the weight of the assignment. Students are responsible for reading and respecting the Computer Science Department's policy on Scholastic Offences and Rules of Ethical Conduct.

19   Use of Plagiarism-Checking Software

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com http://www.turnitin.com

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

20   Support Services

Learning-skills counsellors at the Student Development Centre are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling. The Student Development Centre is available at:

http://www.sdc.uwo.ca

Students who are in emotional/mental distress should refer to Mental Health@Western for a complete list of options about how to obtain help:

http://www.health.uwo.ca/mental health

Additional student-run support services are offered by the USC:

http://westernusc.ca/services

Registrar Services are available at:

http://www.registrar.uwo.ca

[*] Accessibility statement
Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Student Accessibility Services (SAS) at 661-2147 if you have any questions regarding accommodations.

[**] Acknowledgment of the Science Student Donation Fund
This course is supported by the Science Student Donation Fund. If you are a BSc or BMSc student registered in the Faculty of Science or Schulich School of Medicine and Dentistry, you pay the Science Student Donation Fee. This fee contributes to the Science Student Donation Fund, which is administered by the Science Students' Council (SSC). One or more grants from the Fund have allowed for the purchase of equipment integral to teaching this course. You may opt out of the Fee by the end of September of each academic year by completing the online form linked from the Faculty of Science's Academic Counselling site. For further information on the process of awarding grants from the Fund or how these grants have benefitted undergraduate education in this course, consult the Chair of the Department or email the Science Students' Council at ssc@uwo.ca.