

**Western University**  
**Faculty of Engineering**  
**Department of Electrical and Computer Engineering**

**SE 4430A: Introduction to Computer Networking, Security and IoT Systems**

**Course Outline 2022-23**

**Description:** This course introduces the fundamental concepts of communication networks, network security, and Internet of Things (IoT) network systems. The objective of the course is to allow students to develop a thorough understanding of the architecture of networks, IoT network system protocols (e.g., WiFi, LoRA, and Zigbee) and security.

**Academic Calendar Copy:** Principles of computer networking architecture/layers and protocols, IoT network systems, protocols, security, and connections to cloud services with an emphasis on the ability to interface and collect data from things and move them securely through the internet to process in public and private data centers.

**Contact Hours:** 3 lecture hours/week, 2 laboratory hours/week, 0.5 course.

**Antirequisite:** ECE 4436A.

**Prerequisites:** Engineering Science 1036A/B or Computer Science 1026A/B.

**CEAB Academic Units:** Engineering Science 75%, Engineering Design 25%.

**Required Textbook:**

James F. Kurose & Keith W. Ross, Computer Networking: A Top-Down Approach, Pearson, 7th Edition, ISBN-10: 0133594149, 2016.

Qusay F. Hassan, Internet of Things A to Z: Technologies and Applications, Wiley-IEEE Press, ISBN: 978-1-119-45674-2, 2018.

**Recommended References:**

1. IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things, 1st edition Published by Cisco Press, 2017.
2. Andrew S. Tanenbaum and David J. Wetherall, Computer Networks (5th Edition), Prentice Hall, 2010
3. W. Stallings, Data and Computer Communications, Prentice Hall, 2002.
4. Leon-Garcia and I. Widjaja, Communication Networks: Fundamental Concepts and Key Architectures, McGraw-Hill, 2000.

**General Learning Objectives (CEAB Graduate Attributes)**

Knowledge Base (KB)	I	Use of Engineering Tools (ET)	A	Impact of Engineering on Society and the Environment (IESE)	
Problem Analysis (PA)	D	Individual and Team Work (ITW)		Ethics and Equity (EE)	
Investigation (IN)		Communication Skills (CS)		Economics and Project Management (EPM)	
Design (DE)	D	Professionalism (PR)		Life-Long Learning (LL)	

Notation: *I: Introduced, D: Developed, A: Applied, or blank.* I – The instructor will introduce the topic at the level required. It is not necessary for the student to have seen the material before. D – There may be a reminder or review, but the student is expected to have seen and been tested on the material before taking the course. A – It is expected that the student can apply the knowledge without prompting (e.g., no review).

<b>Course Topics and Specific Learning Outcomes</b>	<b>CEAB Graduate Attributes Indicators</b>
<p><b>1. Computer Networks and the Internet</b></p> <p>At the end of this section, students will be able to:</p> <ul style="list-style-type: none"> <li>a. Demonstrate an understanding of the Internet</li> <li>b. Demonstrate knowledge of the Network Edge.</li> <li>c. Demonstrate knowledge of the Network Core.</li> <li>d. Demonstrate knowledge of the Network Access and Physical Media</li> <li>e. Demonstrate an understanding of ISPs and Internet Backbones.</li> <li>f. Demonstrate an understanding of Delay and Loss in Packet-Switched Networks.</li> <li>g. Demonstrate an understanding of Protocol Layers and Their Service Models.</li> </ul>	<p><b>Taught but not assessed</b></p> <p><b>KB1 KB2 PA2</b></p> <p><b>KB1 KB2</b></p>
<p><b>2. Application Layer</b></p> <p>At the end of this section, students will be able to:</p> <ul style="list-style-type: none"> <li>a. Demonstrate an understanding of the Principles of Application Layer Protocols.</li> <li>b. Demonstrate an understanding of the Web, HTTP, FTP, DNS, and DNS-The Internet's Directory Service protocols.</li> <li>c. Understand and apply Socket Programming with TCP.</li> <li>d. Understand and apply Socket Programming with UDP.</li> </ul>	<p><b>PA2 PA3</b></p> <p><b>PA4</b></p> <p><b>PA3 ET2 ET 3</b></p> <p><b>PA3 ET2 ET 3</b></p>
<p><b>3. Transport Layer</b></p> <p>At the end of this section, students will be able to:</p> <ul style="list-style-type: none"> <li>a. Demonstrate an understanding of Transport-Layer Services.</li> <li>b. Demonstrate an understanding of Multiplexing and De-multiplexing.</li> <li>c. Demonstrate an understanding of Connectionless Transport: UDP.</li> </ul>	<p><b>PA3 PA4</b></p> <p><b>PA3 PA4</b></p>

<ul style="list-style-type: none"> <li>d. Demonstrate an understanding of the Principles of Reliable Data Transfer.</li> <li>e. Build and apply the Principles of Reliable Data Transfer.</li> <li>f. Demonstrate an understanding of Connection-Oriented Transport: TCP.</li> <li>g. Design and apply the Principles of Congestion Control.</li> <li>h. Demonstrate an understanding of TCP Congestion Control.</li> </ul>	<p>PA3 PA4</p> <p>DE2 DE3 ET2</p> <p>PA2 PA3</p> <p>DE3 ET2 ET3</p> <p>PA3 PA4</p>
<p><b>4. Networking Layer &amp; Routing</b></p>	
<p>At the end of this section, students will be able to:</p>	
<ul style="list-style-type: none"> <li>a. Demonstrate an understanding of Network Service Model.</li> <li>b. Build and apply the Routing Principles.</li> <li>c. Demonstrate an understanding of Hierarchical Routing.</li> <li>d. Demonstrate an understanding of The Internet Protocol.</li> <li>e. Demonstrate an understanding of Routing and the Internet.</li> <li>f. Demonstrate an understanding of what's Inside a Router.</li> <li>g. Demonstrate an understanding of IPv6.</li> <li>h. Demonstrate an understanding of Multicast Routing.</li> <li>i. Demonstrate an understanding of Mobility and the Network Layer.</li> <li>j. Software Defined Networking (SDN).</li> <li>k. Simple Network Management Protocol (SNMP).</li> </ul>	<p>PA2 PA3</p> <p>DE2 DE3 ET3</p> <p>PA3 PA4</p> <p>PA3 PA4</p> <p>PA3 PA4</p> <p>PA3 PA4</p> <p>PA3 PA4</p> <p>PA3 PA4</p> <p>PA3 PA4</p> <p>PA3 PA4</p>
<p><b>5. Link Layer</b></p>	
<p>At the end of this section, students will be able to:</p>	
<ul style="list-style-type: none"> <li>a. Demonstrate an understanding of Data Link Layer Services.</li> <li>b. Demonstrate an understanding of Multiple Access Protocols.</li> <li>c. Demonstrate an understanding of LAN Addresses and ARP.</li> <li>d. Demonstrate an understanding of Ethernet.</li> <li>e. Demonstrate an understanding of Hubs, Bridges and Switches functionalities.</li> <li>f. Demonstrate an understanding of PPP: The Point-to-Point Protocol.</li> <li>g. Data Centre Networking.</li> </ul>	<p>PA3 PA4</p> <p>PA3 PA4</p> <p>PA3 PA4</p> <p>PA3 PA4</p> <p>PA3 PA4</p> <p>PA3 PA4</p> <p>PA3 PA4</p>
<p><b>6. Network Security</b></p>	
<p>At the end of this section, students will be able to:</p>	
<ul style="list-style-type: none"> <li>a. Understand the general requirements of the network security protocols.</li> <li>b. Understand several real-world security protocols including SSL, IPsec and Kerberos.</li> <li>c. Distinguish different ways to authenticate and establish a session key over a network.</li> <li>d. Explain how to achieve perfect forward secrecy and the benefits (and potential drawbacks) of using timestamps.</li> </ul>	<p>PA1</p> <p>PA2</p> <p>PA2 PA3</p> <p>PA2 PA3</p>
<p><b>7. IoT Systems and Security</b></p>	

At the end of this section, students will be able to:	
a. Explain the scope of the Internet of Things.	<b>PA1</b>
b. Understand IoT network traffic and Web services.	<b>PA1, PA2</b>
c. Understand IoT technologies including Wi-Fi, Bluetooth Low Energy, Zigbee, and LoRa.	<b>PA1, PA2</b>
d. Understand the general IoT security attacks.	<b>PA1, PA2, ET2</b>

## Evaluation

Course Component	Weight
Laboratory	30%
Term Quizzes	30%
Final Examination	40%

**Laboratory:** There will be 3 laboratory assignments each spanning three weeks (on average). All laboratory assignments have equal weights. Laboratory assignments may be programming-based. Python programming language will be used in this course.

**Midterm Test:** There will be no rescheduling of the midterm test. If a student misses the midterm test, the weight assigned to the final examination may be adjusted accordingly; please read the *Missed Midterm Examinations* section below for more information. During exams/tests all electronic devices must be powered down and stored out of reach. The only exception is a simple scientific non-programmable, which is permitted. Other devices capable of substituting for a simple calculator (e.g., a phone, laptop, iPad), are not permitted.

**Final Examination:** The final examination will take place during the regular examination period.

**Late Submission Policy:** Late report submissions will be penalized 10% per day.

**Use of English:** In accordance with Senate and Faculty Policy, students may be penalized up to 10% of the marks on all assignments, tests, and examinations for improper use of English. Additionally, poorly written work with the exception of the final examination may be returned without grading. If resubmission of the work is permitted, it may be graded with marks deducted for poor English and/or late submission.

**Attendance:** Any student who, in the opinion of the instructor, is absent too frequently from class, laboratory, or tutorial periods will be reported to the Dean (after due warning has been given). On the recommendation of the department, and with the permission of the Dean, the student will be debarred from taking the regular final examination in the course.

**Absence Due to Illness or Other Circumstances:** Students should immediately consult with the instructor or department Chair if they have any problems that could affect their performance in the course. Where appropriate, the problems should be documented (see the attached “Instructions for Students Unable to Write Tests or Examinations or Submit Assignments as Scheduled”). The student should seek advice from the instructor or department Chair regarding how best to deal with

the problem. Failure to notify the instructor or department Chair immediately (or as soon as possible thereafter) will have a negative effect on any appeal.

For more information concerning medical accommodations, see the relevant section of the Academic Handbook:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_medical.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf)

For more information concerning accommodations for religious holidays, see the relevant section of the Academic Handbook:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_religious.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf)

**Missed Midterm Examinations:** If a student misses a midterm examination, she or he must follow the Instructions for Students Unable to Write Tests and provide documentation to Undergraduate Services Office within 24 hours of the missed test. If accommodation is granted, the department will decide whether to provide a make-up test or allow reweighting of the test, where reweighting means the marks normally allotted for the midterm will be added to the final exam. If no reasonable justification for missing the test can be found, then the student will receive a mark of zero for the test.

If a student is going to miss the midterm examination for religious reasons, they must inform the instructor in writing within 48 hours of the announcement of the exam date or they will be required to write the exam.

**Cheating and Plagiarism:** 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. University policy states that cheating, including plagiarism, is a scholastic offence. The commission of a scholastic offence is attended by academic penalties, which might include expulsion from the program. If you are caught cheating, there will be no second warning.

All required papers may be subject to submission for textual similarity review to commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted will be included as source documents on 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>).

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, in the relevant section of the Academic Handbook:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf)

**Use of Electronic Devices:** In-class use of electronic devices, i.e., laptops, iPods, ... is strongly discouraged, while the use of headphones and/or phones is not permitted. Any student who, in the opinion of the instructor, is too much distracted by the electronic devices may be asked to leave the current lecture and/or reported to the Dean. In the case of repeated behavior, on the

recommendation of the department, and with the permission of the Dean, the student will be debarred from taking the regular final examination in the course.

During exams/tests all electronic devices must be powered down and stored out of reach. The only exception is a simple scientific non-programmable, which is permitted. Other devices capable of substituting for a simple calculator (e.g., a phone, laptop, iPad), are not permitted.

**Use of Personal Response Devices (“Clickers”):** The Personal Response App (“iClicker Reef”) may be used in classes. It is the responsibility of the student to ensure that the smart device with the app installed are activated and functional. Students must see their instructor if they have any concerns about whether the app is malfunctioning. Students must use only their own iclicker device and corresponding account. Thus:

- The use of somebody else’s clicker account in class will constitute a scholastic offence,
- The possession of an iclicker tied to another student's account will be interpreted as an attempt to commit a scholastic offence.

**Policy on Repeating All Components of a Course:** Students who are required to repeat an Engineering course must repeat all components of the course. No special permissions will be granted enabling a student to retain laboratory, assignment, or test marks from previous years. Previously completed assignments and laboratories cannot be resubmitted by the student for grading in subsequent years.

**Internet and Electronic Mail:** Students are responsible for regularly checking their Western e-mail and the course web site (<https://owl.uwo.ca/portal/>) and making themselves aware of any information that is posted about the course.

**Accessibility:** Please contact the course instructor if you require material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 519-661-2111 ext. 82147 for any specific question regarding an accommodation.

**Support Services:** Office of the Registrar, <http://www.registrar.uwo.ca/>  
Student Development Centre, <http://www.sdc.uwo.ca/>  
Engineering Undergraduate Services, <http://www.eng.uwo.ca/undergraduate/>  
USC Student Support Services, <http://westernusc.ca/services/>

Students who are in emotional/mental distress should refer to Mental Health @ Western, [http://www.health.uwo.ca/mental\\_health/](http://www.health.uwo.ca/mental_health/), for a complete list of options about how to obtain help.

**STATEMENT ON GENDER-BASED AND SEXUAL VIOLENCE**

Western [is committed to reducing incidents of gender-based and sexual violence](#) and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced gender-based or sexual violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts, [here](#). To connect with a case manager or set up an appointment, please contact [support@uwo.ca](mailto:support@uwo.ca).

**INSTRUCTIONS FOR STUDENTS UNABLE TO WRITE TESTS OR EXAMINATIONS OR SUBMIT ASSIGNMENTS AS SCHEDULED**

If, on medical or compassionate grounds, you are unable to write term tests or final examinations or complete course work by the due date, you should follow the instructions listed below. You should understand that academic relief will not be granted automatically on request. You must demonstrate to your department (or the Undergraduate Services Office) that there are compelling medical or compassionate grounds that can be documented before academic relief will be considered. Different regulations apply to term tests, final examinations and late assignments. Please read the instructions carefully.

**A. GENERAL REGULATIONS & PROCEDURES**

1. All first-year students will report to the Undergraduate Services Office by submitting the [Academic Consideration Request Form](#), for all instances.
2. If you are an upper year student and you are missing a test/assignment/lab or examination you will report the absence by submitting [Academic Consideration Request Form](#). Absences worth LESS THAN 10% of your mark, will be processed by your department office. If your course work is worth 10% OR MORE of your final grade, your request will be processed by the Undergraduate Services Office.
3. Check the course outline to see if the instructor has a policy for missed tests, examinations, late assignments or attendance.
4. Documentation must be provided as soon as possible. If no one is available in your department office or the Undergraduate Services Office, leave a message clearly stating your name & student number and reason for your call. The department telephone numbers are given at the end of these instructions.
5. If you decide to write a test or an examination you should be prepared to accept the mark you earn. Rewriting tests or examinations or having the value of a test or examination reweighted on a retroactive basis is not permitted.

**B. TERM/MIDTERM TESTS**

1. If you are in first year and you are unable to write a midterm/term test, contact the Undergraduate Services Office, SEB 2097 PRIOR to the scheduled date of the test.
2. If you are an upper year student and you are unable to write a midterm/term test, inform your instructor PRIOR to the scheduled date of the test and request relief through the [Academic Consideration Request Form](#). If the instructor is not available, leave a message for him/her at the department office. If the test is worth LESS THAN 10% of your mark, your request for relief will be processed by your department office. If the test is worth MORE THAN 10% of your final grade your request for relief will be processed by the Undergraduate Services Office.
3. Be prepared to attach supporting documentation to the Department Chair and/or the Undergraduate Services Office through the online form (see next page for information on documentation).
4. Discuss with the instructor if and when the test can be rescheduled. The approval of the Chair or the Undergraduate Services Office is required when rescheduling midterm/term tests.

### C. FINAL EXAMINATIONS

1. If you are unable to write a final examination, contact the Undergraduate Services Office PRIOR TO THE SCHEDULED EXAMINATION TIME to report your absence using the [Academic Consideration Request Form](#) and request permission to write a Special Final Examination. If no one is available in the Undergraduate Services Office, leave a message clearly stating your name & student number.
2. Be prepared to provide the Undergraduate Services Office with supporting documentation (see next page for information on documentation) the next day, or as soon as possible (in cases where students are hospitalized). The following circumstances are not considered grounds for missing a final examination or requesting special examinations: common cold, headache, sleeping in, misreading timetable and travel arrangements.
3. In order to receive permission to write a Special Examination, you must obtain the approval of the Chair of the Department **and** the Associate Dean and in order to apply you must submit an "[Application for a Special Exam](#)" form. The Undergraduate Services Office will then notify the course instructor(s) and reschedule the examination on your behalf.

**PLEASE NOTE: It is the student's responsibility to check the date, time and location of the Special Examination.**

### D. LATE ASSIGNMENTS

1. Advise the instructor if you are having problems completing the assignment on time (**prior** to the due date of the assignment).
2. Be prepared to submit the [Academic Consideration Request Form](#) and provide documentation if requested by the instructor (see reverse side for information on documentation).
3. If you are granted an extension, establish a due date. The approval of the Chair of your Department (or the Assistant Dean, First Year Studies, if you are in first year) is not required if assignments will be completed prior to the last day of classes.
4.
  - i) Extensions beyond the end of classes must have the consent of the instructor, the department Chair and the Associate Dean, Undergraduate Studies. Documentation is mandatory.
  - ii) A Recommendation of Incomplete Form must be filled out indicating the work to be completed and the date by which it is due. This form must be signed by the student, the instructor, the department Chair and the Associate Dean, Undergraduate Studies.

### E. SHORT ABSENCES

If you miss a class due to a minor illness or other problem, check your course outlines for information regarding attendance requirements and make sure you are not missing a test, laboratory or assignment. Cover any readings and arrange to borrow notes from a classmate.

### F. EXTENDED ABSENCES

If you are absent more than one week or if you get too far behind to catch up, you should consider reducing your workload by dropping one or more courses. (Note drop deadlines listed below). You are strongly encouraged to seek advice from your Academic Counsellor in the Undergraduate Services Office.

### G. DOCUMENTATION

If you consulted an off-campus doctor or Student Health Services regarding your illness or personal problem, **you must provide the doctor with a Student Medical Certificate** to complete at the time of your visit and then bring it to the Department (or the Undergraduate Services Office). **This note must contain the following information: severity of illness, effect on academic studies and duration of absence. Regular doctor's notes will not be accepted; only the Student Medical Certificate will be accepted.**

**In Case of Serious Illness of a Family Member:** Provide a Student Medical Certificate to your family member's physician to complete and bring it to the Department (or the Undergraduate Services Office if you are in first year).

**In Case of a Death:** Obtain a copy of the death certificate or the notice provided by the funeral director's office. You must include your relationship to the deceased and bring it to the Department (or the Undergraduate Services Office if you are in first year).

**For Other Extenuating Circumstances:** If you are not sure what documentation to provide, ask the Departmental Office (or the Undergraduate Services Office if you are in first year) for direction.

**Note: Forged notes and certificates will be dealt with severely. To submit a forged document is a scholastic offence (see below).**



## H. ACADEMIC CONCERNS

1. You need to know if your instructors have a policy on late penalties, missed tests, etc. This information may be included on the course outlines. If not, ask your instructor(s).
2. **You should also be aware of attendance requirements in some courses. You can be debarred from writing the final examination if your attendance is not satisfactory.**
3. If you are in academic difficulty, check out the minimum requirements for progression in the calendar. If in doubt, see your Academic Counsellor.

**Calendar References:** Check these regulations in your 2023 Western Academic Calendar available at [www.westerncalendar.uwo.ca](http://www.westerncalendar.uwo.ca).

### **Absences Due to Illness:**

[https://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_13\\_5](https://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_13_5)

### **Academic Accommodations for Students with Disabilities:**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_10](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_10)

### **Academic Accommodations for Religious or Holy Days:**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_16](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_16)

### **Course Withdrawals:**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=6&SelectedCalendar=Live&ArchiveID=#Page\\_75](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=6&SelectedCalendar=Live&ArchiveID=#Page_75)

### **Examinations:**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?PolicyCategoryID=5&command=showCategory&SelectedCalendar=Live&ArchiveID=#Page\\_78](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?PolicyCategoryID=5&command=showCategory&SelectedCalendar=Live&ArchiveID=#Page_78)

### **Scheduling of Term Assignments:**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=5&SelectedCalendar=Live&ArchiveID=#SubHeading\\_78](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=5&SelectedCalendar=Live&ArchiveID=#SubHeading_78)

### **Scholastic Offences:**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page\\_20](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=1&SelectedCalendar=Live&ArchiveID=#Page_20)

### **Student Medical Certificate:**

<https://www.eng.uwo.ca/files/undergraduate/student-medical-certificate.pdf>

### **Engineering Academic Regulations:**

[http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=4&SelectedCalendar=Live&ArchiveID=#Page\\_86](http://www.westerncalendar.uwo.ca/PolicyPages.cfm?Command=showCategory&PolicyCategoryID=4&SelectedCalendar=Live&ArchiveID=#Page_86)

**Note:** These instructions apply to all students registered in the Faculty of Engineering regardless of whether the courses are offered by the Faculty of Engineering or other faculties in the University.

<b><u>Add Deadlines:</u></b>	First term half course (i.e. “A” or “F”)	September 15, 2023
	Full courses and full-year half course (i.e. “E”, “Y” or no suffix)	September 15, 2023
	Second term half course (i.e. “B” or “G”)	January 16, 2024

<b><u>Drop Deadlines:</u></b>	First term half course without penalty (i.e. “A” or “F”)	November 13, 2023
	Full courses and full-year half courses without penalty (i.e. “E”, “Y” or no suffix)	November 30, 2023
	Second term half or second term full course without penalty (i.e. “B” or “G”)	March 7, 2024

### **Contact Information:**

Undergraduate Services Office:	SEB 2097 Phone: 519-661-2130	E-mail: <a href="mailto:engugrad@uwo.ca">engugrad@uwo.ca</a>
Chemical & Green Process Engineering:	TEB 477 Phone: 519-661-2131	E-mail: <a href="mailto:cbeugrad@uwo.ca">cbeugrad@uwo.ca</a>
Civil Engineering:	SEB 3005 Phone: 519-661-2139	E-mail: <a href="mailto:civil@uwo.ca">civil@uwo.ca</a>
Computer, Electrical, Mechatronic Systems & Software Engineering	TEB 279 Phone: 519-661-3758	E-mail: <a href="mailto:eceugrad@uwo.ca">eceugrad@uwo.ca</a>
Integrated Engineering	ACEB 2410 Phone: 519-661-6725	E-mail: <a href="mailto:engceli@uwo.ca">engceli@uwo.ca</a>
Mechanical Engineering:	SEB 3002 Phone: 519-661-4122	E-mail: <a href="mailto:mmeundergraduate@uwo.ca">mmeundergraduate@uwo.ca</a>