

1. Course Introduction

CS 1027B: Computer Science Fundamentals II

Winter 2021

Lectures: a combination of lecture recordings, demos, and zyBooks readings, posted weekly on OWL

Labs: 1 one-hour lab per week for 10 weeks

Prerequisites

CS 1025A/B or CS 1026A/B (ES 1036A/B engineering students), with a mark of at least 65% in either. You cannot do either course concurrently with this course.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may 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.

2. Instructor Information

Section 001: **Bryan Sarlo** (bsarlo@uwo.ca) *Course Coordinator

Section 002: **Brent Davis** (bdavis56@uwo.ca)

Section 003: **Bryan Sarlo** and **Brent Davis**

Please note that we do not check email very much on weekends so don't expect a quick response then. During weekdays, we are generally quick to respond to emails.

Students must use their Western (@uwo.ca) email addresses when contacting their instructor. Include the course code "CS 1027" in the subject line or the email may go unseen. It is your responsibility to make sure the email is clearly labelled so it does not get lost or filtered out.

Note that Western email and other email providers such as gmail.com or yahoo.com may have quotas or limits on the amount of space for your inbox. If you let your email accumulate there, your mailbox may fill up and you may lose important email from your instructors. Losing email that you have forwarded to an alternative email address is not an excuse for missing out on important information.

Office Hours are held on Zoom. The schedule is posted in the Consulting Schedule tab.

3. Course Syllabus, Schedule, Delivery Mode

This course is a continuation for both Computer Science 1025A/B and Computer Science 1026A/B. Data organization and manipulation; abstract data types and their implementations in a modern programming language; lists, stacks, queues, trees; recursion; file handling and storage; searching and sorting. The course focuses on the Object-Oriented Programming paradigm and the Java language.

Course Learning Outcomes

- Program in an object-oriented language, namely Java
- Create classes and using inheritance for sub-classes
- Differentiate arrays and linked data structures
- Implement and use abstract data types, i.e. stacks, queues, lists, and trees
- Debug code and use exceptions to handle bugs gracefully
- Identify the different parts of memory during the execution of a Java program
- Program algorithms from pseudo-code or a set of instructions

Course Topics

The lectures are delivered asynchronously, meaning that they are pre-recorded and posted each week rather than held live during scheduled class times.

Week #	Dates	Topics Covered
Week 1	Jan. 11 - 15	Course overview and introduction
Week 2	Jan. 18 - 22	OOP
Week 3	Jan. 25 - 29	Inheritance
Week 4	Feb. 1 - 5	Memory; I/O; Exception Handling; Debugging
Week 5	Feb. 8 - 12	Collections; Generics; Linked Data Structures
Week 6	Feb. 22 - 26	Stacks
Week 7	Mar. 1 - 5	Queues
Week 8	Mar. 8 - 12	Lists; Comparable; Iterators
Week 9	Mar. 15 - 19	Analysis of Algorithms
Week 10	Mar. 22 - 26	Memory Management; Recursion
Week 11	Mar. 29 - Apr. 2	Trees
Week 12	Apr. 5 - 9	Sorting

Online Etiquette

Some components of this course may involve synchronous online interactions. To ensure the best experience for both you and your classmates, please honour the following rules of etiquette:

- Use your computer and/or laptop if possible (as opposed to a cell phone or tablet)
- "Arrive" to class on time
- Ensure that you are in a private location to protect the confidentiality of discussions in the event that a class discussion deals with sensitive or personal material
- To minimize background noise, kindly mute your microphone for the entire class until you are invited to speak, unless directed otherwise
- Unless invited by your instructor, do not share your screen in the meeting
- In order to give us optimum bandwidth and web quality, please turn off your video camera for the entire class unless you are invited to speak or asking a question
- Be prepared to turn your video camera off at the instructor's request if the internet connection becomes unstable

The course instructor will act as moderator for the class and will deal with any questions from participants. To participate please consider the following:

- If you wish to speak, select the blue "raise hand" function and wait for the instructor to acknowledge you before beginning your comment or question.
- Kindly remember to unmute your microphone and turn on your video camera before speaking.
- Self-identify when speaking.
- Kindly remember to select the "raise hand" function again to lower your hand, mute your mic and turn off your video camera after speaking (unless directed otherwise).

General considerations of "netiquette":

- Keep in mind the different cultural and linguistic backgrounds of the students in the course.
- Be courteous toward the instructor, your colleagues, and authors whose work you are discussing.
- Be respectful of the diversity of viewpoints that you will encounter in the class and in your readings. The exchange of diverse ideas and opinions is part of the scholarly environment.

Note that disruptive behaviour of any type during online classes, including inappropriate use of the chat function, is unacceptable. Students found guilty of "Zoom-bombing" a class, or of other serious online offenses, may be subject to disciplinary measures under the Code of Student Conduct.

Key Sessional Dates

- Classes begin: January 11
- Reading Week: February 13-21
- Classes end: April 12
- Exam period: April 14-30

4. Course Materials

Course Materials

ZyBooks

We are using ZyBooks (an online textbook) for this course. It is a required text, supplementing the lectures to help you understand course materials through a combination of readings and interactive modules, like quiz questions and animations. It costs about \$90 CAD and the steps to subscribe are listed here:

1. Sign in or create an account at learn.zybooks.com (NOTE: please use your Western email when subscribing)
2. Enter zyBook code: **UWOCOMPSCI1027ABSpring2021**
3. Subscribe

A portion of your mark (5%) will come from completing the activities within the book. Note that you don't have to get all the questions correct on the first try to get the full 5%. You will have to complete both the "Participation" and "Challenge" activities in the assigned sections.

OWL

Students should check OWL (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class. Students are responsible for checking OWL on a regular basis.

All course material will be posted to OWL: <http://owl.uwo.ca>.

If students need assistance, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

Technical Requirements

Students are required to have a relatively modern computer and reliable Internet connection.

Microphones and webcam are recommended for communication with the instructor or TAs during consulting hours.

The exams may be proctored with Proctortrack or another proctoring software. In this case, a working webcam is required.

5. Methods of Evaluation

Methods of Evaluation

The overall course grade will be calculated as listed below:

Method of Evaluation	Weight
Assignments (4)	32% (4 at 8% each)
Labs (10)	10% (10 at 1% each)
ZyBooks Activities	5%
Midterm Test	16%
Final Exam	37%

Schedule (dates are tentative and may be subject to change)

Assessment / Test Title	Submission Due Date / Test Date
Assignment 1	Tuesday, February 9
Assignment 2	Thursday, March 4
Assignment 3	Wednesday, March 24
Assignment 4	Monday, April 12
Midterm Test	Saturday, February 27
Final Exam	TBD

Assignments

All assignments are due via OWL at 11:55pm on the due date unless stated otherwise. If an assignment has to be canceled for any reason, the remaining assignments will be re-weighted to add up to 32%.

Late Policy on Assignments: 10% penalty per day up to 2 days late. Assignments will not be accepted more than 2 days after the due date and will be graded as 0. If you are ill or have another valid reason to not be able to complete an assignment by the due date, you must obtain accommodations from your academic counsellor or a self-reported absence, and then send an email to the instructor to follow up. This will give you an extension (generally 48 hours) to complete the assignment.

Assignments will be submitted through Gradescope (not OWL) unless otherwise stated. You have free access to Gradescope as a Western student. Steps to submit on Gradescope will be explained in more detail closer to the deadline of the first assignment.

Labs

Lab instructions will be available on the course website in advance. It is expected that students will come prepared to the labs by reading the instructions and performing any preparatory work in advance.

- The 10 labs begin in the second week of classes
- There is one additional, optional lab in the first week of classes to help you get started (not for marks)
- There is one lab each week except in the final two weeks
- Each completed lab is worth 1% of your final grade
- To receive credit for a lab, you must complete the work as explained in the instructions and submit the completed .java files on OWL by the specified due date each week

- If you are ill or have another valid reason to not be able to complete a lab, you must obtain accommodations from your academic counsellor or a self-reported absence, and then send an email to the instructor to follow up. The weight of accommodated missed labs will be pushed to the final exam. Labs that are missed without accommodations will be a 0 and will not be re-weighted
- Labs not submitted on time will not be accepted or will incur large late penalties

Midterm and Final Exam

There will be no makeup Midterm Exam, except for students requesting a Special Midterm Exam 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 Midterm Exam.

If you miss the midterm exam for any other reason, follow the procedure for Academic Accommodation for Medical Illness given below. If accommodation is approved by your Dean's office, your final exam mark will be re-weighted to include the weight of the midterm exam.

To be eligible to receive a passing grade in the course (50% or higher), your average on the exams must be at least 45% and your average on the 4 assignments must be at least 45%. Otherwise your final grade cannot be greater than 45%. To be eligible to receive a grade of 65% or higher in the course (i.e. to be eligible to go on in a Computer Science module), your average on the exams must be at least 50% and your average on the 4 assignments must also be at least 50%. Otherwise your grade cannot be greater than 60%.

If for any reason the midterm examination has to be cancelled, the final exam will be worth 53% of the final mark.

Technical Requirements for Exams

Tests and examinations in this course may be **linear format** which means you will not be able to backtrack to a previous question.

Tests and examinations in this course may be conducted using the remote proctoring service Proctortrack. By taking this course, you are consenting to the use of this software and declaring that you have a reliable internet connection with sufficient capacity to support video proctoring. You will be required to complete a video face scan and show photo identification. You will also be monitored during tests and examinations. The video and desktop screen are recorded and uploaded to Proctortrack servers and your instructor may review the recording. More information about this remote proctoring service is available in the Online Proctoring Guidelines at the following link:

<https://www.uwo.ca/univsec/pdf/onlineproctorguidelines.pdf>

Completion of this course may require you to have a device that meets the technical requirements for this service. Information about the technical requirements are available at the following link:

<https://www.proctortrack.com/tech-requirements/>

Please contact the course instructor if you are not able to meet the technical requirements or if you have any questions about the use of this remote proctoring service for this course.

6. Accommodation and Accessibility

Accommodation Policies

Students with disabilities work with Accessible Education (formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The Academic Accommodation for Students with Disabilities policy can be found at:

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

Academic Consideration for Student Absence

Students will have up to two (2) opportunities during the regular academic year to use an on-line portal to self-report an absence during the semester, provided the following conditions are met: the absence is no more than 48 hours in duration, and the assessment for which consideration is being sought is worth 30% or less of the student's final grade. Students are expected to contact their instructors within 24 hours of the end of the period of the self-reported absence, unless noted on the syllabus. Students are not able to use the self-reporting option in the following circumstances:

- for exams scheduled by the Office of the Registrar (e.g., December and April exams)
- absence of a duration greater than 48 hours,
- assessments worth more than 30% of the student's final grade,
- if a student has already used the self-reporting portal twice during the academic year

If the conditions for a Self-Reported Absence are not met, students will need to provide a Student Medical Certificate if the absence is medical, or provide appropriate documentation if there are compassionate grounds for the absence in question. Students are encouraged to contact their Faculty academic counselling office to obtain more information about the relevant documentation.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**

For policy on Academic Consideration for Student Absences - Undergraduate Students in First Entry Programs, see:

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

and for the Student Medical Certificate (SMC), see:

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

Religious Accommodation

Students should consult the University's list of recognized religious holidays, and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the Western Multicultural Calendar:

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see

http://www.registrar.uwo.ca/examinations/exam_schedule.html).

[optional] If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See Academic Calendar for details (under Special Examinations).

7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy, https://wts.uwo.ca/identity/identities_and_access/index.html, the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

Contingency plan for an in-person class pivoting to 100% online learning

In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, all remaining course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will not change. Any remaining assessments will also be conducted online as determined by the course instructor.

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 Web site:

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

Labs and assignment submissions may be subject to plagiarism-detection software such as MOSS. Code from two or more students that is found to be very similar may be identified as plagiarism and standard procedures will ensue.

E-Proctoring: Tests and examinations in this course will be conducted using the remote proctoring service, Proctortrack. By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide personal information (including some biometric data) and the session will be recorded. More information about this remote proctoring service is available in the Online Proctoring Guidelines at the following link: <https://www.uwo.ca/univsec/pdf/onlineproctorguidelines.pdf>

Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. Information about the technical requirements are available at the following link: <https://www.proctortrack.com/tech-requirements/>

8. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on add/drop courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Student Accessibility

Services (SAS) at (519) 661-2147 if you have any questions regarding accommodations.

[New] Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>.

[optional] Learning-skills counsellors at the Student Development Centre (<http://www.sdc.uwo.ca>) 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.

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

Additional student-run support services are offered by the USC, <http://westernusc.ca/services>.