CS 1027B: Computer Science Fundamentals II
Winter 2023
Course Outline

1. Course Information

Lecture Schedule

Section Number / Instructor	Lecture Days and Times	Location
Section 001 (LEC) *Max Magguilli*	Tuesdays 9:30am to 11:30am Thursdays 9:30am to 10:30am	NSC-1
Section 002 (LEC) *Bryan Sarlo*	Tuesdays 12:30pm to 2:30pm Thursdays 12:30pm to 1:30pm	AHB-1R40
Section 003 (LEC) *Roberto Solis-Oba*	Tuesdays 3:30pm to 5:30pm Thursdays 3:30pm to 4:30pm	HSB-40

Lab Schedule
This term there are 35 lab sections. Check Western's Academic Time Table 2022/2023 to see times and locations for these sections.

List of 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

Instructors	Email	Office	Office Hours
Max Magguilli	lmagguil@uwo.ca	MC 386	TBD
Bryan Sarlo (Course Coordinator)	bsarlo@uwo.ca	MC 361	TBD
Roberto Solis-Oba	solis@csd.uwo.ca	MC 417	TBD

Students must use their Western (@uwo.ca) email addresses when contacting their instructors or TAs. Include the course code (CS1027) in the subject line of emails you send regarding this course.

3. Course Syllabus, Schedule, Delivery Mode

Course Description
A continuation for both Computer Science 1025A/B and Computer Science 1026A/B. We will study data organization and manipulation, object-oriented principles, abstract data types and their implementations in Java, lists, stacks, queues, trees, recursion, file and memory organization.

Course Learning Outcomes
- Program in an object-oriented language, namely Java
- Create classes and use inheritance for creating sub-classes
- Identify and implement 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

Lecture Topics
- Object-Oriented Programming Principles
- Inheritance and Polymorphism
- Exceptions and Debugging
- Collections and Generics
- Linked Data Structures
- Stacks, Queues, and Lists
- Memory Management
- Recursion
- Trees
- Sorting

Key Sessional Dates
  Classes begin: January 9, 2023 (January 10 for this course)
  Winter Reading Week: February 18 – 26, 2023
  Classes end: April 10, 2023
  Exam period: April 13 – 30, 2023

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, affected 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.

Lab Schedule

Lab #	Week
Lab 1	Jan. 16 – 20
Lab 2	Jan. 23 – 27
Lab 3	Jan. 30 – Feb. 3
Lab 4	Feb. 6 – 10
Lab 5	Feb. 13 – 17
Lab 6	Feb. 27 – Mar. 3
Lab 7	Mar. 6 – 10
Lab 8	Mar. 13 – 17
Lab 9	Mar. 20 – 24
Lab 10	Mar. 27 – 31

**Please note that lab sections 035, 036, 037 and 038 are held in MC-325. This room does not have desktop stations, so all students in these labs will need to bring their own laptops to complete the labs.

4. Course Materials

Students are responsible for checking the course OWL site (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. All course material will be posted to OWL: http://owl.uwo.ca. The CS 1027B course site on OWL is labelled as "**COMPSCI 1027B 001 FW22**". This is the name of the OWL site for all 3 sections of the course.

If students need assistance with the course OWL site, 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
Stable internet connection; computer that can run Java and an IDE for Java (i.e. Eclipse). Students in lab sections 035, 036, 037, and 038 will need to have a laptop that they can bring to their weekly lab to complete the lab assignments on.

There is a required digital textbook, ZyBooks, for this course. A portion of your overall grade will come from the completion of the readings and activities in the ZyBook. If you have taken CS 1027A/B before and subscribed to the ZyBook then, you can contact support@zybooks.com to ask them for the new book for free since you have previously paid for the book. You **cannot** use your progress from a previous term towards this term – you must get the new book but the cost is waived when re-taking it.

Anyone who has not taken subscribed to the ZyBook for this course previously will have to follow these steps to subscribe now:

1. Sign in or create an account at learn.zybooks.com
2. Enter zyBook code: **UWOCOMPSCI1027ABWinter2023**
3. Subscribe

You **must** use your Western email address and the same full name as in your Western profile. You may lose marks if you sign up to ZyBooks with a different email address or name.

5. Methods of Evaluation

The overall course grade will be calculated as listed below:

Assignments (4)   32%   (8% each)
Labs (10)   8%   (1% each; lowest 2 are dropped)
ZyBooks   5%
Midterm Test   20%
Final Exam   35%

Assignments

There are four assignments that require you to apply the topics you learned from the lectures and/or labs and to implement Java programs.

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

Late assignment submissions will be subject to a penalty of 10% per day late up to a maximum of 3 days. After 3 days, assignments will not be accepted anymore and will be marked as 0. If you have an illness or other valid reason for an extension, you must contact your academic counsellor and obtain an official accommodation from them and then follow up with your instructor to determine a reasonable extension.

Re-submissions are allowed but note that re-submissions after the deadline will be penalized for being late, regardless of when the initial submission was made.

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. We will not accept assignments submitted via email or any other format.

A portion of each assignment's grade will come from auto-graded tests and the rest will come from programming style, formatting, logic, comments, etc. Some of the tests will be provided, but note that additional tests may be run that are hidden from you, so you should create your own additional tests to ensure your code works properly in all cases. It is your responsibility to ensure the tests run and pass on Gradescope in order to get full marks (if the tests pass on Eclipse but not on Gradescope, you will not get those marks).

Assignments are to be done individually, not in groups. The submitted code will be run through a similarity-checking software to look for cheating. **Do not copy or share code in any way**.

Tentative Assignment Due Dates:

Assignment 1	Wednesday, February 8
Assignment 2	Monday, February 27
Assignment 3	Tuesday, March 21
Assignment 4	Thursday, April 6

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.

- There are 10 weekly labs which should each take 1 hour or less to complete.
- The labs begin the week of January 16-20
- **You must attend the lab section in which you are registered**. You **cannot** attend a different lab section even if you have a valid reason to miss your scheduled lab. You will receive a mark of 0 if you try to attend a different lab section.
- Each completed lab is worth 1% of your final grade, and we will drop the lowest 2 labs at the end of the term.
- To receive credit for a lab, you must complete the lab work during the scheduled slot and submit the specified files on OWL by the end of the day in which you had your scheduled lab.
- Coming to your scheduled lab section with the work already complete **is not permitted**. You will receive a mark of 0 if you try to do this.
- The labs are generally pass/fail, however you could get a partial mark if you missed a significant portion of the required work, or if you forget to upload the files on OWL after attending your lab.
- Since we are dropping the lowest 2 labs, you can miss up to 2 labs without affecting your mark. If you must miss more than 2 labs, you should contact your academic counsellor to request accommodations for the missed labs. If they approve your absence for the additional labs (after the first 2), then the weight of those additional missed labs will be shifted to your final exam.
- Labs that are missed without accommodations will be given a grade of 0 and will not be re-weighted. Only two are dropped so absences after that will be considered a 0 toward your grade.
- It is your responsibility to sign the TA's attendance sheet and to show your completed lab work to them before leaving the lab room. It is also your responsibility to submit the specified files from the lab on OWL by the end of the day in which you had your lab.

ZyBooks

There are weekly ZyBooks readings with activities that must be completed. Your ZyBooks progress will only be checked at the end of the term so you aren't obligated to do the readings during the week in which they are assigned – however, it is recommended that you do to stay on top of the material and leave yourself time at the end of the term to avoid having to do it all at once!

There are participation activities and challenge activities. You are **required to complete BOTH types of activities** in all the assigned sections of the book. Completing all the participation and challenge activities in all the required sections is worth 5% of your course grade. If you complete a portion of them, your grade will be based on the amount of these activities you completed.

ZyBooks allows you to try repeatedly so you will get the marks if you complete them, even if it takes you multiple tries to complete any activities.

Midterm

The midterm is tentatively scheduled for <mark>Saturday, March 4 from 6-8pm</mark>.

The midterm is 2 hours in length and is a combination of Multiple Choice, Written/Drawn Answers, and Algorithm Design. All portions of the exam are written on paper, not with computers. No electronic devices are allowed.

There will **not** be a make-up midterm. If you cannot write the midterm for a valid reason (i.e. exam conflict, medical, or religious reasons), you will have to contact your academic counsellor to request accommodations to miss the midterm. If you obtain such accommodations, the weight of the midterm will be shifted to the final exam, making it worth 55%.

Without such accommodations, missing the midterm will result in a mark of zero on the midterm and it cannot be made up.

Final Exam

The final exam will be scheduled by the University. The exam period is from April 13 to 30 and the exact date, time, and location for our exam will likely be announced in March.

The final exam is 3 hours in length and is a combination of Multiple Choice, Written/Drawn Answers, and Algorithm Design. All portions of the exam are written on paper, not with computers. No electronic devices are allowed.

Grade Requirements

To be eligible to receive a grade of 50% or higher (i.e. to pass the course), you must achieve:

- at least 45% average between the midterm and final exams, and
- at least 45% average between the four assignments

If you fail to meet **either** of these conditions, your final mark will be either 45% or your calculated grade, whichever is lower.

To be eligible to receive a grade of 65% or higher (i.e. to be eligible to go on in a Computer Science module), you must achieve:

- at least 50% average between the midterm and final exams, and
- at least 50% average between the four assignments

If you fail to meet **either** of these conditions, your final mark will be either 60% or your calculated grade, whichever is lower.

6. Student Absences

If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below.

Assessments worth less than 10% of the overall course grade:

You can miss up to 2 labs without any penalty since we drop the lowest 2 labs. If you miss several labs due to an ongoing illness or other valid reason, you should contact your academic counsellor to seek accommodations for the other labs you miss and then contact your course instructor about it to get those labs reweighted to the final exam.

If you are unable to submit an assignment by the given due date, you must contact academic counselling to request an accommodation. If they approve, you will be given an extension, typically 48 hours, but the duration of the extension may depend on the timeline given by the counsellor. Without approval from counselling, extensions will not be given and assignments will be subject to late penalties.

Assessments worth 10% or more of the overall course grade:

For work totalling 10% or more of the final course grade, you must provide valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at

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

The Student Medical Certificate is available at

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

Absences from Final Examinations

If you miss the Final Exam, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

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 the Academic Calendar for details (under Special Examinations).

Note: missed work can *only* be excused through one of the mechanisms above. Being asked not to attend an in-person course requirement due to potential COVID-19 symptoms is **not** sufficient on its own.

6. Accommodation and Accessibility

Religious Accommodation

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

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

Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic Accommodation_disabilities.pdf.

7. Academic Policies

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

In accordance with policy,

https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf,

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 their official university address is attended to in a timely manner.

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.

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

Code submitted for labs, assignments, and/or exams may be run through comparison-checking software such as MOSS to look for cases of cheating.

In the event of health lock-down, tests and exams in this course may be conducted using a remote proctoring service. 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**. Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. More information about this remote proctoring service, including technical requirements, is available on Western's Remote Proctoring website at:

https://remoteproctoring.uwo.ca.

8. Support Services

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

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

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 sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Learning-skills counsellors at the Student Development Centre (https://learning.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.

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/.

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