

COMPSCI 1020B Course Outline Winter 2025

1. Course Information

Computer Science 1020B – Foundations of Computer Science

Course Lecture Times and Location

| | | |
|-----------|---------------|---------------|
| Monday | 9:30-11:30 AM | Middlesex 110 |
| Wednesday | 9:30-10:30 AM | Middlesex 110 |

List of Prerequisites:

- (Ontario Math MHF4U and Ontario Math MCV4U) or MATH 0110.
- Registration in the Computer Science Program or completion of first-year requirements.

Unless you have either the requisites for this course or written special permission from the Department of Computer Science 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 if you are removed from a course for failing to have the necessary prerequisites.

2. Instructor Information

| Instructor | Email | Office | Office Hours |
|------------------------|------------------------------------------------------|-----------------------|--------------|
| Mohsen Mollahajiaghaei | mmollaha@uwo.ca | Middlesex College 128 | TBA |

Notes on contacting me:

- You **must** use your Western (@uwo.ca) email addresses when contacting me.
- Emails Responses are not guaranteed on the weekend or in the evening.
- Any email sent to an instructor SHOULD say CS1020B in the subject line. This helps us categorize your email as “not spam” and give it a higher priority.

Information on contacting course teaching assistants will be available on course website after the course begins.

3. Course Syllabus, Schedule, Delivery Mode

Course Location

| | | |
|-----------|---------------|--|
| Monday | 9:30-11:30 AM | |
| Wednesday | 9:30-10:30 AM | |

Important Dates

Classes begin: Monday, January 06, 2025

Spring Reading Week: Saturday, February 15 - Sunday, February 23, 2025

Classes end: Friday, April 04, 2025

Exam period: Monday, April 07- Wednesday, April 30, 2025

Course Topics: The topics may be subject to change. The order of the topics may be adjusted.

- Introduction to Set Theory: sets and basic operations.
- Introduction to Logic: introduction to basic logic including connectives, truth tables, and quantifiers.
- Numbers Systems: binary, decimal, and hexadecimal, and their importance in computer algorithms and data representation.
- Techniques of Counting: basics of combinatorics, learning to count.
- Operations, and Functions: algebraic concepts and functions.
- Proof fundamentals: how to construct and validate proofs, focusing on logical reasoning and analytical methods.
- Probability Theory: basic probability concepts, including conditional probability and Bayes' theorem.
- Computer Science roadmap: An introduction to the field of computer science and its various subdisciplines and applications.

4. Course Materials

Textbook

There is a required digital textbook, *Discrete Mathematics* (ZyBooks) for this course. The price for the zyBook is \$75 Canadian.

To register for the zyBook:

1. Sign up or sign in at learn.zybooks.com

2. Enter zyBook code: Will be announced
3. Subscribe to the book.

You **must use your Western email address and the same full name** as in your Western profile.

Zybooks: There are weekly ZyBooks readings with activities that must be completed. It is recommended that you complete the exercises 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.

Course Materials

All course material will be posted to OWL: <https://westernu.brightspace.com/>

Students are responsible for checking the course OWL site (<https://westernu.brightspace.com/>) regularly for news and updates. This is the primary method by which information will be disseminated to all students in the class.

If students need assistance with the course OWL site, they can seek support on the [OWL Brightspace 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

You must have an internet connected device to access course materials and assignments via OWL. An internet connected device (laptop, phone or tablet) is recommended but not required for class.

5. Methods of Evaluation

Grading Scheme and Assessment Dates

The overall course grade will be calculated as listed below:

| | |
|--------------------------------------|-----|
| Assignments (3 assignments, 7% each) | 21% |
| Quizzes (7 quizzes, 2% each) | 14% |
| Tests (2 tests, 15% each) | 30% |
| Final Exam | 35% |

Quizzes: Quizzes are held in-class and will be 30 minutes in length. The following tentative topics are **not** final. Please consult the information provided in class for the final topics for each quiz. This course has 9 quizzes, and the 7 quizzes with the highest marks are counted towards your final grade. Each of the 7 quizzes that contribute to your grade are worth 2%.

| Quiz | Tentative topics |
|--------|------------------|
| Quiz 1 | Set theory |
| Quiz 2 | Logic |
| Quiz 3 | Logic |
| Quiz 4 | Counting |
| Quiz 5 | Numeration |

| | |
|--------|-------------------------|
| Quiz 6 | Functions and Relations |
| Quiz 7 | Proofs |
| Quiz 8 | Proofs |
| Quiz 9 | Probability |

Assignments: Assignments are due at 11:59 PM on the due dates. The assignments must be submitted through gradescope. Topics in each assignment will be finalized based on the pace of the class. Each assignment is worth 7% of your final grade.

Assignments are to be done individually, not in groups. The submitted assignments should be your own work. Do not:

- Show any part of your solutions to another student
- Send any part of your solutions to someone
- Upload any part of your solution to a publicly accessible location.
- Receive or accept any part of anyone else’s solutions.
- Use a generative AI tool to construct solutions to the assignment.
- Pay someone else to do the assignment for you

Any of the above actions constitute a violation of the academic integrity guidelines and may result in disciplinary action.

Late assignments: Late submissions may be submitted up to 3 days after the deadline without penalty. After 3 days, assignments will not be accepted and will be marked as 0. This does not account for accommodations. No accommodated assignments will be accepted more than one week after the assignment deadline – any accommodations that extend more than one week after the assignment deadline will result in the weight of that assignment being moved to the final exam.

Tests: Tests are held in class and are 60 minutes in length. The following tentative test topics are not final. Please consult with the resources provided in class in the week prior to the test. Each test is worth 15% of your final grade.

| Test | Date |
|--------|------------------|
| Test 1 | Monday, Feb 10 |
| Test 2 | Monday, March 10 |

There will **not** be any make-up tests. If you cannot write a test for a valid reason, the entire weight of the test will be shifted to the **final exam**.

- If you are given accommodation for one test, then the Final Exam will be worth $35+15=50\%$ of your final grade, while the other test will be worth 15% of your final grade.
- If you are given accommodation for both tests, then the final will be worth $35+30=65\%$ of your final grade.

Final Exam: The final exam will be scheduled by the Registrar's Office during the exam period. The final exam will be 3 hours in length. The final exam is cumulative (i.e., covers all material from the course).

All exams are closed book, no calculator, no electronic devices. You will be required to bring your photo ID/ student card to both tests and the final exam. The format of the tests and final exam includes a mixture of multiple choice and show-your-work long format problems. They may also include some true/false questions that require you to justify your response.

General information about missed coursework

Students must familiarize themselves with the *University Policy on Academic Consideration – Undergraduate Students in First Entry Programs* posted on the Academic Calendar:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration_Sep24.pdf

This policy does not apply to requests for Academic Consideration submitted for **attempted or completed work**, whether online or in person. The policy also does not apply to students experiencing longer-term impacts on their academic responsibilities. These students should consult [Accessible Education](#).

For procedures on how to submit Academic Consideration requests, please see the information posted on the Office of the Registrar's webpage:

https://registrar.uwo.ca/academics/academic_considerations/

All requests for Academic Consideration must be made within 48 hours after the assessment date or submission deadline.

All Academic Consideration requests must include supporting documentation; however, recognizing that formal documentation may not be available in some extenuating circumstances, the policy allows students to make one Academic Consideration request **without supporting documentation** in this

course. However, the final examination (scheduled during official examination periods) is **excluded** from this, and therefore always requires formal supporting documentation.

When a student *mistakenly* submits their one allowed Academic Consideration request **without supporting documentation** for the assessments listed above or those in the **Coursework with Assessment Flexibility** section below, the request cannot be recalled and reapplied. This privilege is forfeited.

Evaluation Scheme for Missed Assessments

If an assignment is not submitted by three days after the deadline and there is no accommodation for the assignment, it will receive a mark of zero. If an assignment has accommodation beyond one week from the assignment deadline, then the value of that assignment will be assigned to the final exam.

If a quiz is not submitted on the day of the assessment, it will be marked as zero. Only the top 7 of 9 quiz marks will be used to calculate the score for quizzes in the course. If a quiz is given an accommodation (beyond the first two missed quizzes), the quiz mark will be reweighted to the final exam. There are no make-up quizzes.

If a test is not submitted on the day of the assessment, it will be marked as zero. If a test is given an accommodation, the test mark will be reweighted to the final exam. There are no make-up tests.

When a student misses the Final Exam and their Academic Consideration has been granted, they will be allowed to write the Special Examination (the name given by the University to a makeup Final Exam). See the Academic Calendar for details (under [Special Examinations](#)), especially for those who miss multiple final exams within one examination period.

Coursework with Assessment Flexibility

By policy, instructors may deny Academic Consideration requests for the assessments with built-in flexibility.

Flexible Completion of Quizzes. This course has 9 quizzes, and the 7 quizzes with the highest marks are counted towards your final grade. Should extenuating circumstances arise, students do not need to request Academic Consideration for the first 2 missed quizzes. Academic consideration requests **will be denied** for the first 2 missed quizzes. Academic Consideration requests may be granted when students miss more than 2 quizzes, and these additional (3rd, 4th...) missed quizzes will be reweighted to the final exam.

Deadline with a No-Late Penalty Period for Assignments. Students are expected to submit each of the 3 assignments by the deadline listed. Should extenuating circumstances arise, students do not need to request Academic Consideration and they are permitted to submit their assignment up to 3 days past the deadline with no penalty. No assignments will be accepted (without academic consideration) more than 3 days past the deadline. Academic Consideration requests may be granted only for circumstances that started before the deadline and last longer than the Late Period (3 days).

6. Additional Statements

Religious Accommodation

When conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request an accommodation for their absence in writing to the course instructor and/or the Academic Advising office of their Faculty of Registration. This notice should be made as early as possible but not later than two weeks prior to the writing or the examination (or one week prior to the writing of the test).

Please visit the Diversity Calendars posted on our university's EDID website for the recognized religious holidays:

<https://www.edi.uwo.ca>.

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

Academic Policies

The website for Registrar Services is <https://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.

No electronic devices are permitted at the tests or at the final exam.

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:

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

Support Services

Please visit the Science & Basic Medical Sciences Academic Advising 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.

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 Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

if you have any questions regarding accommodations.

Learning-skills counsellors at Learning Development and Success (<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.