

COURSE OUTLINES (SYLLABI) FOR UNDERGRADUATE COURSES

(To be posted no later than the first day of class in the term a course is given)

CS2214B - Discrete Structures for Computing, Winter 2022 Course Outline

1. Course Information

Course Information:

Computer Science 2214B – Discrete Structures for Computing, Winter 2022.

Lectures: Monday 11:30am-1:30pm and Wednesday 11:30am-12:30pm, room WSC-55.

Tutorials: Wednesday 12:30pm-1:30pm, room WSC-55.

List of Prerequisites:

Either 1) Computer Science 1027A/B, Computer Science 1037A/B, or Computer Science 2101A/B, in each case with at least 65%, and 1.0 course with at least 60% in each from: Applied Mathematics 1201A/B, Numerical and Mathematical Methods 1412A/B, Numerical and Mathematical Methods 1414A/B, Calculus 1000A/B, Calculus 1301A/B, Calculus 1500A/B, Calculus 1501A/B, Mathematics 1600A/B, the former Applied Mathematics 1412A/B, the former Applied Mathematics 1414A/B, the former Applied Mathematics 1413; or 2) Integrated Science 1001X with at least 60%.

Antirequisites:

Mathematics 2151A/B, Mathematics 2155F/G.

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

Instructor: Dr. Federico Pasini

Email: fpasini@uwo.ca

Office hours time: Monday 1:30-2pm, or Wednesday 2:30-3:20pm, or by appointment (email).

Office hours format: in person (Monday, outside of WSC-55) or online (Wednesday, link available on the OWL website of the course); office hours by appointment can be either in person or online.

Students must use their Western (@uwo.ca) email addresses when contacting their instructors, and write “CS2214” in the email subject (to minimize the risk of the email to be flagged as spam).

3. Course Syllabus, Schedule, Delivery Mode

Learning objectives:

This course presents an introduction to the mathematical foundations of computer science, with an emphasis on mathematical reasoning, combinatorial analysis, discrete structures, applications and modeling, and algorithmic thinking.

Tentative table of contents of the course:

- Foundations: logic and proofs
- Induction and recursion
- Basic structures: sets, relations, and functions
- Sequences, series, and matrices
- Graphs
- Number theory and cryptography
- Principles of counting
- Discrete probability

Key sessional dates:

Classes begin: January 10, 2022

Reading Week: February 19–27, 2022

Classes end: April 8, 2022

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.

4. Course Materials

Suggested textbook:

K. Rosen, *Discrete Mathematics and Its Applications*, McGraw-Hill (available as eBook or print text).

OWL course website:

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. In particular,

- Lecture slides and all additional course material will be posted to OWL;
- Updates and messages regarding the course will be posted to OWL;

- Assignments will be posted by the instructor, and shall be submitted by students, via OWL.

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:

Students must have a reliable internet connection and computer that are compatible with online learning (including working microphone and webcam) and testing system requirements.

Protection of online content:

The instructor owns the intellectual property of the lectures and tutorials materials even when such materials are posted online. Students are not permitted to post lectures or tutorials materials, including assignments, assignment solutions, etc., to any other websites or platforms, or use the lecture recordings or materials for any other purpose than studying the course materials.

5. Methods of Evaluation

The overall course grade will be calculated as listed below:

4 Assignments	5% each
Midterm Test	32%
Final Exam	48%

Tentative evaluation schedule:

Assignment 1: due on Wed Jan 26 at 5pm via OWL;

Assignment 2: due on Wed Feb 9 at 5pm via OWL;

Midterm: Wed Mar 2, 12pm-1:20pm, room TBA (during class and tutorial);

Assignment 3: due on Wed Mar 9 at 5pm via OWL;

Assignment 4: due on Wed Mar 30 at 5pm via OWL;

Final exam: TBA.

The midterm and final exam are close-book written exams that will last approximately 1h20' and 2h, respectively; no calculators of any sort will be permitted in either.

Assignment descriptions will be posted on the OWL website of the course at least one week before the due date of the assignment. Any changes, updates, and clarifications to assignments will also be posted on the OWL website of the course. It is the responsibility of the students to monitor these pages closely.

The submission of assignments is electronic using OWL.

Assignments may be typed using a text editor or hand-written, and must be submitted in PDF format.

When a student submits an assignment for evaluation, this student automatically certifies that the material they have handed in is exclusively their own work.

It is the student's responsibility to keep up-to-date backups of assignment disk files in case of system crashes or inadvertently erased files.

Late assignment policy:

Generally, assignments will not be accepted after the deadline clearly marked on the OWL website of the course. The instructor may accept late assignments on a case by case basis, with a penalty of 40%. Students should contact the instructor directly within 48 hours of the original deadline. This late assignment policy and relative penalty does not apply in the presence of an approved academic accommodation or Self-Reported Absence (please see "Accommodated Evaluations" below).

Accommodated Evaluations:

If you are unable to meet a course requirement (final exam, midterm, or assignment due date) 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.

Generally, no extensions to assignments will be given (except for lengthy illness, or other compassionate grounds). In those cases where an extension is granted, only the course instructor can grant the extension. If you have serious medical or compassionate grounds for an extension, you should take supporting documentation to the office of the Dean of your faculty, who will contact the instructor. If a student misses an assignment for a legitimate reason, and presents valid documentation to the Academic Counselling Office (or uses a Self-Reported Absence), the instructor will either grant an extension, or distribute the weight of the assignment over the other assignments.

There will be no makeup Midterm Exam. If a student misses the Midterm Exam for a legitimate reason, and present valid documentation to the Academic Counselling Office or Dean's office, the Final Exam mark will be reweighed to include the weight of the Midterm Exam. The student must notify the course instructor within a week of the missed Midterm Exam, and documentation must be received by the Academic Counselling Office or Dean's office within 2 weeks of the missed exam.

6. Student Absences

Academic Consideration for Student Absences:

Students who experience an extenuating circumstance (illness, injury or other extenuating circumstance) sufficiently significant to temporarily render them unable to meet academic requirements may submit a request for academic consideration through the following routes:

- (i) Submitting a Self-Reported Absence (SRA) form provided that the conditions for submission are met. To be eligible for a Self-Reported Absence:
 - an absence must be no more than 48 hours
 - the assessments must be worth no more than 30% of the student's final grade
 - no more than two SRAs may be submitted during the Fall/Winter term

- (ii) For medical absences, submitting a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner to the Academic Counselling office of their Faculty of Registration.
- (iii) Submitting appropriate documentation for non-medical absences to the Academic Counselling office in their Faculty of Registration.

Note that in all cases, students are required to contact their instructors within 24 hours of the end of the period covered, unless otherwise instructed in the course outline.

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

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

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

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

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>.

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](#)).

7. 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 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,

8. 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 his/her official university address is attended to in a timely manner.

Electronic devices (phones, calculators, computers, etc.) will not be permitted on tests and exams.

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.

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>).

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.

In the event of health lock-down, tests and examinations 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>.

9. 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/>.

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

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/>.

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/mentalhealth>) 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>.