UNIVERSITY OF NEW BRUNSWICK
Faculty of Computer Science

CS1303: Discrete Structures
Course Syllabus
Fall 2021

Lecture Times: MWF 10:30-11:20 (Kinesiology 208)
Tutorials: Fri 9:30-10:20 (Head Hall C9)

Professor: Dr. Michael Fleming
Office: ITD-420
Office Hours: By appointment, either in person or on MS Teams

Email: mwf@unb.ca

Add/drop deadline: Friday, September 17
Withdrawal deadline: Monday, November 1

In addition to the CS1303 tutorials conducted by the instructor, there will be upper-year students offering tutoring sessions for questions related to CS1073, CS1083, CS1103, CS1203, and CS1303. A detailed schedule will be provided to the class when it is available.

We recognize and respectfully acknowledge that UNB course interactions take place on unsurrendered and unceded traditional lands of the Wolastoqiyik.

Objectives: The purpose of this course is to provide students with a solid foundation in areas of discrete mathematics that play an important role in computer science: logic (propositional and predicate), methods of mathematical proof (including induction), and set theory.

Textbook: Ted Sundstrom, *Mathematical Reasoning: Writing and Proof*, available on-line at
https://scholarworks.gvsu.edu/books/24

Organizational details:

- The class will meet **in person** during our scheduled lecture times (MWF, 10:30am). Students are expected to attend unless they are ill or have another valid reason, and should inform the instructor when they must miss a lecture.
- Tutorial sessions are not mandatory, but students are strongly encouraged to attend.
- Students who are unable to be in Fredericton at the beginning of the semester because of travel restrictions, etc., must notify the instructor and should also contact covidhelp@unb.ca
- Classes and tutorials will be recorded so that they can be reviewed by students later. Any students who have concerns about this should contact the instructor.
- Assignments will be submitted through Crowdmark. Details will be provided to students.

Evaluation:

Assignments:	30%	(10 assignments worth 3% each)
Tests (2):	25%	(worth 10%, 15%)
Final Exam:	45%	

Note: You must pass the final exam in order to earn a C or higher in the course.

Tests and exams will be closed-book, and no calculators or other aids will be permitted. Tests will be held in class on the dates shown in the class schedule (see next page), and the final exam will be scheduled by the Registrar's Office. Material presented in class will not necessarily be in the textbook. All presented or assigned material is testable.

Note: You must earn a C or higher in this course before you may take CS2333 or CS2383.

Assignments:
Assignment questions will be posted on the Desire2Learn system. Students will submit their assignments on-line, through Crowdmark.

Assignments submitted after the deadline, but less than 24 hours late, will be assessed a 20% penalty. Assignments more than 24 hours late are not accepted. Further extensions will be considered only for medical reasons or in other exceptional circumstances, and normally only if the instructor is contacted before the assignment deadline.

Plagiarism:
All students are expected to be familiar with the regulations on plagiarism and other academic offences given in the UNB Undergraduate Calendar. A definition of plagiarism is attached to this course outline.

You may discuss **general approaches** to assignment problems with classmates. However, these must be general and cannot include things such as detailed steps to follow in a calculation or proof. The written answers you submit **must** be your own work.

Tips for avoiding plagiarism:

- Do not copy solutions from other students or allow them to copy yours.
- Do not write anything down while discussing problems with others. Focus on understanding the material and then write your solution on your own at a later time.
- On each assignment, there will be an opportunity to acknowledge any help you receive from classmates or from any sources other than the textbook or class notes. For example, you might write: "I discussed problems 2 and 3 with classmates J. Doe and J. Smith. For help with problem 4, I consulted the book *Discrete Mathematics and Its Applications* by K. Rosen."

Topics covered: We will focus primarily on the first five chapters of the textbook by Ted Sundstrom. Topics will include:

- statements and conditional statements
- logical operators and truth tables
- logical equivalence
- mathematical quantifiers
- direct proofs
- proof by contradiction
- using cases in proofs
- mathematical induction
- other methods of mathematical proof
- sets, operations on sets, proving set properties
- additional topics (as time permits)

Course Schedule:

Week		Assignments	Tests
1	Sept. 8,10		
2	Sept. 13-17		
3	Sept. 20-24	Asst. 1 due Mon. Sept. 20	
4	Sept. 27 - Oct. 1	Asst. 2 due Mon. Sept. 27	
5	Oct. 4-8	Asst. 3 due Mon. Oct. 4	
6	Oct. 11-15 **(No class Oct. 11)**		Wed. Oct. 13 (10%)
7	Oct. 18-22	Asst. 4 due Mon. Oct. 18	
8	Oct. 25-29	Asst. 5 due Mon. Oct. 25	
9	Nov. 1-5	Asst. 6 due Mon. Nov. 1	
	Nov. 8-12	**No classes**	
10	Nov. 15-19	Asst. 7 due Mon. Nov. 15	Wed. Nov. 17 (15%)
11	Nov. 22-26	Asst. 8 due Mon. Nov. 22	
12	Nov. 29 - Dec. 3	Asst. 9 due Mon. Nov. 29	
13	Dec. 6, 8	Asst. 10 due Wed. Dec. 8	

Privacy Statement for Course Recordings:

The recordings of your classes are for your personal use for course purposes only and not to be shared with others.

Be respectful of your peers and instructors. Sharing of any personal information, including but not limited to personal views and opinions with others, other than for course purposes, is not permitted and may violate UNB's Policy for the Protection of Personal Information and Privacy.

Personal opinions, views, and commentary provided during a class may be considered personal information, which requires the consent of the person who provided it in order to share it ethically and legally.

The content shared by faculty and instructors is subject to copyright and cannot be shared without the explicit permission of the copyright owner, which may include but not be limited to the course instructor, their colleagues, textbook publishers, and multimedia vendor.

A. PLAGIARISM AND OTHER ACADEMIC OFFENCES
(From the 2021-2022 UNB Undergraduate Calendar)

Plagiarism includes:

1. quoting verbatim or almost verbatim from any source, regardless of format, without acknowledgment;
2. adopting someone else's line of thought, argument, arrangement, or supporting evidence (such as statistics, bibliographies, etc.) without indicating such dependence;
3. submitting someone else's work, in whatever form (essay, film, workbook, artwork, computer materials, etc.) without acknowledgment;
4. knowingly representing as one's own work any idea of another.

NOTE: In courses which include group work, a penalty may be imposed on all members of the group unless an act of plagiarism is identified clearly with an individual student or students.

Examples of other academic offences include: cheating on exams, tests, assignments or reports; impersonating somebody at a test or exam; obtaining an exam, test or other course materials through theft, collusion, purchase or other improper manner, submitting course work that is identical or substantially similar to work that has been submitted for another course; and more as set out in the academic regulations found in the Undergraduate Calendar.

Penalties for plagiarism and other academic offences range from a minimum of F (zero) in the assignment, exam or test to a maximum of suspension or expulsion from the University, plus a notation of the academic offence on the student's transcript. For more information, please see the Undergraduate Calendar, University Wide Academic Regulations, Regulation VIII.A, or visit: http://nocheating.unb.ca. It is the student's responsibility to know the regulations.
