MAT1348B (Winter 2020) Discrete Math for Computing

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Description of the Course: Introduction to discrete structures as a foundation to computing. Propositional logic. Fundamental structures: functions, relations, sets. The basics of counting: counting arguments, the pigeonhole principle, permutations and combinations. Introduction to proofs: direct, by contradiction, by cases, induction. Topics in graph theory: isomorphism, cycles, trees, directed graphs. Whenever possible applications from computing and information technology will be included.

Prerequisite: MAT1318, Ontario 4U Advanced Functions (MHF4U) or equivalent. This course cannot be taken for credit by any student who has previously received credit for MAT2348, and **cannot be combined for credit with MAT1362**.

How to learn Discrete Mathematics

Attend the lectures: Make sure you go to class and take good notes, so you can re-read them before the next lecture.

LEC	Monday	1:00–2:20 pm	(STE) H0104
LEC	Wednesday	11:30–12:50 pm	(STE) H0104

Attend the DGDs: This is your Discussion Group, led by a graduate student TA. Prepare by doing the posted exercises, and use your time well by asking questions!

DGD B01	Friday	8:30–9:50 am	MRT 250
DGD B02	Friday	10:00–11:20 am	MRT 250
DGD B03	Friday	11:30–12:50 pm	CBY B012

Stay up-to-date with Brightspace: The course webpage is on Brightspace of the University of Ottawa. Announcements, lecture notes, test solutions, and more resources will be posted there. You will need to check Brightspace regularly.

Stay mathematically fit by doing lots of exercises: Practice! Do homework exercises, textbook exercises, DGD exercises, and any other suggested exercises. Work on examples from class to see if you can remember how to solve them on your own. Discrete Math for Computing is not a course where last-minute memorization is enough to succeed.

Definitions! ...and many new methods!: One aspect of MAT1348 that may be different from what you've experienced in other math classes is its emphasis on **definitions.** You will learn **many** new and very specific definitions in this course, so **please** review the new terminology regularly and get to know it well. We will also cover many different methods for problem-solving and proof-writing. You should be able to solve problems using a variety of specified methods.

Use the textbook and supplemental resources posted on The recommended textbook is *Discrete Mathematics and Its Applications, 8th Edition*, by Kenneth H. Rosen, plus course notes (to be posted on

Brightspace). You can get a customized version (e-book or hardcopy) of the textbook. Older versions of Rosen are fine too. The textbook is available at the Follett Bookstore on Campus (in the University Centre) and elsewhere.

A list of Supplemental Exercises and Graph Theory Notes/Exercises will be freely available on Brightspace as well.

Ask for help: Ask for help when you need it (before things become too overwhelming). Talk to your instructor and TA. We are here to help.

Visit your professor's Office Hours: Whenever you need concepts clarified or would like to discuss the course, please drop in to my Office Hours (Wednesdays from 13:00 to 14:30, Thursdays from 14:30 to 16:00 at 668 STEM).

Visit the Math Help Centre: In addition to the DGDs, lectures, and professor's office hours, you can get help at the Math Help Centre, located in STM 207. For more details, go to http://science.uottawa.ca/en/faculty-services/undergraduate-studies#MAT

Accessibility: If you are in need of accommodation during this course due to a disability, please consult with Access Services as soon as possible; otherwise, you may not obtain accommodations in time.

How you will be evaluated

Your mark will be calculated using whichever of the following schemes is to your advantage:

Scheme 1	**Scheme 2**	**Scheme 3**	**Scheme 4**
3 Assignments worth 2% each	3 Assignments worth 2% each	3 Assignments worth 2% each	3 Assignments worth 2% each
+	+	+	
2 Midterms worth 22% each	Midterm 1 worth 22%	Midterm 2 worth 22%	+
+	+	+	
Final Exam worth 50%	***Final Exam*** worth 72%	***Final Exam*** worth 72%	***Final Exam*** worth 94%

***__Note.__** In order to pass the course, you must obtain 40% or higher on the Final Exam. If your grade on the final exam is lower than 40%, then you will fail the course (F) regardless of your other marks.

Assignments must be submitted **in the assignment boxes near STM 207** before the due date deadline.

Late assignments will not be accepted.

Tentative Assignment Due Dates:	**Assignment 1**: Tuesday, January 28 before 9:00 pm **Assignment 2**: Tuesday, March 3 before 9:00 pm **Assignment 3**: Tuesday, April 1 before 9:00 pm
Test Dates (in class):	**TEST 1**: Monday, February 10 **TEST 2**: Monday, March 16

Final Exam : The exam will be scheduled during the final exam period (April 7–24)

Test/Exam Policies

Test procedures: You should bring your student card to tests. Students may not enter after or leave before 20 minutes have passed from the beginning of a test.

Calculator policy: No calculators.

Policy for missing a test: If you miss a midterm, then its weight will automatically be transferred to the weight of the final exam (as in Evaluation Schemes 2, 3, or 4). There are **no makeup tests**.

Electronic Devices: Cellular phones, unauthorized electronic devices, unauthorized calculators or course notes are **not** allowed during tests and exams. Phones and devices (including Smartwatches) must be turned off and put away in your bag. **If caught with such a device or document, academic fraud allegations may be filed which may result in you obtaining a zero for the test/exam.**

Academic Fraud: Any attempt at copying or cheating is treated as a case of academic fraud, as is the facilitation of copying by others. Students must take reasonable care to prevent others from copying their work.

Accessibility: If you are in need of accommodation during this course due to a disability, please register with Access Services as soon as possible; otherwise, you may not obtain accommodations in time.

Important dates for MAT1348A:

Monday, **January 6**	first LEC
Friday, **January 17**	first DGD
Tuesday, **January 28**	Assignment 1 tentative due date
Monday, **February 10**	TEST 1 (in class)
February 16–22	NO CLASSES (Reading Week)
Tuesday, **March 3**	Assignment 2 tentative due date
Monday, **March 16**	TEST 2 (in class)
Friday, **March 20**	last day to withdraw from a course
Wednesday, **April 1**	Assignment 3 tentative due date
Friday, **April 3**	last MAT1348 DGD
Wednesday, **April 1**	last MAT1348 LEC
April 7–24, 2020	FINAL EXAM PERIOD

University of Ottawa Services and Policies

Academic Integrity. Academic integrity means being responsible for the quality of your work, preparing it honestly, and respecting the intellectual community you are part of as a student. Every member of the University community has the moral obligation to learn and share knowledge with honesty and integrity. For more information, please see http://www.uottawa.ca/vice-president-academic/academic-integrity

Academic Fraud. Academic fraud refers to "an act by a student that may result in false academic evaluation of that student or another student". Plagiarism and all forms of cheating are taken very seriously.
See https://www.uottawa.ca/administration-and-governance/academic-regulation-14-other-important-information

Accessibility. The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code. This occurs through a collaborative process that acknowledges a collective obligation to develop an accessible learning environment that both meets the needs of students and preserves the essential academic requirements of the University's courses and programs. The University of Ottawa is committed to ensure that persons with disabilities have equal access to its services and events.

Access Services. The University of Ottawa accommodates students with disabilities through Access Services, a division of the Student Academics Success Service (SASS). SASS is a *free* network of services and programs designed to give you the tools and information you need to succeed. Delivered by professionals and fellow students who care about your success and your well-being, the programs and services of SASS complement your classroom learning and support you in achieving your academic and professional goals. Please note that there are deadlines for registering with Access Services. For more information, please visit https://sass.uottawa.ca/en/access/

Sexual Violence. The University of Ottawa will not tolerate any act of sexual violence. This includes acts such as rape and sexual harassment, as well as misconduct that take place without consent, which includes cyberbullying. The University, as well as various employee and student groups, offers a variety of services and resources to ensure that all uOttawa community members have access to confidential support and information, and to procedures for reporting an incident or filing a complaint. For more information, see https://www.uottawa.ca/respect/en/harassment-discrimination-MiniHomePage/harassment

Test/Exam Policy for Electronic Devices. Cellular phones, unauthorized electronic devices, calculators or course notes are **not** allowed during tests and exams. Phones and devices (including Smartwatches) must be turned off and put away in your bag. Do not keep them in your possession, such as in your pockets. **If caught with such a device or document, academic fraud allegations may be filed which may result in you obtaining a 0 (zero) for the exam.** Therefore, come to your exams with a plan of how to store your device away from your person.