Instructor: Osama Khalil
Email: khalil@math.utah.edu

- The best way to reach me is by emailing me on Canvas.

Course Type: Interactive Video Conferencing (IVC - synchronous online).
Class Meetings: We will meet virtually via Zoom on MWF at 8:35am-9:25am.

- For your convenience, lectures will be recorded and posted on Canvas.

Office Hours: Mondays and Tuesdays 2-3pm or by appointment. Office hours will be conducted via Zoom.
Zoom details: The meeting ID and password for our class will be posted on Canvas. Please refrain from sharing this information publicly.

Syllabus subject to change: This syllabus is meant to serve as an outline and guide for our course. Please note that I may modify it with reasonable notice to you. I may also modify the Course Schedule to accommodate the needs of our class. Any changes will be announced in class and posted on Canvas.


Course Information: Math 2200 Introduction to Discrete Mathematics is a 3 credit course.

- Prerequisite Information: "C" or better in Math 1220, 1250, 1260, 1270, 1311, 1320, 1321, 2210, or AP Calc BC score of 5.

- Course Description: This is a course on the fundamentals of discrete mathematics. It includes an introduction to proofs and rigorous analytic thinking; students will learn how to understand and write short proofs. We will introduce basic elements of mathematics such as fundamentals of logic, sets and relations, functions, number theory, modular arithmetic, combinatorics, and discrete probability.


Approach: Before class you should read the assigned sections from the textbook. In class I will review and highlight material that you have read about. I will devote most of our meeting time to making sure you understand the material and working through some more challenging problems together. After each class, you should be ready to tackle the relevant problems from the homework.

Canvas: Canvas will be used for posting course announcements, exams, quizzes, homework assignments, grades, files and any relevant supplementary material. Students should check the Canvas page regularly for course information and resources. Email notifications and correspondence will be sent to the student’s UMail address ([u-number]@utah.edu); this email account must be checked regularly.

Grade Components: The following are the grade components and the percentage each contributes to a student’s final grade:

- Quizzes (10%)- There will be a short, 10-15 minute quiz every Friday (except for Fridays where we have a midterm exam).
  - The 2 lowest quiz scores will be dropped.
- Quizzes will be accessed through Canvas. Quizzes will open at the beginning of class so it is very important to be on time.
- Questions will be of the short answer format (e.g. multiple choice, true/false, fill the blanks, etc).

**Homework Assignments (25%)** - Homework assignments are due on Wednesdays at midnight, roughly every 2 weeks.
- The lowest homework score will be dropped.
- HW assignments should be submitted through Canvas as a single PDF file (see technical requirements section for instructions).
- You are allowed (in fact encouraged) to work in groups on your assignments. However, every student is expected to write up their own solutions to each homework set.
- Typically, late homework will not be accepted unless there are circumstances beyond your control that prevent you from finishing the HW on time (e.g. illness, family emergencies, etc).
- Students are encouraged (but not required) to learn to type their homework answers in LaTeX.

**Midterm Exams (40%, 20% each)** - Two 50-minute midterm exams will be given on select Fridays.
- Each exam will open on Canvas at the beginning of class and answers are due by the end of class. It is important to upload your answers before class is over since the exam will be closed on Canvas after class ends.
- You can write your answers on blank sheets of paper. When you are done, you should scan or take pictures of your answer sheets and upload your answers to Canvas as a single PDF file (see the section on technical requirements for instructions).
- You are required to sign in to Zoom on your phone and have the camera turned on and angled so that I can see your screen and workspace. **Students who take the exam without signing in to Zoom will be considered absent from the exam (and hence will receive a grade of 0 on the test) even if they submit their answers to Canvas on time.**
- I understand this is a new format for all of us. Do not worry or panic if you experience technical difficulties with uploading/downloading your exam. I will be proctoring the tests myself and I will work with you to sort out any issues.

**Final Exam (25%)** - A 2 hour comprehensive exam will be given online in the same format as our midterm exams.
- The same Zoom proctoring policies for the midterm exam apply to the final exam. In particular, students who take the exam without signing in to Zoom will be considered absent from the exam (and hence will receive a grade of 0 on the test) even if they submit their answers to Canvas on time.

**A “Dry run”:** At the beginning of class on **Friday August 28th**, we will have a practice quiz where you will practice taking a mock quiz on Canvas as well as practice uploading files to Canvas. You will receive full points for this exercise simply by participating in it and it will count towards your quiz grades.

**Exam Dates:**

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>October 2nd</td>
<td>8:35-9:25am</td>
</tr>
<tr>
<td>Exam 2</td>
<td>November 13th</td>
<td>8:35-9:25am</td>
</tr>
<tr>
<td>Final Exam</td>
<td>December 10th</td>
<td>8-10 am</td>
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</table>
• **Exam Absences:** Make-up exams are available to students who miss exams due to compelling circumstances beyond their control (e.g. illness, family emergencies, etc). Except under extremely unusual circumstances, it is your responsibility to promptly inform me of your intended absence as soon as possible **before the missed exam.** I reserve the right to ask for an official excuse for your absence (e.g. doctor’s note) in order to provide you with a make-up exam at a different time.

**Grades:** Final letter grades will be determined by overall percentage as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>93% – 100%</td>
</tr>
<tr>
<td>A-</td>
<td>90% – 92%</td>
</tr>
<tr>
<td>B+</td>
<td>87% – 89%</td>
</tr>
<tr>
<td>B</td>
<td>83% – 86%</td>
</tr>
<tr>
<td>B-</td>
<td>80% – 82%</td>
</tr>
<tr>
<td>C+</td>
<td>77% – 79%</td>
</tr>
<tr>
<td>C</td>
<td>73% – 76%</td>
</tr>
<tr>
<td>C-</td>
<td>70% – 72%</td>
</tr>
<tr>
<td>D+</td>
<td>67% – 69%</td>
</tr>
<tr>
<td>D</td>
<td>63% – 66%</td>
</tr>
<tr>
<td>D-</td>
<td>60% – 62%</td>
</tr>
<tr>
<td>E</td>
<td>0% – 59%</td>
</tr>
</tbody>
</table>

**Technical Requirements:** Students are expected to be computer literate and Canvas and zoom navigation skills are expected. Knowledge and navigation of canvas and zoom is critical to access all features and resources of this course.

- Attending class via Zoom requires a strong internet connection with good bandwidth.
- During the midterm exams and the final, it is required that you sign in to Zoom with video enabled and the camera angled so I can see your computer screen (for example you can use Zoom on your phone).
- There are several free phone apps available for taking pictures of your homework and exams and converting them to a PDF file so you can upload them to Canvas. **Please be aware that Canvas only accepts files in the PDF format.**
- The Marriott Library, UIT, and TLT are expanding the number of laptops and hotspots available for checkout; see: https://lib.utah.edu/coronavirus/checkout-equipment.php

**ADA Statement:** The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability & Access, 162 Olpin Union Building, 801-581-5020. CDA will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability & Access.

**Academic Code of Conduct:** Students are encouraged to review the Student Code for the University of Utah: https://regulations.utah.edu/academics/6-400.php. Incidents of academic misconduct will be subject to penalty per Section V of Policy 6-400, the Student Code. Incidents of academic dishonesty on homework assignments (e.g. plagiarism) may result in a penalty of a full letter-grade reduction and up to a failing grade (E) for the course. Incidents of academic dishonesty on exams may result in a penalty of a failing grade (E) for the course, and the incident(s) will be referred to the dean of your major-department college for possible further sanction.

**Addressing Sexual Misconduct:** Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran’s status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).
**Student Responsibilities:** All students are expected to maintain professional behavior in the classroom setting, according to the Student Code, spelled out in the Student Handbook. Students have specific rights in the classroom as detailed in Article III of the Code. The Code also specifies prescribed conduct (Article XI) that involves cheating on tests, plagiarism, and/or collusion, as well as fraud, theft, etc. Students should read the Code carefully and know they are responsible for the content. According to Faculty Rules and Regulations, it is the faculty responsibility to enforce responsible classroom behaviors, and I will do so, beginning with verbal warnings and progressing to dismissal from and class and a failing grade. Students have the right to appeal such action to the Student Behavior Committee. [http://regulations.utah.edu/academics/6-400.php](http://regulations.utah.edu/academics/6-400.php)

**Student Names and Personal Pronouns:** Class rosters are provided to the instructor with the student’s legal name as well as Preferred first name (if previously entered by you in the Student Profile section of your CIS account). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you in class, on papers, exams, group projects, etc. Please advise me of any name or pronoun changes (and update CIS) so I can help create a learning environment in which you, your name, and your pronoun will be respected. If you need assistance getting your preferred name on your UIDcard, please visit the LGBT Resource Center Room 409 in the Olpin Union Building, or email bpeacock@sa.utah.edu to schedule a time to drop by. The LGBT Resource Center hours are M-F 8am-5pm, and 8am-6pm on Tuesdays.

**Wellness Statement:** Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student’s ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at [www.wellness.utah.edu](http://www.wellness.utah.edu) or 801-581-7776.

**Safety Statement:** The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit [safeu.utah.edu](http://safeu.utah.edu).

**University Counseling Center:** The University Counseling Center (UCC) provides developmental, preventive, and therapeutic services and programs that promote the intellectual, emotional, cultural, and social development of University of Utah students. They advocate a philosophy of acceptance, compassion, and support for those they serve, as well as for each other. They aspire to respect cultural, individual and role differences as they continually work toward creating a safe and affirming climate for individuals of all ages, cultures, ethnicities, genders, gender identities, languages, mental and physical abilities, national origins, races, religions, sexual orientations, sizes and socioeconomic statuses.