

Math 3336 – 18546 (Fall 2021)

Discrete Mathematics and Its Applications

Course Instructor: Dr. Blerina Xhabli

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Course/Section Number: Math.3336/18546

Lecture Time/Place: MWF 10:00am – 11:00am / SEC 102

Virtual Office Hours: Online TBA and/or by appointment

Course Homepage: <https://www.casa.uh.edu> and MATH3336-18546-F21 TEAM

Course Calendar: <https://www.math.uh.edu/~blerina/Math3336F21.html>

Course Prerequisites: Math.2331 or equivalent

TEXTBOOK

Discrete Mathematics and Its Applications, Eighth Edition, by Kenneth H. Rosen.

COURSE DESCRIPTION

This course covers elementary discrete mathematics for computer science: it is designed to prepare math, computer science, and engineering majors for a background in abstraction, notation, and critical thinking for the mathematics most directly related to computer science. It emphasizes mathematical definitions, logical inference, and proof techniques. Topics include propositional logic, first-order logic, proof methods; sets, functions, relations; mathematical induction, recursion; elementary number theory, graph theory; basic complexity theory, recurrences.

COURSE HOMEPAGE/CASA and TEAMS

The course homepage for this class are <http://www.casa.uh.edu> and MATH3336-18546-F21 TEAM. You will be using CASA for submitting homework assignments. The homework assignments will be posted under the Assignments tab. The exams will be delivered in class. MATH3336-18546-F21 TEAM will be a virtual classroom, where you will find helpful lecture notes, after class filled-in notes and/or recorded lecture videos (when necessary).

RESOURCES FOR ONLINE LEARNING

University of Houston is committed to student success, and provides information to optimize the online learning experience through our Power-On webpage. Please visit this webpage for a comprehensive set of resources, tools and tips including: obtaining access to the internet, AccessUH; requesting a laptop through the Laptop Loaner Program; using your smartphone as a webcam; and downloading Microsoft Office 365 at no cost. For assistance, contact UHOnline@uh.edu.

TECHNOLOGY REQUIREMENTS

Computer and internet access is required for this course. In summary, students will need:

- a Functioning (updated) Computer (with microphone, speaker or earphones, and webcam)
- Reliable Internet Connection
- PDF viewer/Ability to watch mp4 files.
- Ability to log in to CASA for online assignments.
- Ability to access Microsoft TEAMS platform.

Note that all UH students have access to MS teams with their cougar net ID.

COURSE DELIVERING FORMAT AND STRUCTURE

This course is being offered in the **face to face** format. Every lecture session will be held **every Mon/Wed/Fri 10:00am - 11:00am** according to the class schedule at **SEC 100**. Being a face to face delivered course, all students agree that they are available during the meeting times.

Even though the course format/structure is face to face, due to the changing nature of the pandemic, the team for this lecture will be created and available on MS TEAMS. In case of a need to move to the online setting, all students will be enrolled in the class team. Every student is automatically put on the MS Team of this course.

This course is not self-paced; students are expected to follow the homework assignments and quizzes due dates as specified on the course calendar. After every lecture session, we recommend the students to practice the newly learned topics by working on the provided homework assignment and/or corresponding exercises of the textbook section we have covered.

For the first two weeks of classes, we will implement a soft opening. As a result, all the lecture sessions will be recorded and the links of the recordings will be displayed in your interactive CASA calendar and in TEAMS. If you can't attend the lecture session in person, make sure you watch the recorded video of the session. The best approach is to watch the missed lecture video before the next upcoming lecture session. **Attendance is not mandatory but is recommended.**

1. Students are expected to behave professionally during lecture sessions. Any students who do not follow the university's code of conduct might be removed from the session.
2. Students will have two places to concentrate on: CASA for course content such as lecture notes/videos links and homework assignments/quizzes and TEAMS for course material and online virtual classroom when necessary. All the course materials will be linked in both places.
3. For online sessions, you are advised to turn off your webcam and microphone before joining the sessions. By joining an online session, students give consent to be recorded on the live session video. This rule will apply if we need to switch to online teaching.

FACE COVERING POLICY

To reduce the spread of COVID-19, the University strongly encourages everyone (vaccinated or not) to wear face coverings indoors on campus including classrooms for both faculty and students.

PRESENCE IN CLASS

Your presence in class each session means that you:

- Are NOT exhibiting any Coronavirus Symptoms that makes you think you have COVID-19
- Have NOT tested positive or been diagnosed for COVID-19
- Have NOT knowingly been exposed to someone with COVID-19 or suspected COVID-19

If you are experiencing any COVID-19 symptoms that are not clearly related to a pre-existing medical condition, do not come to class. Please see Student Protocols for what to do if you experience symptoms and Potential Exposure to Coronavirus for what to do if you have potentially been exposed to COVID-19. Consult the Undergraduate Excused Absence Policy for information regarding excused absences due to medical reasons.

COVID-19 INFORMATION

Students are encouraged to visit the University's COVID-19 website for important information including on-campus testing, vaccines, diagnosis and symptom protocols, campus cleaning and safety practices, report forms, and positive cases on campus. Please check the website throughout the semester for updates.

VACCINATIONS

Data suggests that vaccination remains the best intervention for reliable protection against COVID-19. Students are asked to familiarize themselves with pertinent vaccine information, consult with their health care provider. The University strongly encourages all students, faculty and staff to be vaccinated.

REASONABLE ACADEMIC ADJUSTMENTS/AUXILIARY AIDS

The University of Houston complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for disabled students. In accordance with Section 504 and ADA guidelines, UH strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a disability requiring an academic adjustments/auxiliary aid, please contact the Justin Dart Jr. Student Accessibility Center (formerly the Justin Dart, Jr. Center for Students with DisABILITIES).

EXCUSED ABSENCE POLICY

Regular class attendance, participation, and engagement in coursework are important contributors to student success. Absences may be excused as provided in the University of Houston Undergraduate Excused Absence Policy for reasons including: : medical illness of student or close relative, death of a close family member, legal or government proceeding that a student is obligated to attend, recognized professional and educational activities where the student is presenting, and University-sponsored activity or athletic competition. Under these policies, students with excused absences will be provided with an opportunity to make up any quiz, exam or other work that contributes to the course grade or a satisfactory alternative. Please read the full policy for details regarding reasons for excused absences, the approval process, and extended absences. Additional policies address absences related to military service, religious holy days, pregnancy and related conditions, and disability.

RECORDING OF CLASS

Students may not record all or part of class, livestream all or part of class, or make/distribute screen captures, without advanced written consent of the instructor. If you have or think you may have a disability such that you need to record class-related activities, please contact the Center for Students with DisABILITIES. If you have an accommodation to record class-related activities, those recordings may not be shared with any other student, whether in this course or not, or with any other person or on any other platform. Classes may be recorded by the instructor. Students may use instructor's recordings for their own studying and notetaking. Instructor's recordings are not authorized to be shared with anyone without the prior written approval of the instructor. Failure to comply with requirements regarding recordings will result in a disciplinary referral to the Dean of Students Office and may result in disciplinary action.

SYLLABUS CHANGES

Due to the changing nature of the COVID-19 pandemic, please note that the instructor may need to make modifications to the course syllabus and may do so at any time. Notice of such changes will be announced as quickly as possible on CASA or in class.

GRADES

The final grade for this class will be determined as follows:

- Homework: 15%
- Exam I: 20%
- Exam II: 20%
- Exam III: 20%
- Final Exam: 25%

HOMEWORK ASSIGNMENTS

A list of homework problems will be given every week on the course homepage at CASA. Homework will be due on Mondays. **Late homework is not permitted, unless there is a valid excuse.** Expect to spend approximately three hours working on homework outside of class for every hour spent in class. If you have any issues with the way the homework or a particular problem is graded, please contact me. Your turned-in homework grade will be based on the following guidelines:

- Homework will not be accepted by email.
- Write legibly and neatly. If possible, choose to type your solutions in word or latex. Provide space for the grader to make comments.
- Your homework should be scanned in a single pdf file, and be submitted online through your CASA accounts. The detailed instructions for homework submission are posted on your CASA accounts mainpage.
- Solutions to homework problems should be written in sequential order.
- You may discuss the problems with other classmates as you figure out how to do the problem or establish its truth, but the write-up should be done by you alone and in your own words.
- Homework is due every Monday, at 11:59pm. Once the deadline has passed, the homework is considered late and will not be accepted.
- Your lowest two homework grades throughout the term will be dropped when calculating your final grade.

READING ASSIGNMENTS and CLASS PARTICIPATION

Reading assignments will be given weekly on the course homepage (CASA or Math3336 Team). Completing the reading assignments is just as critical as doing the written homework. You should read the assigned sections *before* we cover them in classes, so you are prepared to answer questions or ask about material you do not understand.

Class participation is very important for being successful in this course. It is strongly recommended to attend every live session and pay attention and be engaged in the lectures. Questions on exams will be similar to assigned homework problems and examples from lectures presented in class.

TUTORING

The Math Department is offering online tutoring for 3000-level and 4000-level courses through the Mathematics Undergraduate Student Lounge (MUSL) microsoft team. The Math Department has set up a schedule for tutoring of different courses throughout the semester by qualified math majors tutors and graduate students. You will be added in such a team, and our class grader will notify his schedule very soon.

EXAM DATES

There will be three exams and one final. All the exams will be delivered and monitored online using CASA Monitor tool. More information and instructions about how to take an online exam will be posted in your CASA accounts. Books and notes will not be allowed on all exams.

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|-------------------------|--|
| Exam 1 (§1.1–§3.2) | Wednesday, September 29, 10:00am – 11:00am |
| Exam 2 (§4.1–§6.5) | Wednesday, October 27, 10:00am – 11:00am |
| Exam 3 (§7.1–§8.3*) | Wednesday, November 17, 10:00am – 11:00am |
| Final Exam (cumulative) | Friday, December 10, 11:00am – 2:00pm |

FINAL EXAM

Final is comprehensive and mandatory for ALL students. Check course website for final exam schedule. Make your travel plans so that you are available during the testing period.

If you miss a test without a valid excuse as described below, you receive a zero for it. When you take the final, the grade on the final will replace that zero. If you miss more than one test, only one of them will be replaced. If the final exam grade is better than any of the previous test grades, then the final exam grade will automatically replace the lowest test grade even if you do not miss any test. The primary reason for this policy is to offset the impact of zero scores due to emergencies (medical, personal, or otherwise) on a student's final course grade.

LATE ASSIGNMENT AND MAKE-UP POLICY

This course is a cumulative course. You as a student need to keep up with the reading, homework assignments and exams. Students are expected to check the calendar on CASA several times a week and plan ahead so that they don't miss assignments. We drop two homework assignments primarily to offset the impact of zero/low scores due to emergencies on a student's final course grade. Hence, students should not expect to have an option to make up missed assignments unless in the case of an excused absence (See: Excused Absence Policy below).

If requesting make up work (assignment or exam) due to an excused absence: the student needs to contact the instructor in writing before the next class meeting (or as soon as possible afterwards with an explanation regarding why the notice could not be sent before the next class meeting). Read the Undergraduate Excused Absence Policy to see a list of documentations to support your request; follow the guidelines provided on this document to make your request. Your instructor will inform you of the decision in writing (via email).

COMMUNICATION VIA EMAIL

Email communications related to this course will be sent to your Exchange Email Account which each University of Houston student receives. The Exchange mail server can be accessed via Outlook, which provides a single location for organizing and managing day-to-day information, from email and calendars to contacts and task lists. Exchange email accounts can be accessed by logging into Office 365 with your Cougarnet credentials or through Access UH. They can also be configured on IOS and Android mobile devices. Additional assistance can be found at the Get Help page.

Your instructor will be sending class emails using PeopleSoft; you are responsible for checking your

UH email. Per UH Policy, notices properly addressed and so sent via PeopleSoft shall be presumed to have been received by the student. Thus, you are responsible for the content in emails sent to your UH account, regardless if your external (non-UH) email provider filters or blocks them. When emailing your instructor, it is recommended that you use a professional email address and include the course name on the subject line so that your instructor can address your questions accordingly. Please read this link for more on communication via email: [EMAIL ETIQUETTE](#)

Any emails sent to the instructor should have Math 3336, Section 16921 in the subject line. Also, if the instructor does not respond to your email within two working days, please resend the email. If you again do not hear from me within one more working day, it is likely that your email is not coming through and you should mention this in one of the online sessions before or after class. It is your responsibility to ensure that I am aware of issues you may have with the course; failure to effectively initiate timely communication is not a valid basis for a grade grievance and cannot be used as such.

Any emails sent by the instructor will be sent through AccessUH so please make sure your email is up to date in the system. Class announcements will also be posted on the CASA calendar or the discussion board on Math.3336 Fall'20 TEAM, so check those pages daily.

ACADEMIC HONOR PRINCIPLE

University of Houston students are expected to adhere to the Academic Honesty Policy as described in the UH Undergraduate Catalog. "Academic dishonesty" means employing a method or technique or engaging in conduct in an academic endeavor that contravenes the standards of ethical integrity expected at the University of Houston or by a course instructor to fulfill any and all academic requirements. Academic dishonesty includes, but is not limited to, the following: Plagiarism; Cheating and Unauthorized Group Work; Fabrication, Falsification, and Misrepresentation; Stealing and Abuse of Academic Materials; Complicity in Academic Dishonesty; Academic Misconduct.

Refer to UH Academic Honesty website and the UH Student Catalog for the definition of these terms and university's policy on Academic Dishonesty. Anyone caught cheating will receive sanctions as explained on these documents and will be reported to the department for further disciplinary action. The sanctions for confirmed violations of this policy shall be commensurate with the nature of the offense and with the record of the student regarding any previous infractions. Sanctions may include, but are not limited to: a lowered grade, failure on the examination or assignment in question, failure in the course, probation, suspension, or expulsion from the University of Houston, or a combination of these. Students may not receive a W for courses in which they have been found in violation of the Academic Honesty Policy. If a W is received prior to a finding of policy violation, the student will become liable for the Academic Honesty penalty, including F grades.

Posting answers for Homework questions online (at group chats or other online tools) **is considered an academic honesty violation.** Students are expected to know the difference between "getting/giving HELP on a problem" and "getting/giving answers to a problem". If a student is caught sharing answers (in person or online), he/she might be reported to the departmental hearing officer for an academic honesty violation. If a student becomes aware of cheating or any other violations; that student is responsible for informing the instructor.

INCOMPLETES

An incomplete (I) may be awarded to you by your teacher if the reason is a compelling NON-ACADEMIC reason, you have completed virtually all the course assignments AND you have a passing grade on this work.

Incompletes are NOT available to students who have done little of the coursework nor for students who have failing grades on what they have done. See your teacher to discuss eligibility and to fill out and sign the Incomplete contract. This is also required and must be signed in advance of an I being posted. Imminent failure is not an acceptable reason to be awarded an incomplete.

DROPPING/WITHDRAWING

If a student wants to drop the class, it is his/her responsibility to do so by logging on access.uh.edu and completing the drop process before the drop deadline. Instructors cannot drop students for any reason.

UH CAPS Statement

Counseling and Psychological Services (CAPS) can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS (<http://www.uh.edu/caps>) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. No appointment is necessary for the “Let’s Talk” program, a drop-in consultation service at convenient locations and hours around campus. http://www.uh.edu/caps/outreach/lets_talk.html

HELPFUL INFORMATION

COVID-19 UPDATES: <https://uh.edu/covid-19/>

COOGS CARE: <https://www.uh.edu/dsaes/coogscare/>

LAPTOP CHECKOUT REQUESTS:

<https://www.uh.edu/infotech/about/planning/offcampus/index.php#do-you-need-a-laptop>

HEALTH FAQS: <https://uh.edu/covid-19/faq/health-wellness-prevention-faqs/>

STUDENT HEALTH CENTER:

<https://uh.edu/class/english/lcc/current-students/student-healthcenter/index.php>

Fall 2021 Tentative* Course Calendar:

| Week | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---|--|---|--|--------------|---|---------------------------------|--------|
| Week 1 Introduction and Section 1.1 Section 1.2 Section 1.3 | AUGUST 23 Introduction Section 1.1 | 24 | 25 Section 1.2 Section 1.3 | 26 | 27 Section 1.3 Section 1.4 | 28 | 29 |
| Week 2 Section 1.4 Section 1.5 Section 1.6 | 30 Section 1.4 Section 1.5 Last day to add a class | 31 | SEPTEMBER 1 Section 1.5 Section 1.6 | 2 | 3 Section 1.6 Section 1.7 | 4 | 5 |
| Week 3 Section 1.7 Section 1.8 Section 2.1 | 6 Labor Day No Class | 7 | 8 Section 1.7 Section 1.8 Last day to drop without a grade | 9 | 10 Section 1.8 Section 2.1 | 11 | 12 |
| Week 4 Section 2.1 Section 2.2 Section 2.3 Section 2.4 | 13 Section 2.1 Section 2.2 | 14 | 15 Section 2.2 Section 2.3 | 16 | 17 Section 2.3 Section 2.4 | 18 | 19 |
| Week 5 Section 2.4 Section 3.1 Section 3.2 Review Exam 1 | 20 Section 2.4 Section 3.1 | 21 | 22 Section 3.1 Section 3.2 | 23 | 24 Section 3.2 Review Test 1 | 25 | 26 |
| Week 6 Exam 1 Section 4.1 Section 4.3 | 27 Review Exam 1 Section 4.1 | 28 | 29 Exam 1 (Chapter 1, 2, 3) | 30 | OCTOBER 1 Section 4.2* Section 4.3 | 2 | 3 |
| Week 7 Section 4.4 Section 5.1 Section 5.2 | 4 Section 4.3 Section 4.4 | 5 | 6 Section 4.4 Section 5.1 | 7 | 8 Section 5.1 Section 5.2 | 9 | 10 |
| Week 8 Section 5.3 Section 6.1 Section 6.2 | 11 Section 5.2 Section 5.3 | 12 | 13 Section 5.3 Section 6.1 | 14 | 15 Section 6.1 Section 6.2 | 16 | 17 |
| Week 9 Section 6.3 Section 6.4 Section 6.5 Review Exam 2 | 18 Section 6.3 Section 6.4 | 19 | 20 Section 6.4 Section 6.5 | 21 | 22 Section 8.5* Review Exam 2 | 23 | 24 |
| Week 10 Exam 2 Section 7.1 Section 7.2 | 25 Review Exam 2 Section 7.1 | 26 | 27 Exam 2 (Chapter 4, 5, 6) | 28 | 29 Section 7.1 Section 7.2 | 30 | 31 |
| Week 11 Section 7.3 Section 7.4 Section 8.1 | NOVEMBER 1 Section 7.2 Section 7.3 | 2 Last day to drop with W grade | 3 Section 7.3 Section 7.4 | 4 | 5 Section 7.4 Section 8.1 | 6 | 7 |
| Week 12 Section 8.2 Section 8.3* Review Exam 3 | 8 Section 8.1 Section 8.2 | 9 | 10 Section 8.2 Section 8.3* | 11 | 12 Section 8.3* Review Exam 3 | 13 | 14 |
| Week 13 Exam 3 Section 9.1 Section 9.3 | 15 Review Exam 3 Section 9.1 | 16 | 17 Exam 3 (Chapter 7, 8) | 18 | 19 Section 9.1 Section 9.3 | 20 | 21 |
| Week 14 Section 9.3 Section 9.5 | 22 Section 9.3 Section 9.5 | 23 | 24 HAPPY | 25 THANKS | 26 GIVING | 27 HOLIDAY! | 28 |
| Week 15 Section 9.5 Section 9.6 Final Review | 29 Section 9.5 Section 9.6 | 30 | DECEMBER 1 Section 9.6 Final Review | 2 | 3 Final Review (continued) | 4 Last Day of Classes | 5 |
| Week 16 Final Exams | 6 | 7 | 8 | 9 | 10 Final Exam 11:00am-2:00pm | 11 | 12 |