

# MATH 3325 – Transitions to Advanced Mathematics

## Spring 2024

### Course Information

**Instructor:** Krešimir Josić  
kresimir.josic@gmail.com  
PGH 624

**Time and Location:** MW 4:00 – 5:20 pm, S 116

**Office Hours:** M 3 – 4, and by appointment. Can be online.

**Course Website:** <http://www.math.uh.edu/~josic>

**Textbook:** *Proofs* by Jay Cummings  
ISBN-13: 979-8595265973

**Prerequisites:** Calculus I and Calculus II

### Important notes about technology

1. I will use Slack to answer any questions you may have about the course, and about the homework. Therefore, *it is essential to join the Slack team for this course*. I have Slack open during working hours, and either me or one of the TAs will respond within a few hours, and at most a day (on the outside), in almost all cases.
2. Homework will need to be submitted via a direct Dropbox link. I will email a separate link for each homework, as well as post it on Slack. Please note that this link will expire when the homework is due, so don't wait until the last minute. If you submit multiple versions, I have asked the TAs to only grade the last version submitted and disregard all others.

### Course Description

This course is an introduction to proofs and the abstract approach that characterizes upper level mathematics courses. It serves as a transition into advanced mathematics, and should be taken after the initial calculus sequence and before (or concurrently with) mid-level mathematics courses. The goal is to give students the skills and techniques that they will need as they study any type of advanced mathematics, whether it be in pure mathematics, applied mathematics, or application-oriented courses. In particular, this course covers topics that are ubiquitous throughout mathematics (e.g. logic, sets, functions, relations) and helps prepare students for classes such as Real Analysis, Abstract Algebra, and Advanced Linear Algebra, that are required for majors and minors.

A major objective of the course will be to teach students how to read, write, and understand proofs. Throughout the course students will be exposed to the notation, language, and

methods used by mathematicians, and will gain practice using these in their own proofs. In addition, great emphasis will be placed on writing and communication.

## Schedule and Attendance

*Class begins at 4:00pm. I will be giving occasional quizzes. There is no makeup for the quizzes, but I will drop one quiz grade at the end of the semester.*

## Grading Policy

Final grades are based on quizzes, homework and exam scores weighted as follows:

- Quiz: 5%
- Homework: 20%
- Midterms: 20% each
- Final Exam: 35%

Grades will be assigned according to the usual scale:  $> 92.5$  is an A, a total between 90 and 92.5 is an A-, a total between 87.5 and 90 is a B+, and so on.

If you stop coming to class, do not take quizzes, and do not drop the course so that your name appears on the final class roll, you will receive a grade of F at the end of the semester.

## Quizzes

I will give occasional quizzes in class. Buy some 3 by 5 index cards to answer these. Quizzes can only be submitted in person.

## Homework

Homework will be assigned approximately every 10 days, and should be submitted **online** on the indicated due date *via the link sent to you – see above*. Late homework will not be accepted; however, the lowest homework score will be dropped. Homework solutions should be prepared independently and **not copied from other sources**. You are encouraged, however, to discuss with others and consult other resources to improve your understanding.

**You should prepare the homework you submit on your own! You will receive a grade of 0 on your homework if there is evidence that you have copied a homework from that submitted in past semesters.**

## Coursework

This is a sophomore level course. You should therefore expect to spend about 2–3 hours of time on reading, and solving homework problems for every hour of class. Be sure that you schedules sufficient time.

## Exams

There will be two midterm exams and a final exam. The exams will be *given in class*:

- Midterm I: *Wednesday, February 21*
- Midterm II: *Wednesday, April 3*
- Final Exam: Friday, May 3, 6–8pm

Illegible answers will be assumed to be incorrect and will receive no credit.

## Make-up Policy and Questions about Grading

There will be no make-up exams offered in this course, except in the case of a documented medical emergency. **Make-ups will not be offered to accommodate personal travel plans.**

If you have questions about your grade on an assignment or on the homework, you have two weeks from the time it has been returned to you to ask myself or one of the TAs about it.

## Additional Information

**Academic Integrity:** All UH academic integrity policies apply to this course. For a review of these policies, visit:

<http://www.uh.edu/provost/academic-affairs/policy-guidelines/honesty-policy/>

**Email Notifications:** UH policy states that all required written notices shall be addressed to the student via their UH email. Notices properly addressed and so sent 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. Emails lost to external providers shall not be used as a justification to claim faculty are unresponsive, to appeal grades, etc.

I respond to most emails within 24 hours during the week, and on the next business day, if received during the weekend. If I or the TA do 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 come to office hours or speak with me before or after class. It is your responsibility to ensure that I and your TA are 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.

**Learning Accommodations:** Whenever possible, and in accordance with 504/ADA guidelines, we will attempt to provide reasonable academic accommodations to students who request and require them.

**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 ([www.uh.edu/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](http://www.uh.edu/caps/outreach/lets_talk.html)

**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 and Graduate 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 Justin Dart, Jr. Student Accessibility Center. 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 instructors recordings for their own studying and notetaking. Instructors 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.

**Resources for Online Learning:** The University of Houston is committed to student success, and provides information to optimize the online learning experience through our Power-On website. Please visit this website for a comprehensive set of resources, tools, and tips including: obtaining access to the internet, AccessUH, Blackboard, and Canvas; using your smartphone as a webcam; and downloading Microsoft Office 365 at no cost. For questions or assistance contact [UHOnline@uh.edu](mailto:UHOnline@uh.edu).

**UH Email:** Please check and use your Cougarnet email for communications related to this course. To access this email, login to your Microsoft 365 account with your Cougarnet credentials.

**Honor Code Statement:** By participating in this course you agree to adhere to the University of Houston Undergraduate Academic Honesty Policy. I will take academic honesty very seriously and, in the cases of violations, penalties may include suspension or expulsion from the University of Houston.