

## Math 311H: Honors Introduction to Real Analysis I

**Instructor:** Kristen Hendricks

**E-mail:** [kristen.hendricks@rutgers.edu](mailto:kristen.hendricks@rutgers.edu)

**Office Hours:** MTh 10:00-11:00 Lucy Stone Hall B106

**Workshop Instructor:** Ishaan Shah

**Email:** [is402@math.rutgers.edu](mailto:is402@math.rutgers.edu)

**Office Hours:** TBA

**Non-Canvas Website:** [www.math.rutgers.edu/~Math311H](http://www.math.rutgers.edu/~Math311H) . Most course content can be found both here and on Canvas.

**Location and Time:** Lecture MTh 8:30-9:50 AM in TIL-251; Workshop T 12:10-1:30 PM in TIL-103A. **During the first week, Lecture 1 will take place on Tuesday 9/5 at the workshop time and location, and the first workshop will take place Thursday 9/7 at the lecture time and location.** Note also that the lectures on 10/30 and 11/2 will take place on zoom.

**Content:** This course is a rigorous introduction to analysis on the real line, and covers sequences, types of subsets of the real line, limits, continuity, and derivatives. It will focus on building skills for reading and writing proofs.

**Textbook:** S. Abbott, *Understanding Analysis*. Second Edition. Available free of charge to Rutgers students through [SpringerLink](#).

**Notes:** Lecture notes will be made available online usually by the afternoon before each lecture, and amended shortly after lecture with any typo corrections or other changes.

**Homework:** Homework will be assigned weekly and due on Mondays at 5 pm. Homework will be collected via Canvas Assignments; the relevant Assignment will remain open for submission until 6 pm, to account for the possibility of technical difficulties, and will then close. There will be thirteen homeworks in total. No late homework will be accepted, but your lowest two homework scores will be dropped in computing your grade.

Some homework problems will be marked with an asterisk; this indicates problems that you are intended to work together on in your workshop, in order to get started on thinking about the ideas involved. In workshop and subsequently, you are encouraged to work together on your homework. However, you must write up all solutions yourself, and you must credit your collaborators, eg by including a sentence such as "Sarah and John and I worked together on this problem in workshop" or "Sriram suggested this way of solving the problem to me." You must also cite any sources you use other than the lecture or the textbook (other textbooks, a blog about analysis, Mathematics Stack Exchange, etc.) You should not consult Chegg or other paid homework solutions sites.

A subset of the homework will be graded carefully, and some points will be given for completeness of the rest of the assignment. (The subset will probably be three problems but might be higher if enrollment is low.) Homework solutions will be posted online promptly.

A brief primer on LaTeX will be made offered during the first workshop meeting for those who would like to typeset their homework solutions.

**Quizzes and Exams:** There will be a thirty-minute quiz on **Thursday, September 28** and two eighty-minute midterm exams on **Thursday, October 26** and **Tuesday, November 21** (on which day the university runs on a Thursday schedule). There will also be a final exam scheduled by the registrar. Exams will be taken closed book and closed notes. If you miss an in-class examination for a documented good reason (such as serious illness or other comparable emergency), your final will count for a larger percentage of your grade accordingly. Make-up finals will only be given in extreme and documented circumstances. In exam circumstances and otherwise, students are expected to be familiar with and abide by the [academic integrity policy](#).

**Disability Accommodations:** If you need accommodations for the course, please bring me a Letter of Accommodations as early in the term as possible. There are detailed instructions on how to do this in the “University Resources” section of this syllabus.

**Grading:** Grades will be computed as follows:

- Homework: 20%
- Quiz: 10%
- Midterms 1 & 2: 20% each
- Final: 30%

A reasonable curve will be applied to the composite numerical scores. The bar for an A will not be set higher than an overall 90% in the course.

**Schedule:** We will cover most of Chapters 1-6 of Abbott, essentially linearly. Precise reading for each week will be provided as the course goes on. You will get the most out of lecture if you do the reading *before* coming to class.

## **University-Level Resources:**

### **Student-Wellness Services:**

#### **Counseling, ADAP & Psychiatric Services (CAPS)**

**(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ <http://health.rutgers.edu/medical-counseling-services/counseling/>**

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

#### **Violence Prevention & Victim Assistance (VPVA)**

**(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901/ [www.vpva.rutgers.edu/](http://www.vpva.rutgers.edu/)**

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling, and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

#### **Disability Services**

**(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>**

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation:

<https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.

#### **Scarlet Listeners**

**(732) 214-9069 / <https://rutgers.campuslabs.com/engage/organization/scarletlisteners>**

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.