

# Syllabus for Math 4331

## Intro to Real Analysis I

**Instructor:** Dr. Mark Tomforde

**Office:** 601 PGH

**Instructor Web Site:** [www.math.uh.edu/~tomforde](http://www.math.uh.edu/~tomforde)

**Course Web Site:** [www.math.uh.edu/~tomforde/Math4331.html](http://www.math.uh.edu/~tomforde/Math4331.html)

**Office Hours:** Wednesday 11:00AM–Noon, Friday 9:00AM–10:00AM (*or by appointment*)

**Note About Office Hours:** I encourage you to come by my office if you have any questions, need help with homework problems, or would just like to talk about the material. If for some reason you are unable to make it to Office Hours, you are welcome to email me to set up an appointment for another time.

**Meeting Times:** Lecture: MWF, Noon–1:00PM in 15 AH.

**Course Description:** This class serves as an introduction to Real Analysis. Topics include: Sets and functions, sequences, series, convergence, continuity, differentiability, and integrability. This course may be more abstract than courses you’ve had in the past. More emphasis will be placed on understanding the topics and applying them in different situations, rather than in simply doing rote calculations. Communicating your understanding and writing effective proofs will be a large component of the course.

Throughout the course there will be great emphasis placed on communication and writing. It is not enough to simply know to solve a problem — you are also responsible for explaining that solution and communicating it in written form. When writing solutions, there are three things that you should be aware of:

- (1) If a problem is not simply a calculation; for example, if you are asked to explain or prove something, then writing the required mathematics requires full English sentences, with the understanding that certain mathematical symbols can replace the words they represent (so that the phrase “ $x$  is a member of the set of real numbers and  $x^2$  is not equal to 4” may be written as “ $x \in \mathbb{R}$  and  $x^2 \neq 4$ ”).

- (2) When you write up a solution it will be graded for the way it is written as well as the ideas that are in it. Consequently, you should follow the rules of English usage, such as using proper grammar and punctuation.
- (3) Your solutions will be graded on the degree to which they are: Correct, Clear, and Concise

**Text:** We will be using a set of notes written by Dr. Mike Field. Dr. Field will be teaching the second half of the course next spring from this same set of notes. I have emailed a copy of the notes to all students registered for the course. If you didn't receive a copy, please let me know.

**Course Web Page:** The course web page is located at

[www.math.uh.edu/~tomforde/Math4331.html](http://www.math.uh.edu/~tomforde/Math4331.html)

On the course web page you will find the homework as it is assigned, as well as a copy of this syllabus, exam dates, and announcements as they are made.

**Grading:** The final grade for the class will be determined as follows:

Class Participation:	10%
Homework:	25%
Exam 1:	20%
Exam 2:	20%
Final Project:	25%

**Attendance:** It is vital to attend every lecture and pay attention. Some lecture material does not appear in the text. Questions on the exams will be drawn from homework, reading, and lectures. I also encourage you to ask questions and participate in class. As stated above, 10% of your final grade will be based on class participation.

**Reading:** Reading assignments will be given weekly on the course web page. Completing the reading assignments is just as critical as doing the written homework.

**Homework:** A list of homework problems will be given every week on the course web page. Homework will be due on Fridays and returned on Mondays. **Late homework is not permitted for any reason.** Your lowest homework score throughout the term will be dropped to allow for missed assignments. Expect to spend approximately three hours working on homework outside of class for every hour spent in class. There is a graduate student grader for the course. If you have any issues with the way homework or a particular problem is graded, please contact me.

With regards to the homework that is turned in, the following policies will be in effect:

- Homework without a name will not be graded.
- Write legibly, and use only one side of the paper. Leave enough room for the grader to make comments.
- Your homework should be stapled in the upper-left-hand corner.
- Homework is due at the beginning of class on Fridays. Late homework will not be accepted.
- Homework that is not picked up within two weeks of the date it is handed back will be discarded.
- Your lowest homework score throughout the term will be dropped when calculating your final grade.

Doing the homework is essential. Remember . . .

*“You learn mathematics by doing mathematics.”*

**Exams:** There will be two exams and one final project.

**Exam 1:** Friday, Sept. 17

**Exam 2:** Friday, Oct. 29

**Final:** Wednesday, Dec. 15, 11AM.

**Makeup Policy:** In general, not turning in homework when it is due or not being present for an exam results in a score of zero, and you will not be allowed to make up the work. Exceptions may be made in the case of extreme circumstances, such as a documented, serious illness. In the event that you

cannot be present to turn in homework or take an exam on the day it is held you need to speak to me *in advance*, and make every attempt to do the work *before* (and not after) the rest of the class.

**No Class:** There will be no class the week of Sept. 20–Sept. 24, and there will be no class Oct. 8. In both cases I will be out of town attending conferences.

**Policy on Incompletes:** Incompletes are given only in very unusual circumstances, and never just to prevent a bad grade or provide the student with more time to prepare for an exam.

**Honor Principal:** University of Houston students are expected to adhere to the Academic Honesty Policy (see the Student Handbook for more details). In this course this shall mean the following: Homework can and should be worked on and discussed with others. However, the write-up should be independent and in your own words. In addition, exams shall be worked on independently and without the use of your textbook, homework, or class notes. In addition, if you are aware of anyone who is cheating or receiving unfair, outside assistance, you are honor bound to inform the instructor of what is occurring.

Anyone caught cheating will receive a failing grade in the course and be turned over to the department chair and dean for further disciplinary action.

**Special Needs:** Any student with a disability or chronic health problem for whom special accommodations would be helpful is encouraged to discuss with the instructor the types of assistance that might be offered.