

# Syllabus for Math 6320

## Functions of a Real Variable I

### Fall 2011

**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/Math6320.html](http://www.math.uh.edu/~tomforde/Math6320.html)

**Office Hours:** Monday 10–11AM, Friday 10-11AM (*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. To make an appointment, please send me an email.

**Meeting Times:** MWF 11AM–Noon in 347 PGH.

**Prerequisites:** Graduate standing or consent of instructor. Also, a good understanding of real analysis is essential, and knowledge of point-set topology is very useful.

**Course Description:** This course is an introduction to Measure Theory. Topics include measures, measurable functions, integration, and basic functional analysis.

It is expected that students will be proficient in reading and writing proofs. Proofs in homework should be written in textbook style. In particular, you should keep the following in mind:

- (1) Writing mathematics requires full English sentences, with the understanding that certain mathematical symbols can replace the words they represent. (So, for instance, 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 proof I will grade it 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 proofs will be graded on the degree to which they are: Correct, Clear, and Concise.

**Text:** The textbook used for this course is *Real Analysis: Modern Techniques and Their Applications*, 2<sup>nd</sup> Edition by Gerald B. Folland.

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

[www.math.uh.edu/~tomforde/Math6320.html](http://www.math.uh.edu/~tomforde/Math6320.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 Exam:	25%

**Attendance:** It is vital to attend every lecture and take careful notes. Some lecture material does not appear in the textbook. 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.

**Homework:** A list of homework problems will be given on the course web page, roughly every two weeks. With regards to the homework that is turned in, the following policies will be in effect:

- Homework without a name will not be accepted.
- Homework will not be accepted by email.
- Write legibly, and use only one side of the paper. Leave enough room for comments to be made when grading.
- Your homework should be stapled in the upper-left-hand corner.
- Homework should be written on standard-sized paper (8.5" x 11"), with no "fringe" running down the side as a result of the paper having been torn out of a spiral notebook

- Solutions to homework should be written up in sequential order. (That is, #1 first, #2 second, etc.)
- Homework is due at the beginning of class on the day it is due. Late homework will not be accepted. Homework is considered late once I have started lecturing.
- Homework that is not picked up within two weeks of the date it is handed back will be discarded.

Points will be deducted if these rules are not followed.

Doing the homework is essential. Remember . . .

*“You learn mathematics by doing mathematics.”*

**Exams:** There will be three exams: two midterm exams during the semester and one final exam at the end of the semester. Each exam will be a take-home exam.

**Exam 1:** Due Friday, Sept. 30 at the beginning of class.

**Exam 2:** Due Friday, Oct. 28 at the beginning of class.

**Final:** Due Monday, Dec. 12 at 11AM.

**Makeup Policy:** In general, turning in late homework results in a score of zero. Likewise, not turning in a Take-Home Exam when it is due results in a score of zero, and you will not be allowed to make up the work.

**No Class:** There will be no class on Friday, October 14, because I will be out of town attending a conference.

**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 should be worked on independently. For take-home exams, you are allowed to use your class notes or talk with the instructor. You are not allowed to use your textbook, homework, outside books, or talk with other people besides the instructor. 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.