18.014: CALCULUS WITH THEORY (FALL 2015)

Course Information

Lectures: TR 1-2pm, F 2-3pm in E17-133
Lecturer: Aaron Pixton
E-mail: apixton@mit.edu
Office Hours: T 10:30-11:30am, W 3-4pm in E18-324

Recitations: MW 2-3pm in E17-133
Recitation Instructor: Sam Elder
E-mail: same@mit.edu
Office Hours: R 2-4pm in E18-46B

Course Website

There is a course website at http://math.mit.edu/classes/18.014/2015fa/index.html.

Course Description

This course will cover the same material as 18.01, but with an emphasis on mathematical rigor and proof.

We will cover the introduction and chapters 1–7, 10, and 11.

Rough Schedule of Topics: A more detailed schedule can be found on the course website.

- Weeks 1–2. Sets, the real numbers, induction
- Weeks 3–4. The integral
- Weeks 5–6. Limits, continuous functions
- Weeks 7–8. The derivative, the fundamental theorem of calculus
- Weeks 9–10. Elementary functions, integration techniques
- Weeks 11–12. Taylor’s formula, indeterminate forms

Assignments and Grading

Problem Sets: Problem sets will be assigned each Friday and will be due on the following Friday (in lecture).

You are encouraged to discuss the problems with your classmates, but you must write up your solutions independently. You must also include a written acknowledgment of everyone you worked with in your assignments, as well as any external sources you consulted.

Late problem sets will not be accepted, but your lowest problem set grade will be dropped.

Exams: There will be three in-class midterm exams, on Oct 2, Oct 30, and Nov 20. There will also be a three-hour open-book comprehensive final exam.

Make-up exams will not be given without prior arrangement (preferably with a documentation letter from Student Support Services: http://web.mit.edu/uaap/s3/).
**Grading:** Your final grade will be a combination of the four exams, weekly problem sets, and participation in lecture/recitation. The weights used will be as follows:

- 30% Problem Sets
- 40% Midterms
- 20% Final Exam
- 10% Participation

**Office Hours**

Our current weekly office hours are: T 10:30-11:30am and W 3-4pm in E18-324 (Aaron), R 2-4pm in E18-466B (Sam). These may be subject to change! If your schedule conflicts with these office hours, you are welcome to contact one of the instructors to schedule an alternative meeting time. You may also consult the Math Learning Center: [http://math.mit.edu/learningcenter/](http://math.mit.edu/learningcenter/)

**Disability Accommodations**

If you have a disability accommodation letter from Student Disabilities Services ([http://web.mit.edu/uaap/sds/](http://web.mit.edu/uaap/sds/)), please speak with the mathematics disabilities accommodation coordinator Galina Lastovkina in Math Academic Services (galina@math.mit.edu, E18-366) as soon as possible to make arrangements for the semester.