MATH 111: CALCULUS

SECTION F03, FALL 2014

Place:	Eliot 207
Time:	MTWF, 11–11:50A.M.
Instructor:	Kyle Ormsby (ormsbyk@reed.edu)
Office Hours:	T 9–11A.M. & Wθ 1:30–2:30P.M. in Library 313
	and by appointment or chance encounter
Tutoring:	SuMTWθ 7–9P.M. in Library 387
	Individual tutoring through Student Services
Textbook:	*Calculus of a single variable*
	by Larson, Hostetler, and Edwards, 8th ed.
Website:	people.reed.edu/~ormsbyk/111.html

Summary. In this course, we will study quantities in flux via the Newton-Leibniz calculus. Topics covered include limits, continuity, differentiation, integration, and applications thereof. We will expose the underpinnings of this theory, focusing on concepts and creative problem solving. A smaller but still significant focus will be placed on mathematical definitions and proofs.

Class meets four days a week, with Monday, Wednesday, and Friday devoted to interactive instruction, and with Tuesday focused on directed problem solving.

We will use (but not necessarily follow) the Larson-Hostetler-Edwards calculus book (LHE), which is available from the campus bookstore and is also on hold in the library. Reading will be assigned from LHE in advance of most course meetings, and many homework problems will be drawn from its exercises.

Participation. Our meetings on MWF will use your reading in LHE as a springboard for discussion of and deeper interaction with the mathematics presented. As such, it is key that readings be completed in advance of our meetings. All of our meetings will place an emphasis on active engagement with mathematics and problem solving.

Homework. Homework is due at the start of class each Friday (excluding holidays). In addition to written comments, each problem will be evaluated on a five-point scale:

Date: 2.IX.14.

5 – Perfect, well-communicated solution.
4 – Right idea with minor errors in mathematics or exposition.
3 – Right idea with major problems in execution.
2 – Incorrect solution with significant idea.
1 – Incorrect solution with relevant idea.
0 – None of the above.

Late assignments *may* be accepted at the discretion of the instructor for partial credit.

Please turn in clean solutions[1] (not scratch work) and provide explanations or proofs when appropriate.

Collaboration. Collaboration on homework is encouraged. Feel free to work with a friend, group, or tutor as you work out solutions to the problems. Your collaboration rights, though, come with two responsibilities:

1. Write up your final solution independently from your collaborators. Copied work is unacceptable.
2. Acknowledge all collaborators and tutors by listing their names at the start of your solution.

Failure to shoulder these responsibilities constitutes an Honor Principle violation and will be dealt with accordingly.

Tuesdays. Initiation into the mysteries surrounding our Tuesday meetings will occur next Tuesday.

Technology. The use of electronic devices (cell phones, computers, tablets, calculators, &c) is strictly prohibited in the classroom without prior authorization from the instructor. That said, legitimate uses of technology (*e.g.*, note-taking) will be accommodated — just talk to me first.

A number of computing resources are available for free online or through Reed. These include the open-source software Sage[2] and proprietary Mathematica.[3] These can be useful tools for visualization and computation, but should be used responsibly. Feel free to check your answers with a computer, but avoid going to the computer first.

Tests and grades. We will have an **in-class midterm on Friday, October 17** and a **final exam during the week of December 15**. Your final grade will be determined from a composite score consisting of:

35% Final exam
25% Midterm
25% Homework
10% Quizzes
5% Class participation

[1] Interested students are encouraged to prepare solutions in the LaTeX document preparation system. A guide to LaTeX resources is available on the course website.

[2] `http://www.sagemath.org`

[3] `http://www.reed.edu/cis/help/software/mathematica.html`

Notes.

- Take the date of our final exam into account before making end-of-term travel plans. Accommodations for alternate final exam times will only be made under *extreme* circumstances.
- Please contact me as soon as is reasonably possible if you will miss an assignment due to illness or emergency.

Conclusion. Math is hard, but we're going to get through this together.