

MATH 111: CALCULUS

Instructor: John Lind

Office: Library 390

Office Hours: M 12:10–13:00, W 15:30–17:00, Th 15:00–16:30; also by appointment

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Class meeting: MWF 13:10–14:00 Chemistry 301 [F07]

MWF 14:40–15:30 Library 389 [F06]

The subject of this course is differential calculus of a single real variable. The goal is to obtain a conceptual understanding and calculational mastery of limits, derivatives, and integrals. The basic properties of polynomial, trigonometric, exponential, logarithmic, and rational functions will be developed so that we have a rich supply of interesting examples. We will also explore the theoretical basis of the subject by examining tangency, continuity, the mean value theorem, and the definition of the Riemann integral.

This course will be taught using the Inquiry Based Learning (IBL) method. This means that I will not lecture. Rather, you will solve problems and deduce theoretical conclusions together as a class. The IBL format fosters creativity and a deep understanding of the material. However, its success depends heavily on the efforts of the students: you must be actively engaged and prepared every day.

Text. The text for the course will be written by the students throughout the semester. I will give sheets (together known as the ‘script’) with definitions and problems to solve. After the material is presented in class, you will write up your work in a ‘journal’, which will then serve as a reference text. We will also use the following textbook as a supplementary reference:

- Calculus (single variable), 6th edition, Hughes-Hallett, et. al. (available in the bookstore and on reserve in the library [QA303.C155 2013])

Assignments, Exams. You will regularly turn in your journal from class. It is recommended that you take notes in class as we go so that this is an easy chore and not a gargantuan feat. In addition, there will be weekly ‘explorations’ due in class on Friday. There will be one midterm exam and one final exam.

Tutoring. There is a drop-in math tutoring center open Sundays through Thursdays, 19:00–21:00, in Library 387.

I expect you to comport yourself with honor, as derived from respect for the academic program, your peers and your instructors. Collaboration is an important part of the mathematical life, and I *strongly encourage* you to talk to your peers and work on problems together outside of class. The work that you turn in is a reflection of your own understanding of the material and should be written entirely by you, in your own words, with proper attribution of your collaborators at the beginning. I consider copied homework to be an honor principle violation.