

COURSE INFORMATION

MATH 140 – Calculus II

Williams College

Course homepage:

<http://web.williams.edu/Mathematics/lg5/140/>

Instructor: Leo Goldmakher (please address me by name – either *Leo* or *Professor Goldmakher* is fine)

Office: Bascom 106A

Phone: (413) 597-2361

email: Leo.Goldmakher@williams.edu

Office hours: Wednesdays 2:00–3:30, Thursdays 2:30–4:00.

You are also welcome any time my office door is open, but if my door is shut I ask you not to knock.

I will be unavailable all day on Tuesdays (my designated research day).

Lectures: All lectures take place MWF 9:00am – 9:50am in Stetson 110.

Textbook: Edwards and Penney, *Calculus Early Transcendentals*, 7th ed.

Practice problems will be assigned from the book, and will correspond to the problem numbering in the 7th edition (which might be different from previous editions).

Syllabus: Integral calculus is one of the key tools in analyzing and describing continuous phenomena, such as the distance it takes a car to come to a complete stop after you slam the brakes, or how long you must wait before being able to comfortably sip from a freshly poured mug of tea. In addition to being extremely useful and ubiquitous in science, the mathematics behind integral calculus – dealing with the infinitely large and the infinitesimally small – is awesome. In this course we will explore both the theoretical underpinnings and the practical applications of the subject. We will discuss integrals, their relation to calculating lengths, areas, volumes, and averages, and the fundamental theorem of calculus. We will cover various techniques for evaluating integrals both analytically and numerically, study differential equations, and explore applications (e.g. to physics and criminology). We will finish with a discussion of coordinate systems and (as time permits) Taylor series.

Teaching Assistants: There will be three TAs for this course:

- Yannick Davidson <yrld1@williams.edu>
- Nick Hollon <nrh3@williams.edu>
- Heidi Leeds <hll2@williams.edu>

Each student will be assigned to a tutorial pair, and the two of you will meet with a TA outside of class for one hour per week to go over any material you find confusing. Although student attendance at these sessions is not mandatory, your overall course grade will be raised depending on how many sessions you attend; more details below.

Problem sessions: There will be three TA-guided problem sessions, each on the evening before the problem set due date:

- Sunday, 8pm–9:30pm, Stetson 109
- Tuesday, 8pm–9:30pm, Griffin 2
- Thursday, 8pm–9:30pm, Griffin 2

You are encouraged to collaborate on homework problems during these sessions, but I request that you write down your solutions in physical isolation.

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Assessment: Your grade will be calculated based on several components:

1. Problem Sets – 5% total.

There will be short assignments due every class. They will be graded based on honest attempts; so long as you've put in effort on each assigned problem, you'll get full credit, whether or not you arrive at an answer.

Life happens, and sometimes you won't be able to complete an assignment on time. That's OK! I'll drop your two lowest problem set scores.

2. Quizzes – 10% total

There will be a short quiz every Monday, consisting of two to three of the assigned problems due the previous week. It is expected that you will have worked through all the problems carefully in advance, so there will not be much time given to take the quiz.

3. Short presentation – 10%

Each of you will give a short (3-5 minute) presentation on a topic that's new to you, but involves calculus in some way. The talk is very short, so I expect it to be given without using slides or notes. More details will be given during the first week.

4. Oral midterm exam – 35%

This will take place during the week of March 17th; more information to be given soon.

5. Final exam – 35%

This will be a self-scheduled (written) final exam.

6. Best of your two exam scores – 5%

7. Tutorial attendance – for every three tutorial sessions attended (out of nine total), one extra percentage point will be added to your overall course grade. No partial credit.

Team work and plagiarism: I strongly encourage you to brainstorm with other students as you work on your problem sets. However, **you must write up the solutions on your own without copying from any text (written or spoken)**. For example, if you take notes during a problem session based on a solution explained to you by the TA or another student, *do not copy from these notes* when writing up your assignment! When you read this sentence, please send an email to our TA Nick with subject line consisting of the single word ephlat. To avoid a slippery slope, I encourage you to write up your problems sets in physical isolation from any other student and from any notes you've taken while with other students.

Internet usage: The internet is an amazing resource, but I urge you to use it wisely. In particular, I request that you do not search for problems or examples. **Looking up definitions is OK, looking up (or asking about) problems online is not.** It is better to struggle on your own and *not* solve the problem than to simply copy a solution. When it comes to exams, please don't use the internet for any class-related reason apart from accessing the official course website.

Peer Tutoring (free!): The Peer Academic Support network provides free peer tutoring. A schedule showing available individual tutoring sessions for this class is available through the TutorTrac website:

`tutortrac.williams.edu`

The site will be updated weekly, but can only be accessed when you're on the Williams College network. Step-by-step instructions for finding and scheduling tutoring sessions are on the Peer Tutoring Program website (`academic-resources.williams.edu`). If you have any questions about tutoring at Williams, please email `msrc@williams.edu`

Computers and phones in the classroom: Computers and phones *may not to be used at any time in the lecture room*, as this is distracting both for you and for your fellow students. If you have something you need to do urgently on your computer or phone, quietly take it outside the classroom and do it there; I will never be offended by this, so long as you do not disrupt the class. If you take notes on your computer, please talk to me about it.