

MATH 111 - SINGLE VARIABLE CALCULUS I

Calculus is the abstract reality behind phenomena in fields ranging from Engineering to Biology. It is also one of the pillars of Mathematics. My goal is to present single-valuable calculus while providing strong motivation for the material. Because it's hard to learn without doing, it is important that you do the homework. This course will expand your mind.

BASIC INFO

Instructor	Sasha Gutfraind (ag362@cornell, Rhodes Hall 657)
Course Assistant	Hanah Chae (hc347@cornell)
Meet	Balch Hall 3300, 8:00am MWF
Textbook	Calculus: Single Variable / Adams, R.A. 6th edition

PROGRAM

Week	Material	Textbook Secs	Notes
1	Rates of Change	1.1	-
2	Limits & Continuity	1.2, 1.3, 1.4	Homework (=HW) due F
3	Tangents, Derivatives & Derivative Rules	2.1, 2.2, 2.3	HW due F
4	Chain Rule, Trig functions & Mean Value Thm	2.4, 2.5, 2.6	HW due F
5	Applications, Implicit Different. & Antiderivs.	2.7, 2.9, 2.10	HW due F
6	Inverse functions, Exponentials & Logs	3.1, 3.2, 3.3	Prelim on T; HW due F
7	<i>Applications</i> , Inverse trig functions & Apps	3.4, 3.5, 4.1	Corrections due M; HW due F
8	Apps, Critical and Extreme values	4.1(cont), 4.2	M=break; HW due F
9	Extreme values, Curve Sketching & Apps	4.3, 4.4, 4.5	HW due F
10	Roots of Eqns, Linearization & Taylor Polynoms.	4.6, 4.7, 4.8	Prelim on R; <i>no HW</i>
11	Taylor Polynoms. (cont.) & Indeterminate Limits	4.8, 4.9, 2.11	Corrections due W; HWs due <i>M&F</i>
12	Sums, Areas as sums & Definite Integrals	5.1, 5.2, 5.3	HW due F
13	Def. Integral, its properties & Fundamental Thm.	5.3, 5.4, 5.5	HW due F
14	Integration by substitution	5.6	HW due <i>M</i> ; Thanksgiving
15	Review	Review	Prelim on T; HW due <i>M</i>

OTHER INFO

- Outside of class, most of course communication is through the Blackboard website. This includes pre-class warm-ups, solutions to homeworks, and help forums. You need to register in Blackboard alongside your registration for the course itself.
- Sasha will be available during weekly office hours (to be scheduled during 2nd week of classes), and announced on Blackboard.
- Your friendly undergraduate Course Assistants are available to help you every Wednesday 6 - 10:30 PM in Malott 406 and Thursday evenings from 6 - 10:30 PM at the Carol Tatkon Center (Rm. 3330 Balch Hall). Learn calculus by discussing the material & HW with your colleagues!

- Homeworks are due 8am in class, usually on Friday (see program above).
- Each homework will receive two grades written side-by-side:
 - (1) A grade for turning solutions to all questions. Each question that has an “honest-effort” solution will receive one point.
 - (2) A grade for correct solutions on a subset of the homework problems. You will receive detailed feedback on these questions.
- Working with your friends on HW is encouraged, but copying from them defeats the purpose of doing homework.
- Prelims: After grading and returning your prelims, you will have a chance to rewrite bad solutions. These corrections will allow you to learn from your mistakes and also to reclaim up to 50% of the lost points.
- Course Grades: three prelims + final = 75% of the grade. Exam will be equivalent to 1.5 prelims in weight. The rest will come mostly from homeworks. Warm-up questions, and other work will count too.