Math 1101 (Section 001): Calculus I

Logistics:

- Instructor: Cailan Li
- Place and Time: 407 Mathematics, MW 11:40AM-12:55PM
- Office Hours: Tuesdays, 1:30-3:30 PM in 528 Mathematics
- Course Website: https://math.columbia.edu/∼ccl/s20
- TA: Guillermina Peragallo
- TA Help Room hours: Monday 9-11 AM in 502 Milstein

Course Content: The textbook will be James Stewart, *Calculus: Early Transcendentals*, 8th edition. We will roughly cover

- Functions and Models (Chapter 1)
- Limits and derivatives (Chapter 2)
- Differentiation rules (Chapter 3)
- More on Differentiation (Chapter 4)
- Integration (Chapter 5)
- Area Between Curves and Volume (Chapter 6.1-6.2)

Grading: Your grade is calculated as the maximum of the following two schemes

(i) 15% Homework + 20% Midterm 1+ 20% Midterm 2 + 45% Final; or

(ii) 15% Homework + 23% higher of the two midterms + 60% Final

The dates for the exams are

(1) Midterm 1: **February 19th**

(2) Midterm 2: **April 1st**

(3) Final (projected): **May 11th, 9 AM−12 PM**

No make up exams will be given. Welcome to the real world. If you do miss one of the midterms, then option (ii) above will almost let you drop a midterm. However do notice that you will only be able to obtain 98% of the possible points under option (ii) so skipping a midterm intentionally is not advised.

Homework: There will be weekly homework assignments posted on the course website due before class by **11:40 AM on Mondays**. Submit it to the box labeled UN1101-001 Li on the 4th floor of the Math Building, next to room 407. Late homeworks will be disposed. Your lowest homework grade will be dropped. You are encouraged to discuss the homework with other students but you must write your solutions individually, in your own words. Please staple your assignment.

If you need help with your assignments, I highly enourage you to vist 502 Milstein help room in Barnard. You can drop by whenever it's open.

Contact Information: If you have questions relating to enrollment or administration please contact Alenia Reynoso at `reynoso@math.columbia.edu`. For matters relating to the course that doesn't include help with homework (please come to office hours), you may email me directly at `cailan.li@columbia.edu`.

Expectations: The classroom should be an open and welcoming environment. Do not be afraid to ask questions. Struggling with the material or confusion about ideas are not signs of weaknesses, but rather crucial parts of learning and growing as a mathematician. Be honest with yourself about whether you understand something and whenever you are confused, *please* ask me to clarify and *please* ask for help.

Calendar: A tentative Calendar is below. An updated version will be periodically updated on the course website along with information on homework.

Week 1	1/22	(1.1, 1.2, 1.3) Introduction, Functions
Week 2	1/27, 1/29	(2.1, 2.2, 2.3, 2.5) Limits, Limit Laws, Continuity
Week 3	2/3, 2/5	(2.5, 2.6, 2.7) Continuity, IVT
Week 4	2/10, 2/12	(2.8, 3.1, 3.2) Derviatives, Tangent Lines, Product Rule, Quotient Rule
Week 5	2/17, $\boxed{2/19}$	Review, **Midterm 1**
Week 6	2/24, 2/26	(1.4, 3.3, 3.4) Derivatives of Exponential and Trignometric Functions, Chain Rule
Week 7	3/2, 3/4	(3.5, 1.5, 3.6, 3.9) Inverse Functions, Implicit Differentiation, Related Rates
Week 8	3/9, 3/11	(4.1, 4.7, 4.2) Max/Min, Optimization, MVT
Spring Break	3/16, 3/18	Homework
Week 9	3/23, 3/25	(4.3, 4.5, 4.4) Curve Sketching, L'Hopital's Rule
Week 10	3/30, $\boxed{4/1}$	Review, **Midterm 2**
Week 11	4/6, 4/8	(3.10, 4.9, 5.1) Linear Approximation, Antiderivatives, Areas
Week 12	4/13, 4/15	(5.2, 5.3) Riemann Sums, Definite Integrals, Fundamental Theorem of Calculus
Week 13	4/20, 4/22	(5.4, 5.5) Indefinite Integrals, Substitution Rule
Week 14	4/27, 4/29	(6.1, 6.2) Area between curves, Volume
Finals Week	5/4, $\boxed{5/11}$	Review, **Final**