

MATH 150.17/18: Calculus with Analytic Geometry I
SEMESTER: Fall 2020
INSTRUCTOR: Christopher Natoli

1 Details

Course website: <https://nato.li/teaching>
Email: chrisnatoli@gmail.com (*do not email me at any other address*)
Textbook: *Essential Calculus* by James Stewart, second edition

2 Online instruction

This course will be taught completely online without any in-person component. All lectures will be asynchronous: they will be uploaded to YouTube on Mondays and Wednesdays, with links to the videos posted on the course website. You do not have to watch the videos during the official class time, but you are encouraged to keep a consistent schedule so you don't fall behind. You are also encouraged to take your own notes while watching the video lectures, as if it were an in-person class.

Office hours will be on Zoom. They will be weekly on Mondays, 4:00–6:00PM Eastern Time. You are encouraged to bring questions from the lecture or homework.

All announcements and details will be posted on the course website. There is no Blackboard page for this course. You can come to office hours or reach me by email if you have questions.

3 Homework

Like anything, math is best learned through practice, so homework is an essential component of this course. For most weeks, problem sets will be assigned on Wednesdays and due the following Wednesday at 11:59PM Eastern Time. All problem sets will be conducted on an online platform called Lumen. You must pay \$25 to use Lumen. Register for this course's Lumen page at <https://ohm.lumenlearning.com>. The course ID is 47980 and the enrollment key is `natoli_math150_fall2020`.

Note that there is an optional assignment called Practice with Lumen OHM, which won't count toward your grade but explains how the platform works, how to input your answers, etc. For example, $x^{3/4}$ will be interpreted as $\frac{x^3}{4}$ instead of $x^{3/4}$. To input $x^{3/4}$, you need to use either Lumen's math editing system or parentheses: $x^{(3/4)}$.

On Lumen, you are allowed to try each question three times without penalty. Furthermore, you are given three built-in LatePasses, which you can choose to use to extend the due date of a problem set part by 24 hours. If you have issues with the platform or questions about the homework in general, email me, rather than messaging me through Lumen.

4 Exams

There will be three quizzes and one final exam. The first three quizzes will each cover the material since the last exam, but the final exam will be cumulative. The current plan is that all exams will be conducted online through Lumen. They will be open-book in the sense that you can refer to your notes, the textbook, the video lectures, but graphing calculators and online calculators are not allowed, nor are you allowed to work with others on exams.

5 Grading

Your final grade will be 10% problem sets + 90% exams. The final exam is worth the same as two quizzes. Your lowest exam grade will be dropped; if the final is the lowest grade, it will be worth the same as one quiz. If you miss an exam, that will count as your lowest grade, so it will be dropped.

6 Lecture schedule

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| 0. Introduction and Review | 14. §3.2 The Mean Value Theorem |
| 1. §1.3 The Definition of Limits | 15. §3.3 Derivatives and the Shapes of Graphs |
| 2. §1.4 Calculating Limits | 16. §3.4 Curve Sketching |
| 3. §1.5 Continuity | 17. §3.5 Optimization Problems |
| 4. §1.6 Limits involving Infinity | 18. §3.7 Antiderivatives |
| 5. §2.1 Derivatives and Rates of Change | 19. Quiz 2 |
| 6. §2.2 The Derivative as a Function | 20. §4.1 Areas and Distances |
| 7. §§2.3-2.4 Basic Differentiation Formulas and the Product and Quotient Rules | 21. §4.2 The Definite Integral |
| 8. §2.5 The Chain Rule | 22. §4.3 Evaluating Definite Integrals |
| 9. §2.6 Implicit Differentiation | 23. §4.4 The Fundamental Theorem of Calculus |
| 10. §2.7 Related Rates | 24. §4.5 The Substitution Rule |
| 11. Quiz 1 | 25. §7.1 Areas Between Curves |
| 12. §2.8 Linear Approximations and Differentials | 26. §7.2 Volumes |
| 13. §3.1 Maximum and Minimum Values | 27. §7.3 Volumes by Cylindrical Shells |
| | 28. Quiz 3 |

7 Fine print

7.1 Academic integrity

Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

7.2 Disability

In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical and/or Learning) consult the Office of AccessABILITY located in Room 1214B Hunter East to secure necessary academic accommodations. For further information and assistance please call (212-772-4857)/TTY (212-650-3230).

7.3 Sexual misconduct

In compliance with the CUNY Policy on Sexual Misconduct, Hunter College reaffirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationships. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College. See the CUNY Policy on Sexual Misconduct link: <http://www.cuny.edu/about/administration/offices/la/Policy-on-SexualMisconduct-12-1-14-with-links.pdf>

a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, or contacting the College's Public Safety Office (212-772-4444).

b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

7.4 Free CUNY

Free CUNY is a student-led organization working for a free and liberatory university. Our vision of a free CUNY is rooted in the long history of Black and Brown working-class student organizing at CUNY, and incorporates anti-racist and abolitionist principles in our work. Free CUNY advocates for a tuition-free university, as well as for free MetroCards and childcare, zero-cost textbook classes, and many other ways to transform our university.

In addition to protests and events, Free CUNY holds open weekly meetings, and we invite all students, workers, and community members to come through! Follow us on Instagram @freecuny, Twitter @cuny_free, and Facebook: Free CUNY.