Course: **MATH155 Calculus with Analytic Geometry II**	Instructor: Bora Ferlengez
Section: 4	Email: **bora.ferlengez@gmail.com**
Lectures: Monday, Tuesday, Wednesday, Thursday	Office Hours: Mon-Thurs, 5:00pm to 5:30pm
5:45pm-7:50pm, Blackboard Collaborate Ultra	or by appointment, online

Course Description

This is the second semester of a calculus sequence which is an introduction to differential and integral calculus, suitable for all students majoring in science or mathematics, or any other course of study requiring calculus.

Expected Learning Outcomes

The student will be expected work with inverse functions (in particular, exponential and logarithmic functions) to differentiate and manipulate transcendental functions, evaluate definite and indefinite integrals using substitution, integration by parts, trigonometric substitution, and partial fractions, approximate definite integrals using numerical techniques, compute arc lengths of curves and areas of surfaces of revolution in rectangular and polar coordinates, evaluate the convergence of infinite series, and compute and manipulate power series representations of functions.

Prerequisites

Completion of Math150 or the equivalent with a grade of C or higher, or appropriate score on the CUNY math placement exam.

Textbook

ESSENTIAL CALCULUS, **2nd Edition** by James Stewart,
(ISBN-10: 1133112293; ISBN-13: 978-1133112297, Publisher: Cengage Learning)
Please be aware that we will **NOT** use WebAssign this semester, no need to purchase the WebAssign bundle. If you wish, you can purchase a used textbook.

Homework

We will use **Lumen OHM**, an online homework manager. The average of the homework will count for 10% of your letter grade.
To have access to our Lumen course, first go to https://ohm.lumenlearning.com/ and create an account (costs $25), find our course by searching the COURSE ID: 44306, and finally use the Enrollment key: math15504summer20ferlengez to enroll.
The due date for a HW set is the midnight before corresponding exam, the idea being that you complete the HW before the exam and that should help a lot to prepare for the exam. Please manage your time wisely and **do not ask for an extension**.
An obvious advice here: **Complete each HW set within a week** the topic is covered in class. Leaving all HW to the last one or two days is a terrible idea which causes nothing but panic and confusion.

Dolciani Learning Center

Dolciani Learning Center is a great place where you can get help from tutors. (http://www.hunter.cuny.edu/dolciani).

Tentative calendar

week	lecture	date	day	topic
1	1	May-26	Tue	5.1 Inverse Functions, 5.2 The Natural Logarithm Function
	2	May-27	Wed	5.2 The Natural Logarithm Function, 5.3 The Natural Exponential Function
	3	May-28	Thu	5.5 Exponential Growth and Decay
2	4	Jun-01	Mon	5.6 Inverse Trigonometric Functions
	5	Jun-02	Tue	5.8 Indeterminate Forms and L'Hospital's Rule
	6	Jun-03	Wed	6.1 Integration by Parts, 6.2 Trigonometric Integrals and Substitutions
	7	Jun-04	Thu	**Test 1 (Inverse Functions)**, 6.2 Trigonometric Integrals and Substitutions
3	8	Jun-08	Mon	6.3 Partial Fractions, 6.4 Integration with Tables and Computer Algebra Systems
	9	Jun-09	Tue	6.5 Approximate Integration
	10	Jun-10	Wed	6.6 Improper Integration, 7.4 The Arc Length
	11	Jun-11	Thu	7.4 Arc Length, 7.5 Area of Surface of Revolution
4	12	Jun-15	Mon	**Test 2 (Integration Techniques)**, 7.5 Area of Surface of Revolution
	13	Jun-16	Tue	7.6 Applications to Physics and Engineering, 7.7 Differential Equations
	14	Jun-17	Wed	8.1 Sequences
	15	Jun-18	Thu	8.2 Series
5	16	Jun-22	Mon	8.3 The Integral and Comparison Tests, 8.4 The Other Convergence Tests
	17	Jun-23	Tue	8.4 The Other Convergence Tests, 8.5 Power Series
	18	Jun-24	Wed	**Test 3 (Applications of Integration, Basics of Sequences and Series)**, 8.6 Representing Functions as Power Series
	19	Jun-25	Thu	8.6 Representing Functions as Power Series, 8.7 Taylor and Maclaurin Series
6	20	Jun-29	Mon	8.7 Taylor and Maclaurin Series, 8.8 Applications of Taylor Polynomials
	21	Jun-30	Tue	9.1 Parametric Equations and Polar Coordinates, 9.2 Calculus with Parametric Curves
	22	Jul-01	Wed	9.2 Calculus with Parametric Curves, 9.3 Polar Coordinates
	23	Jul-02	Thu	**Test 4 (Series Expansions of Functions, Parametric Equations and Polar Coordinates)**, Review
7	24	Jul-06	Mon	Final Exam

Colors represent exams that will cover the corresponding topic.
The dates may change depending on how fast we advance.

homework	topics (colored by chapter)	will covered in
Yes	5.1 Inverse Functions	test 1
Yes	5.2 The Natural Logarithm Function	test 1
Yes	5.3 The Natural Exponential Function	test 1
No	5.4 General Logarithmic and Exponential Function	test 1
Yes	5.5 Exponential Growth and Decay	test 1
Yes	5.6 Inverse Trigonometric Functions	test 1
No	5.7 Hyperbolic Functions	test 1
Yes	5.8 Indeterminate Forms and L'Hospital's Rule	test 1
Yes	6.1 Integration by Parts	test 2
Yes	6.2 Trigonometric Integrals and Substitutions	test 2
Yes	6.3 Partial Fractions	test 2
No	6.4 Integration with Tables and Computer Algebra Systems	test 2
Yes	6.5 Approximate Integration	test 2
Yes	6.6 Improper Integration	test 2
No	7.1 Applications of Integration†	test 2
No	7.2 Volumes†	test 2
No	7.3 Volumes by Cylindrical Shells†	test 2
Yes	7.4 Arc Length	test 2
Yes	7.5 Area of Surface of Revolution	test 3
Yes	7.6 Applications to Physics and Engineering	test 3
No	7.7 Differential Equations	test 3
Yes	8.1 Sequences	test 3
Yes	8.2 Series	test 3
Yes	8.3 The Integral and Comparison Tests	test 3
Yes	8.4 Other Convergence Tests	test 3
Yes	8.5 Power Series	test 4
Yes	8.6 Representing Functions as Power Series	test 4
Yes	8.7 Taylor and Maclaurin Series	test 4
Yes	8.8 Applications of Taylor Polynomials	test 4
Yes	9.1 Parametric Equations and Polar Coordinates	test 4
Yes	9.2 Calculus with Parametric Curves	test 4
Yes	9.3 Polar Coordinates	test 4

The topics in gray fonts will be either explained shortly, or
supplementary videos will be provided, or will be omitted.
†: These topics are covered in Calculus I

Computer

Since this is an online course, you'll need to have a laptop/desktop. If you don't have one, Hunter College borrows laptops as far as I know: https://hunter.cuny.edu/coronavirus/

Blackboard Collaborate Ultra

For the lectures, we will use Blackboard Collaborate Ultra. You can watch the tutorial I've uploaded to learn how to join a session, to participate or to watch a recording: https://www.youtube.com/watch?v=gBgFLB9JPas

Telegram

We have a Telegram group for the course. It is an instant messaging app (mobile and desktop), that hopefully improve our connectivity. Since everything will be online, all sorts of glitches and issues are to be expected. By using Telegram, I can make quick announcements and you can reach me quickly if something goes wrong when you are taking a test etc. You can hide your personal information in the privacy settings.

I suggest you install both the desktop and mobile app. Once you install the app and create an account, you can join the course group by using the invitation link: https://t.me/joinchat/QIwfTEzia1fC0w8lNx5vTw

Zoom

We will use Zoom for exam proctoring. I am not sure if you have to create an account, but do so, just in case.

Microsoft OneNote

We will have a course notebook that I will share with you. That way you will have access to class notes. Being a Hunter College student, you have a Microsoft Office licence: http://www.hunter.cuny.edu/it/it-services/microsoft-office-suite

Exams

- There will be four quizzes on Lumen OHM and a final exam on Blackboard (or Lumen OHM).
- You can use a scientific calculator (Strict rule: **Graphing calculators, phones etc. not allowed!**).
- You will be expected to join to a Zoom meeting using your phone for proctoring purposes.

Grading Policy

There will be 4 quizzes exams and a final exam. The final exam will count as 2 exams. Of these 6 parts, the lowest is dropped, and the remaining 5 parts are averaged to obtain the exam average. If you stop attending the course (which includes attending the final exam) and do not withdraw, you will receive a grade of WU. I am not allowed to change grades from D to F, please do not email me with this request but you can talk to the mathematics undergraduate advisor.

Your final average is calculated as follows: $0.9 \times$ Exam average $+ 0.1 \times$ (Lumen Homework)

To receive an incomplete, you must have taken at least two of the in-class exams, have a C average on those exams, and have a legitimate excuse for missing the final exam. To request a CR/NC you must attend class and take the exams including the final exam. The letter grade is determined as follows:

Grade	F	D	C	C+	B-	B	B+	A-	A	A+
Percent	≤ 59.9	60.0-69.9	70.0-77.4	77.5-79.9	80.0-82.4	82.5-87.4	87.5-89.9	90.0-92.4	92.5-97.4	≥ 97.5

Meetings with Me

If some topic is not crystal clear for you and you need help, or for any other matters concerning the course, you can stay after class and talk to me. If you prefer to send me an email, please use the email address I've provided above and make sure you **start your subject line with "math155"**.

For example, your subject line can look like this: | math155 – Request for an extra meeting |

Pro Tips

- **Please attend the lectures**. If you miss a lecture, contact me and make sure you don't stay behind. In math, new concepts are built on top of earlier concepts. And missing lectures will harm your learning experience greatly.
- Use your time wisely. A good practice would be **keeping a notebook** and writing your interpretation of the core ideas of each lecture, problems (HW or in-class) you find interesting or difficult and math tricks you find useful.
- Summer courses go really fast. If you miss a lecture, or if you are confused about a topic or HW problem, please contact me immediately.
- **Mathematical concepts require time to sink in**. Please, please, please, create a suitable learning rhythm for yourself right at the beginning of the semester and don't leave studying to the day before the exam.
- And **act immediately**: If something is missing or wrong (maybe you have issues with preliminaries, or you're confused about a problem, or you received your exam back and see some unexpected mistakes), **don't wait**.
- Practical advice: Never miss **the lecture before an exam**.

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.

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).