

Instructor: Nicholas Matteo
matteo.n@husky.neu.edu

Office Hours: 12:00 – 1:00 pm Monday/Wednesday, 537 Nightingale
3:30 – 4:30 pm Thursday, 537 Nightingale
Email to arrange another time.

Lectures: 4:35 – 5:40 pm, MWR, 239 Richards

Materials:

- *Calculus Concepts (Fifth Edition): An Informal Approach to the Mathematics of Change* by LaTorre et al, Brooks/Cole, Cengage Learning, 2012 with Enhanced Web Assign (EWA).
- The **TI-83**, **TI-83 Plus**, **TI-84**, or **TI-84 Plus** calculator is required. **No other calculator may be used on tests or the project without the explicit permission of your instructor.**
- A class packet (for Fall 2012) must also be purchased from NU Reprographics (x5646) located in the basement of Ell Hall behind the NU Bookstore. **Please bring your packet and calculator to each class.**

Course Content

This course introduces students to the use of derivatives and integrals in solving problems in business and economics, e.g., maximizing profit, calculating average investment income, future value of an income stream, and consumers' surplus. (A more detailed syllabus is given below.) **A project involving optimization is also required.** This project is described in the class packet. The graphing calculator is **used extensively** and prior familiarity with graphing calculators is helpful. Prerequisites: MATH 1130 (formerly MTH U130) or the equivalent.

You will need to create a WebAssign account to access EWA and do your homework assignments. Go to www.webassign.net and choose "I have a class key." On the next page, enter the class key **neu 4779 2491**. If you already have a WebAssign account from another class, you can use that; otherwise, create a new one. Please put in your first name, last name, and student id number the same as in University records, so that EWA records can be automatically matched with Blackboard. You have a two week grace period before providing an access code.

You have several options for obtaining the textbook and EWA:

- You can purchase the "bundle" at the NU Bookstore which includes the hardcover textbook and the access code to the EWA online homework, or you can purchase the "Standalone" code, which includes the ebook. The second option is much cheaper.
- You can purchase the Standalone Access Code on CengageBrain, the ecommerce website, by visiting www.cengagebrain.com. Here is the ISBN: 0538738103.
- You can purchase the Standalone Access Code directly through the WebAssign Home Page, www.webassign.net. Use the same ISBN as above.

Assignments

A list of homework exercises from the textbook and class packet is attached. (This list is subject to revision.) Homework exercises should be done by the next class after they are assigned. You are responsible for knowing the solutions of **all** homework exercises. The questions on exams and quizzes will be based on homework exercises from the textbook, packet, **quiz and test review exercises in the packet** and the material in lectures. **In order to get credit for doing homework you must do the corresponding exercises on line using EWA.** Your scores will be recorded automatically, and this will be the basis of your homework grade. Log in to EWA at www.webassign.net; there is a link on Blackboard. (Note to Mac users: EWA does not work well with the Safari browser; please use Firefox instead.)

Attendance

You are expected in class each day. If for some reason you are unable to come to a class, then if possible send an e-mail to let me know.

Exams

There will be 9 quizzes (20-30 minutes each), a 1-hour test (the midterm), and a final exam. (The grade from quiz 1 and the best 7 other quiz grades will be counted.) The final exam will count 40% of your course grade. **All students without legitimate conflicts approved by the instructor will take the final exam at the scheduled time: 10:30 am – 12:30 pm Thursday, December 13, in Behrakis Health Sciences Cntr 030.** The final exam is cumulative and is common for all sections of MATH 1231. **DO NOT MAKE TRAVEL PLANS THAT CONFLICT WITH THE FINAL EXAM.**

There will be no make-ups except for University-excused absences (see your catalog.) In this case, the missed exam must be made up within a week.

Grading

Your final grade will be determined by: quiz grades (25%); homework (5%); midterm grade (15%); project grade (15%); and final exam score (40%). Borderline grades are determined by the final exam score.

The approximate cut-offs for letter grades are as follows:

Course Average	Course Grade
93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
67-69	D+
63-66	D
60-62	D-
0-59	F

The last day to drop a course without receiving a ‘W’ grade is September 25. The last date to drop a class with a ‘W’ grade is November 20. As a matter of Math Department policy, the **I grade** (incomplete) will be given only rarely. It is intended to cover real emergency situations in which a student who is doing reasonably well (C- or better) is unable, *due to circumstances beyond the student's control*, to complete all course requirements (e.g., is unable to take the final exam due to hospitalization). An **I** may not be used to rescue a failing grade, or to postpone the final.

If you want to see me, but cannot do so during my office hours, then please see me before or after any class to set up a convenient time. Also, please take advantage of the office hours of the other instructors in the course when they are more convenient.

Rekha Bai	r.bai@neu.edu	M, W, Th 12 - 1 PM	541 LA
Dimitrios Fotiadis	d.fotiadis@neu.edu	M 11:45 AM - 2:45 PM; Tu, F 10 AM - 11:30 AM	319C HA
Rajini Jesudasan	r.jesudason@neu.edu	M, W 3 - 4:30 PM	539 LA
Donald King	d.king@neu.edu	M 2:45 - 4:15 PM; W 1:45 - 3:15 PM	447 LA
Nicholas Matteo	matteo.n@husky.neu.edu	M, W 12 - 1 PM, Th 3:30 - 4:30 PM	537 NI
Ilya Scheidwasser	scheidwasser.i@husky.neu.edu	M, W, Th 6:10 - 7:10 PM	527 NI
Sumi Seo	s.seo@neu.edu	M, W, Th 3 - 4 PM	540A NI
Massoud Shojai	massoud.shojai@gmail.com	M, Th 9:15 AM - 10:15 AM; W 11:55 AM - 1 PM	540A NI
Simone Cecchini (TA)	cecchini.s@husky.neu.edu	M, W 5 - 7 PM	551 NI
He Wang (TA)	wang_he1@husky.neu.edu	Tu 6 - 9 PM	527 NI

Academic Honesty

Cheating will not be tolerated. All incidents of cheating will be reported to the Office of Judicial Affairs. The University's policy on cheating and related disciplinary actions is detailed in the Student Handbook and at <http://www.northeastern.edu/osccr/academicintegrity>.

Tutoring

There is a free math tutoring center located in the math department on the 5th floor of Nightingale Hall (540B NI). Beginning September 17, hours are Mon-Wed 10 am – 8 pm, Thurs 10 am – 6 pm, Fri 10 am – 1 pm. Students can sign up for appointments on <http://neumath.mywconline.com>. Appointments cannot be made by phone. If the schedule is booked, you can still drop in, since occasionally students sign up for an appointment and don't show up.

TRACE

Every student is required to participate in the online course evaluation system, TRACE (Teacher Rating and Course Evaluation.) You will receive emails about this near the end of the semester.

Resolving disputes and complaints

If you are not satisfied with my responses to your serious concerns (including your final course grade), please consult Prof. D. King, the course coordinator, 447 LA, x5679, email: d.king@neu.edu.

The schedule below is tentative. The instructor reserves the right to make changes if necessary. **It is the responsibility of each student to stay abreast of what happens in the classroom, changes in the assigned exercises and changes in the date of quizzes or exams.**

9/5:	2.1: average rate of change	HW: 9, 17, 18, 22a Read project description in packet
9/6:	2.1 Using the TI-84 QUIZ 1	HW: 13, 23, 24abc Packet Model Review probs 1, 2 Read packet notes on Use of the Calculator, Scatter Plots and Models on the TI 83-84; See textbook page 121
9/10:	2.2; 2.3: Tangent line and the derivative	HW: 2.2: 7, 8, 11ab, 13ab, 15, 17, 19, 21 2.3: 2, 5, 13, 14ab
9/12:	2.4: Differentiability 2.5: Limit definition of the derivative	HW: 1, 3, 15 – 18 HW: 1, 3, 4, 5
9/13:	2.6: slope graphs; 3.1: Deriv. Rules Powers and Logs (See packet)	HW: 2.6: 2, 3, 6 Packet Algebra Review probs 1 – 5
9/17:	3.2: More Deriv. Rules QUIZ 2	HW: 3.1: 1 – 27 (odd), 29abc
9/19:	3.1; 3.2 continued	HW: 3.2: 1 – 14
9/20:	3.3: chain rule	HW: 3.3: 9, 10, 14
9/24:	QUIZ 3 PROJECT PART A DUE 3.4: Chain rule (cont'd)	HW: 3.4: 1 – 28
9/25:	Last day to drop a course without receiving a “W” grade	
9/26:	3.5: product rule	HW: 1, 4, 11, 12, 13, 16, 19
9/27:	3.6: product rule (cont'd)	HW: 1 – 17 (odd)
10/1:	Using nDeriv on the TI-84 (word problems) Word Problems (3.1, 3.2)	HW: 3.1: 31ab, 35, 36. 3.2: 21, 28 Packet Compound Interest probs 1, 2
10/3:	Word problems (3.3-3.6)	HW: 3.4: 34, 38, 42
10/4:	QUIZ 4	HW: 3.6: 21abc, 22, 23
10/8:	Columbus Day – No classes	
10/10:	4.1: Approximating change $f(x+h) - f(x) \approx f'(x)h$ 4.5: Marginal Revenue, Marginal Cost, Marginal Profit PROJECT PART B DUE	HW: 4.1: 2, 5, 7 HW: 4.5: 1, 3, 5, 7, 9, 11, 16ab, 17abc Packet Algebra Review probs 6 – 12

10/11: 4.2: Optimization Critical points Relative and absolute extreme points First Derivative Test	HW: 4.2: 1,3,5, 9, 11, 13, 15, 21, 23 HW: 4.4: 11, 13, 15
10/15: Second derivative and concavity Second Derivative Test Notes on Optimization (class packet) 4.4: Inflection Points; Point of diminishing returns	Packet Optimization problems 1-18 HW: 4.4 1, 2, 19
10/17: Midterm Review	
10/18: MIDTERM	
10/22: 4.3: Optimization using the calculator Finding inf. pts. with the TI-84	HW: 17 (like project optimization), 20 HW: 4.4: 30, 31 (see packet notes)
10/24: Antiderivatives PROJECT PART C DUE	Packet Anti-derivative problems 1-5
10/25: 5.4: The general antiderivative QUIZ 5	HW: 5.4: 11-15, 18, 25, 29
10/29: Hurricane Sandy – No class	
10/31: 5.5: Antiderivative formulas Finding a specific anti-derivative	HW: 5.5: 1, 3, 6 HW: 5.4: 19 – 21, 23a Packet Additional Anti-derivative probs 6-12
11/1: Area under a curve Area approximation by rectangles	HW: 5.2: 8 Packet Area Approximation problem 3
11/5: QUIZ 6	
11/7: The definite integral (p336) Accumulated Change Properties of the definite integral (Packet Notes)	HW: 5.1: 7, 8; 5.2: 4; 5.3: 5b
11/8: Fundamental Thm of Calculus (p375) PROJECT PART D DUE	Packet probs on Properties of def. ints: 1 – 4 Packet Additional Definite integral probs 1 – 7 HW: 5.6: 9
11/12: Veteran's Day – No classes	
11/14: Using fnInt on the TI-84 5.6: Setting up, interpreting def. ints QUIZ 7	Packet Additional Definite integral problem 8 HW: 14, 16
11/15: 5.8: Average value of a function Average value of the rate of change	HW: 1, 3, 5

11/19: **QUIZ 8**

PROJECT REVISED PART D DUE

11/20: Last day to drop a course with a “W” grade

11/21, 11/22: Thanksgiving – **No Classes**

11/26: Differentials

Integration by u -substitution

Packet Integration by substitution probs: 1 – 6

11/28: 5.9: Integration by u -substitution

HW: 1, 3, 5, 8, 11, 15, 20

Packet Integration by substitution probs: 7 – 19

11/29: **PROJECT PRESENTATIONS**

12/3: 6.3: Consumers’ Surplus (see packet)

HW: 6.3: 11, 12, 23abd (use $p_{\max} = \$555$)

QUIZ 9

12/5: Review for final exam

Student evaluations

12/6: Reading Day