

**MATH U130 Fall 07 - College Mathematics for Business and Economics -
MWTh 1:35 PM – 2:40 PM RY 157**

Prof. Marina Ville, Nightingale 540, ext. 5530 villemarina@yahoo.fr

Office hours: M 10:00-11:00, W 10:00-12:00 and by appointment

TEXT: Calculus Concepts, Latorre, Kenelly, Fetta Reed, Harris and Carpenter, Houghton Mifflin Company, Boston, New York, 2005..

CLASS PACKET: Math U130.

HOW TO SUCCEED. In order to succeed in this class, you have to **work seriously and consistently** throughout the semester. After the lectures on a topic, you must read the corresponding section of the book and try to work the examples by yourself. Doing the **homework** carefully is really important: in order to master the material, it is not enough to follow the lecture but you need to practice (a lot) by doing problems.

HOW TO GET HELP. If you do not understand something, **do not wait for the next quiz or exam to get help.**

Never be afraid to ask a question during the lecture: by pointing out something which is not clear for you, you are actually helping the other students and the lecturer.

I am **always willing to meet with students** outside of class. You can come to my office hours (see above) or make an appointment by email (to speed up this process, email me with a phone number where I can reach you to set up a time to meet).

Finally the University offers **free tutoring** in the Mathematics Tutorial Center, 540B Nightingale (x2328). All tutoring is done on a first come first served basis. Students must come in person to schedule appointments. Tutoring begins about September 13. Usual hours:

MTuWed 9:15 AM-8PM, Thurs 9:15 AM-4PM, Fri 9:15 AM-12:45 PM.

See http://www.math.neu.edu/undergrad/math_tutoring.html for more information

OUTLINE OF THE COURSE.

Content. Mathematics can model business and economics problems. We begin with generalities about modelling and discuss how to go back and forth between a business/economics situation and its mathematical model. Then we focus on some specific models: linear, exponential, quadratic and logistic. In particular, we learn how to find the best model which fits a particular set of data.

We will not only learn mathematics but touch upon various economics concepts such as fixed costs, supply and demand etc.

Graphing Calculator: Throughout this course we make extensive use of the graphing calculator: only basic knowledge is assumed at the beginning of the semester and we learn more sophisticated functions of the calculator as we go along. So you will need a TI-82, TI-83, TI-85, or TI-86.

Where MTHU130 stands in relation with the other math courses. MTHU130 is a prerequisite for MTHU 131 (Calculus for Business and Economics), but it cannot be used to satisfy the mathematics proficiency requirement of the College of Arts and Science.

CLASS BEHAVIOR. Cell phones, portable computers, etc must be off while in class. Noise is not tolerated.

HOMEWORK: I will assign problems regularly from the Text and from the Class Packet, either in class or on Blackboard; it is the student's responsibility to keep him/herself informed. I will collect it weekly, grade one of the problems and mark it done/not done.

EXAMS: There will be frequent short **quizzes** which will always be announced the week before. If you miss a quiz, you will get a 0 for that quiz, unless you have a **valid documented** excuse; in that case you will be allowed to take a make-up quiz.

There will be one **midterm** in class on **10/31**.

The **final exam** is on **Thursday 12/13** at 10:30 AM and lasts two hours. **Contact the Registrar in first 2 weeks of class if you have a conflict or 3 finals in one day.**

PROJECT. It is a modelling project studying the financial history of a corporation. It is described in the last three pages of the Class Packet. **Please read them** carefully. This project has three parts, labelled J, K and L, due on the following dates:

part J due on **10/04**

part K due on **10/25**

part L due on **11/15**

GRADING. Quizzes and Homework: 30%, Midterm: 15%, Project 15% Final exam: 40%.

INCOMPLETE GRADE: requires a written understanding (contract) between the Instructor and student with details about what material will be made up and how. Incompletes are normally appropriate only for a student who is doing well, but becomes ill, or has a family emergency late in the semester.

ATTENDANCE POLICY. Your regular attendance is expected, and it is your responsibility to know assignments and all information given (including changes to the syllabus), even when you are absent. Repeated absences without a valid excuse will lower your final grade.

ALGEBRA CHALLENGE PROBLEMS. Some students may want to work on their algebra skills, either because they enjoy it or because they plan to take more advanced math classes afterwards. I strongly encourage these students and I will put on Blackboard (under *Course Material*) practice sheets in algebra and pre-calculus. Students can do the problems at their own rhythm and I will be available to discuss these problems outside of class.

If you have a ISSUE: first you talk with me; if we cannot resolve it, you go to the course coordinator, Prof. Donald R. King (d.king@neu.edu, 526 Nightingale, x5679). If it is still unresolved, ask Prof. Alex Martsinkovsky, Undergraduate Director (alexmart@neu.edu, Mathematics x447 Lake, Phone 5679).

ACADEMIC HONESTY: It is fine to work together doing homework (studies have shown that this can be particularly helpful in learning math), provided such assistance is acknowledged specifically in any work passed in, and that you understand what you pass in.

Collaboration on quizzes and exams is not allowed. The Student Code of Conduct (see <http://155.33.32.224/judicialaffairs/code.html>) or **Student Handbook** says.

" Essential to the mission of Northeastern University is the commitment to the principles of intellectual honesty and integrity. Academic integrity is important for two reasons. First, independent and original scholarship ensures that students derive the most from their educational experience and the pursuit of knowledge. Second, academic dishonesty violates the most fundamental values of an intellectual community and depreciates the achievements of the entire University community. Accordingly, Northeastern University views academic dishonesty as one of the most serious offenses that a student can commit while in college."

In Math U130, academic dishonesty on a quiz or exam, or assignment leads to a zero on the quiz or exam or assignment, that cannot be made up, as well as a letter detailing the incident to the Office of Student Conduct and Conflict Resolution. The minimum penalty for a finding of academic dishonesty by the student Judicial Hearing Board includes one year disciplinary probation.

WEEK-BY-WEEK OUTLINE (subject to change).

T. refers to the sections in the textbook; CP refers to the class packet

Sept. 5-6.

T. 1.1 Generalities on functions and models; costs, profits and revenues, CP. 1-6

Sept. 10-16

T.1.4 Linear models

T.1.1 (cont'd). CP. 6-12

Sept.17-23

T. 1.2. Constructed functions: sums and products

Sept. 24-30

T. 2.1. Exponential models

Oct. 1-7

Calculator skill: 2^{nd} /Calc/Intersect CP. 43

Calculator skill: fitting data into a linear or an exponential model, CP. 13-17, 21

Oct. 8-14

10/08: Columbus Day, no classes

T. 2.2 Logarithmic functions and models; solving exponential equations CP. 18-20.

Oct. 15-21

T.2.3 The logistic model, CP.22

T. 2.1 Percentages, growth rate; compound interest CP. 23-30.

Oct. 22-28

Continuation of T.2.3 and T. 2.1..

How to solve quadratic equations, CP. 31-34

Oct. 29-Nov. 4

T. 2.4 Polynomial functions and models, CP. 36-39

Midterm on 10/31

Nov. 5-Nov. 11

T. 7.3. Supply and demand; logistic regression; equilibrium prices CP. 52-56

Calculator skill: TVM solver

Nov. 12-Nov. 18

11/12: Veterans' Day, no classes

Cost, revenue and profit, CP. 41-51

Nov. 19-Nov. 25

CP. 56-60

11/21-11/25: Thanksgivings' break, no classes

Nov 26-Dec. 2

CP. 61-75

Dec.3-Dec. 9

T. 3.1, 3.2, 3.3 (survey) Average rate of change, instantaneous rate of change, derivatives

12/05 Last day of classes