

Mathematics for Economics and Business
Hallym University, Fall 2013

I. Course Information

This course is designed for the students in Economics or Business Major. It covers basic and intermediate mathematical concepts required in acquiring intermediate and advanced knowledge in various topics in Economics and Business. The topics include graphics, equations, limit, differentiation, integration, and optimization problems.

Prerequisites: Pre-Calculus/ Basic Calculus

Class Meets 16:00-17:50 on Mondays and 14:00-14:50 on Wednesdays @ **14504**

II. Instructor's Information

Changik Jo, Ph.D. (web.hallym.ac.kr/~cxj183)

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Office Hours: 14:00 – 15:50 M, 09:00-11:30 T, 13:00-13:50 W, 10:00-11:50 Th
and by appointment

III. Course Purpose, Goals, and Learning Objectives

Need to learn basic and advanced concepts of calculus.
Need to acquire the sophisticated knowledge of mathematics.
Need to learn how to apply theories to the real business situations.

IV. Method of Assessing Goals

Students are expected to attend all the sessions, read the textbook before and after the session, take good class note, and take all the exams. See sections V, VI, VII and XI for further information.

V. Grading Policies and Procedures

2 Midterms (25% each), Final (30%)

Homework Assignments (15%), Attendance and Class Participation (5%)

MAKEUP EXAMS WILL NOT BE GIVEN FOR ANY REASONS EXCEPT THE FOLLOWING REASONS.

1) serious illness; 2) illness or death of family member; 3) university-related trips.

It is the student's responsibility to inform me of the absence preferably in advance, or as soon as reasonably possible. The burden of proof is on the student to provide sufficient documentation regarding the nature of absence, and I retain the right to ask for such proof.

VI. Tentative Schedule and Content Outline

Week	Dates	Topics	Comment
0	Sep. 02-Sep. 04	Course Introduction A beginning Library of Basic Functions - Functions/ Graphs and Transformations	
1	Sep. 09-Sep. 11	Linear Equations and Applications - Linear Demand and Supply - Finding Equilibrium - Simultaneous Equations	
2	Sep. 16-Sep. 18	Quadratic Functions - Finding the roots - Factorization - Economic Applications (Cost Functions, Revenue/Profit)	
3	Sep. 23-Sep. 25	Polynomial Functions/ Power Functions - Drawing diagrams - Polynomial division for factorization	
4	Sep. 30-Oct. 02	Rational Functions Exponential Functions and Applications	
5	Oct. 07-Oct. 09	Midterm Exam 1	
6	Oct.14-Oct.16	Logarithmic Functions	
7	Oct. 21-Oct. 23	Differentiation Methods - Rate of Change - Limit Concept/ Continuity - Tangent Formula with Derivative	
8	Oct. 28-Oct.30	Applications of Functions - Power Rule and Basic Differentiation Properties - Derivatives of Products and Quotients	
9	Nov. 04-Nov. 06	Applications of Functions (Con't) - General Power Rule (Chain Rule) - marginal Analysis in Business and Economics	
10	Nov. 11-Nov.13	Maxima and Minima Economic/ Business Applications	
11	Nov. 18-Nov. 20	Midterm Exam 2	
12	Nov. 25-Nov. 27	Advanced Calculus Using - Exponential Functions - Logarithmic Functions	

13	Dec. 02-Dec. 04	Mathematics of Finance - Simple and Compound Interests - Net Present Value and Internal Rate of Return - Returns of Debt Instruments - Sequence and Series	
14	Dec. 09-Dec. 11	Integration	
15	<i>Dec 16 (Mon)</i>	<i>FINAL EXAM</i>	

Note: There will be two make-up sessions before final exam week.

VII. Method of Instruction

The session will mainly be a lecture style even class participation is always welcome. The course grade will partly reflect the class participation. Therefore, the students are expected to be well prepared.

IX. Textbooks and Supplementary Readings

Required Reading: TBA

Recommended Readings:

Any Textbooks titled mathematics for management, business, and economics.

X. Computer and Information Technology Usage

If necessary, I will distribute articles, class materials, and sample questions (problem sets) **only via my web page** (web.hallym.ac.kr/~cxj183). And students are required to provide the instructor with their **most frequently used email addresses**.

In order to download the course materials in PDF format, you need to download Acrobat Reader version 4.0 or higher (it's free!) at www.adobe.com.

XI. Course Policies

1. Prompt and regular attendance is expected and required.
The attendance will be checked at every session. You are all adults who can decide whether you wish to attend class or not. However, I am also not required to repeat material from previous lecture or give you private lectures on materials you choose to miss. You are responsible for obtaining lecture notes from a classmate.
And if you miss more than 4 times, I will terminate your status from the course with F.
2. Class participation is strongly recommended.
3. Since the majority of the material is presented through the lectures, it is key that the classroom be a place of respect for fellow students. To this end, I expect you to turn off cell phones prior to the start of lecture, that you not engage in distracting conversation, that you not read newspapers or other material during the lectures, and so on.
4. Any belated homework assignments will not be accepted.
5. Academic dishonesty will be dealt with in accordance with the University policy as described in the Hallym University Student Handbook.

XII. Learning Facilities Available

The Hallym University Library
The Computer Labs

XIII. How to do well in this class

Mathematics and statistics are both understood so abstract and hard to understand.

It is therefore very important that you

- **understand that this class is *not* a memorization course!** I want you to be able to *understand* and to *apply* these economic tools, yet you cannot achieve this by sheer memorization but *only through practice*.
- **spend enough time on this class!** I do hope you can spend *at least 9 hours outside of class*.
- **come to class regularly, and keep up with the readings!** All of the topics in this course are closely related to each other, and we will always rely on the material that we have covered early in the semester. If you missed classes without making up the missed work, you will get lost later on. The material is too complex to understand during the day and night just before the exam.
- **read the assigned readings *before* class and read them again after class; don't rely solely on your note.**
- **ask questions *in class* if you don't understand something!** There are *NO* stupid questions. Don't be intimidated to speak up in class. Your questions are necessary feedback for me to see if I am too fast or too slow.
- **come and talk to me if you begin to feel lost!**

Tell me, I'll forget. Show me, I may remember. Involve me, I'll understand
-Chinese Proverb-