



جامعة دبي
UNIVERSITY of DUBAI

General Education Department

Course Syllabus
Semester: Spring 2009/2010

Course code & No.: GMAT 110
Course Title: Math I for Business
Prerequisites: Intensive mathematics, 400 or above UD Placement Test
Class Hours: Time: 12:00-3:00 Days: Th Room: 212

Brief Course Description:

This course focuses on: Coordinate Systems and Graphs, Linear equations and their Business Applications, Linear System, Two Variables Systems of Linear Equations, Gauss-Jordan Elimination, Matrix Algebra, Mathematical Functions and their Applications, Break-Even Analysis, Exponential and Logarithmic Functions and their Business Applications.

General Education Program Outcomes:

Apply basic analytical and IT skills.

Students will develop skills in the following areas:

1. Critical thinking
2. Abstract thinking and adapt
3. Ability to be a continuous learner and trainer of others.
4. Quantitative skills.

Course Learning Outcomes (CLO):

By the end of the course the students will be able to:

- Describe basic concepts of functions and their graphs including transformation of functions.
- Analyze and graph quadratic functions, solve quadratic applications including maximum/minimum problems.
- Recognize and define exponential and logarithmic functions; solve problems involving exponential and logarithmic functions, including compound and continuous interest, exponential growth and decay.
- Solve systems of linear equations using Gauss-Jordan elimination and using matrices.

CLO Mapping

CLO	General Skills	State below PO
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Describe basic concepts of functions and their graphs including transformation of functions.	1,2,3,and 4	Apply basic and analytic IT Skills.
Analyze and graph quadratic functions, solve quadratic applications including maximum/minimum problems.	1,2,3,and 4	Apply basic and analytic IT Skills.
Recognize and define exponential and logarithmic functions; solve problems involving exponential and logarithmic functions, including compound and continuous interest, exponential growth and decay. .	1,2,3,and 4	Apply basic and analytic IT Skills.
Solve systems of linear equations using Gauss-Jordan elimination and using matrices.	1,2,3,and 4	Apply basic and analytic IT Skills.

Assessment Scheme

This Table maps CLO to the assessment scheme.

CLO	Class Work (40%)		Mid-term Exam 22 / 04/ 2010 25%	Final Exam 14 / 06 / 2010 From 10:00 to12:00 pm 35%
	Individual Assignment 20%	Two quizzes 20%		
#1	5 marks	5 marks	12 marks	6 marks
#2	5 marks	5 marks	13 marks	7 marks
#3	5 marks	5 marks		12 marks
#4	5 marks	5 marks		10 marks
Total	20	20	25	35

Teaching Methods

The course should be delivered using lectures, recommended textbook, class work, and tutorial

Weekly Schedule

Math for Business I Weekly/Daily Teaching Plan

Day/Week	Lecture	Chp.	Chapter Objectives	Relation to CLO	Assignment	Assessment
1	Graphs and lines	1	<ul style="list-style-type: none"> • Introduce coordinate systems that allow us to explore the relationship between algebraic and geometry. • To graph linear equations by plotting points. • To find the slope of a line from its graph and from its equation. 	1	Exercises Page: 25, and 26	Quiz 1, Mid-Term, Final Exam
2	Applications and Review	1	<ul style="list-style-type: none"> • To find total cost, revenue, and profits. • To evaluate a linear total cost, total revenue, and profit functions. 	1	Exercises Page: 27	
3	Functions and Graphs	2	<ul style="list-style-type: none"> • To enable the students to understand the nature and notation of mathematical functions. • To discuss the graphical representation of functions. • To evaluate and graph supply and demand functions. 	1, and 2	Exercises Page: 59, and 60	Quiz 1, Mid-Term, Final Exam
4	Graphs and Transformation	2	<ul style="list-style-type: none"> • To evaluate, define and graphs the basic elementary functions. • Define the Vertical and Horizontal Shifts. • Define Reflections, Stretches, and Shrinks. 	1, and 2	Exercises Page: 73	Quiz 1, Mid-Term, Final Exam
5	Quadratic Functions and Graphs	2	<ul style="list-style-type: none"> • Apply and define Quadratic Functions, Properties of Quadratic Functions and Their Graphs . 	2	Exercises Page: 90	Quiz 2, Mid-Term, Final Exam
6	Quadratic Functions and Graphs	2	<ul style="list-style-type: none"> • To provide more specifically, an understanding of the algebraic and graphical characteristics & quadratic and polynomial functions 	2	Exercises Page: 91	Quiz 2, Mid-Term, Final Exam
7	Exponential Functions	2	<ul style="list-style-type: none"> • To discuss the nature of exponential functions: their structural characteristics and graphical behavior. 	3	Exercises Page: 102	Quiz 2, Final Exam
8	Exponential Functions	2	<ul style="list-style-type: none"> • To simplify expressions involving exponential terms. • To evaluate expressions involving exponential terms. • Solve Exponential equations. 	3	Exercises Page:103, and 104	Quiz 3, Final Exam
9	Logarithmic Functions	2	<ul style="list-style-type: none"> • To discuss the nature of logarithms and the equivalence between exponential and logarithmic form. • Solve Logarithmic equations. 	3	Exercises Page: 116, and 117	Quiz 3, Final Exam
10	Mathematics of Finance	3	<ul style="list-style-type: none"> • To find the compound amount and compound interest of money invested where interest is compound at regular intervals. 	3	Exercises Page 132, and 146	
11	Matrices	4	•	4	Exercise Page 220-221	Quiz 4, Final Exam
12	System of Linear Equations	4	<ul style="list-style-type: none"> • Review of systems of linear equations in two variables. • Solving system of linear equations by substitution. • Solving the system of linear equation by elimination method. 	4	Exercises Page: 185, and 186	Quiz 4, Final Exam
13	System of Linear Equations & Augmented Matrices	4	<ul style="list-style-type: none"> • Provide an understanding of the nature of a matrix and matrix representation of data. • Provide an understanding of the algebra of matrices. • To solve set of linear equations using augmented matrices 	4	Exercises Page: 196, and 197	Quiz 4, Final Exam
14	Gauss-Jordan Elimination	4	<ul style="list-style-type: none"> • Define the reduced form of a matrix • Solve set of linear equation using Gauss-Jordan elimination. 	4	Page 208	Final Exam
15	Gauss-Jordan Elimination and Matrices; Some definitions and Basic Operations	4	<ul style="list-style-type: none"> • Solve set of linear equation using Gauss-Jordan elimination. • Present some definitions and basic operations like addition and subtraction. • Define unit matrix; transpose matrix 	4	Exercises Page: 208, and 220, and 221	Final Exam

Educational Resource	Description	Comments
Textbooks Required	Barnett, Raymond A., Ziegler, Michael R., and Byleen, Karl E., <i>College Mathematics for Business, Economics, Life Sciences, and Social Sciences</i> , Prentice-Hall, Inc., 2008.	
Supporting readings:	<ul style="list-style-type: none"> <li data-bbox="480 338 1235 398">(1) Harshbarger, Ronald, Reynolds, James J., <i>Mathematical Applications for Management, Life, and Social Sciences</i>, D. C. Heath and Company. <li data-bbox="480 398 1235 456">(2) Budnick, Frank S., <i>Applied Mathematics for Business, Economics, and the Social Sciences</i>, McGraw-Hill, Company, New York. 	