Syllabus

Course Name	Business Mathematics I
Catalog Number	MATH 1324
Section	103
Semester	Fall 2011
Time	MWF 8:30–9:20
Place	PH 115
Professor	Dr. David Milovich
Email	david.milovich@tamiu.edu
Phone	(956) 326-2570
Office	Canseco Hall, 313C
Office hours	MWF 9:30–11:30; other times by appointment
Department	Engineering, Mathematics, and Physics

Course description. Systems of linear equations and matrices; linear programming; mathematics of finance; limits, continuity, derivatives. Prerequisite: One or more of an ACT Mathematics score of 25 or above, an SAT Mathematics score of 600 or above, a COMPASS score of College Algebra 35 or Algebra 81 or above, or MATH 1314.

Student learning outcomes. Upon successful completion of this course, the student will be able to:

- set up and solve problems involving simple and compound interest, as well as future and present value of an annuity;
- solve systems of linear equations using the Gauss-Jordan elimination method;
- set up and solve problems in linear programming; that is, use graphical methods, as well as the simplex method (including the dual method) to maximize linear objective functions. Students will also be able to solve linear optimization problems with mixed constrains;
- apply basic concepts from Calculus, such as limit, continuity and the physical and geometrical interpretation of Derivatives to solve problems in Business and Economics;
- set up and solve problems that use derivative techniques such as the product, quotient and chain rule.

Textbook. *College Mathematics for Business, Economics, Life Sciences, and Social Sciences.* 12th Edition. Raymond A. Barnett, Michael R. Ziegler and Karl E. Byleen. Pearson. ISBN: 0-321-64545-6

Homework. For every hour you spend in class, you should expect to spend two to three additional hours on this course. Some of those hours will be spent

on homework; some on studying. Each class day (except close to test days), I will assign a few exercises. My intent is for each assignment to be short enough that the average student can complete it in less than two hours.

Homework will be graded for completeness (not for correctness). Not later than the day after I assign exercises, I will email my solutions to the class. However, you should try to produce your own solutions before looking at mine! Remember, you're on your own at test time. Practice solving problems on your own.

You must personally turn in your solutions (on paper) at the beginning of the next class day. *Homework will not be accepted more than 10 minutes after class starts.*

Attendance. You are expected to attend class. When you turn in your homework at the beginning of class, there will be an attendance sheet you must sign. You won't receive credit for that homework if you don't sign the attendance sheet. *You are counted absent if you are more than 10 minutes late.*

Tests. See the schedule of topics below for the test dates. Bring a calculator and one double-sided sheet of notes to each test. Test problems will be similar to homework problems. After the first test, later tests (including the final exam) will emphasize material covered since the previous test. However, the final exam will include some problems about earlier material.

Make-ups. There are no make-ups for missed work, except by situations covered by university rules.

Grading. Final letter grade, given a final score of x%:

A	$x \geq 90$
B	$80 \leq x < 90$
C	$70 \leq x < 80$
D	$60 \leq x < 70$
F	$x < 60$

Grading components:

Homework	20%
Exam I	15%
Exam II	15%
Exam III	20%
Final Exam	30%

Calculators. A graphing calculator is required, both for tests and for daily classroom participation. I recommend (but do not require) a TI-89 because that way you and I will be using the same calculator.

Lecture notes. I present most information using hand-written notes under a document camera and sometimes also using a computer for spreadsheets, graphs, and some interactive computations. I will send these notes and spreadsheets to the class electronically (ANGEL). I will also include the graphs, unless many graphs were interactively created in class, in which case I will just include a few of the graphs. Therefore, I recommend against trying to copy all my writing while you're in class. In fact, I'd advise taking no notes at all during class. Focus on understanding what I'm saying and doing. If you must take notes, then focus on recording what I say but don't write down.

Classroom expectations. Bring your calculator, book, paper, and pen/pencil. I'm not just going to talk for 50 minutes. I will ask the class questions, and sometimes I will ask you to do a short computation. Pay attention to what I say, not just what I write.

I encourage questions. Just ask; you don't need to raise your hand. However, if you do not have a question, then do not interfere with your fellow students' learning. Do not talk to other students while I am talking. Do not let your phone/laptop/etc. distract your neighbors.

Approximate Schedule of Topics

Date	Day	Topic
26-Aug	F	syllabus; exponential functions
29-Aug	M	logarithms
31-Aug	W	simple interest
2-Sep	F	compound interest
5-Sep	M	APR and APY
7-Sep	W	income streams: future value
9-Sep	F	income streams: future value
12-Sep	M	present value
14-Sep	W	present value
16-Sep	F	Exam I
19-Sep	M	systems of two linear equations
21-Sep	W	2x3 augmented matrices
23-Sep	F	2x3 augmented matrices
26-Sep	M	Gauss-Jordan
28-Sep	W	Gauss-Jordan
30-Sep	F	Gauss-Jordan
3-Oct	M	Exam II
5-Oct	W	systems of linear inequalities
7-Oct	F	systems of linear inequalities
10-Oct	M	geometric 2D linear programming
12-Oct	W	geometric 2D linear programming
14-Oct	F	simplex method: introduction
17-Oct	M	simplex method: maximization (video lecture)
19-Oct	W	simplex method: maximization (video lecture)
21-Oct	F	(fall break)
24-Oct	M	simplex method: maximization
26-Oct	W	simplex method: the dual method
28-Oct	F	simplex method: the dual method
31-Oct	M	simplex method: mixed constraints
2-Nov	W	simplex method: mixed constraints
4-Nov	F	Exam III
7-Nov	M	limits
9-Nov	W	continuity
11-Nov	F	derivatives: approximating small changes
14-Nov	M	product rule
16-Nov	W	derivatives of polynomials
18-Nov	F	derivates as slopes
21-Nov	M	quotient rule
23-Nov	W	(Thanksgiving break)
25-Nov	F	(Thanksgiving break)
28-Nov	M	derivative of exponentials, logarithms
30-Nov	W	chain rule
2-Dec	F	related rates
5-Dec	M	related rates
9-Dec	F	Final Exam, 8AM

Policies of the College of Arts and Sciences

(Required on all COAS Syllabi)

Classroom Behavior

The College of Arts and Sciences encourages classroom discussion and academic debate as an essential intellectual activity. It is essential that students learn to express and defend their beliefs, but it is also essential that they learn to listen and respond respectfully to others whose beliefs they may not share. The College will always tolerate diverse, unorthodox, and unpopular points of view, but it will not tolerate condescending or insulting remarks. When students verbally abuse or ridicule and intimidate others whose views they do not agree with, they subvert the free exchange of ideas that should characterize a university classroom. If their actions are deemed by the professor to be disruptive, they will be subject to appropriate disciplinary action, which may include being involuntarily withdrawn from the class.

Plagiarism and Cheating

Plagiarism is the presentation of someone else's work as your own. **1)** When you borrow someone else's facts, ideas, or opinions and put them entirely in your own words, you must acknowledge that these thoughts are not your own by immediately citing the source in your paper. Failure to do this is plagiarism. **2)** When you also borrow someone else's words (short phrases, clauses, or sentences), you must enclose the copied words in quotation marks as well as citing the source. Failure to do this is plagiarism. **3)** When you present someone else's paper or exam (stolen, borrowed, or bought) as your own, you have committed a clearly intentional form of intellectual theft and have put your academic future in jeopardy. This is the worst form of plagiarism.

Here is another explanation from the 2010, sixth edition of the *Manual of The American Psychological Association* (APA):

> *Plagiarism:* Researchers do not claim the words and ideas of another as their own; they give credit where credit is due. Quotations marks should be used to indicate the exact words of another. *Each* time you paraphrase another author (i.e., summarize a passage or rearrange the order of a sentence and change some of the words), you need to credit the source in the text.
>
> The key element of this principle is that authors do not present the work of another as if it were their own words. This can extend to ideas as well as written words. If authors model a study after one done by someone else, the originating author should be given credit. If the rationale for a study was suggested in the Discussion section of someone else's article, the person should be given credit. Given the free exchange of ideas, which is very important for the health of intellectual discourse, authors may not know where an idea for a study originated. If authors do know, however, they should acknowledge the source; this includes personal communications. (pp. 15-16)

Consult the Writing Center or a recommended guide to documentation and research such as the *Manual of the APA* or the *MLA Handbook for Writers of Research Papers* for guidance on proper documentation. If you still have doubts concerning proper documentation, seek advice from your instructor prior to submitting a final draft.

Penalties for Plagiarism: Should a faculty member discover that a student has committed plagiarism, the student should receive a grade of 'F' in that course and the matter will be referred to the Honor Council for possible disciplinary action. The faculty member, however, may elect to give freshmen and sophomore students a "zero" for the assignment and to allow them to revise the assignment up to a grade of "F" (50%) if they believe that the student plagiarized out of ignorance or carelessness and not out of an attempt to deceive in order to earn an unmerited grade. This option should not be available to juniors, seniors, or graduate students, who cannot reasonably claim ignorance of documentation rules as an excuse.

Caution: Be very careful what you upload to Turnitin or send to your professor for evaluation. Whatever you upload for evaluation will be considered your final, approved draft. If it is plagiarized, you will be held responsible. The excuse that "it was only a draft" will not be accepted.

Caution: Also, do not share your electronic files with others. If you do, you are responsible for the possible consequences. If another student takes your file of a paper and changes the name to his or her name and submits it and you also submit the paper, we will hold both of you responsible for plagiarism. It is impossible for us to know with certainty who wrote the paper and who stole it. And, of course, we cannot know if there was collusion between you and the other student in the matter.

Penalties for Cheating: Should a faculty member discover a student cheating on an exam or quiz or other class project, the student should receive a "zero" for the assignment and not be allowed to make the assignment up. The incident should be reported to the chair of the department and to the Honor Council. If the cheating is extensive, however, or if the assignment constitutes a major grade for the course (e.g., a final exam), or if the student has cheated in the past, the student should receive an "F" in the course, and the matter should be referred to the Honor Council. Under no circumstances should a student who deserves an "F" in the course be allowed to withdraw from the course with a "W."

Student Right of Appeal: Faculty will notify students immediately via the student's TAMIU e-mail account that they have submitted plagiarized work. Students have the right to appeal a faculty member's charge of academic dishonesty by notifying the TAMIU Honor Council of their intent to appeal as long as the notification of appeal comes within 5 business days of the faculty member's e-mail message to the student. The *Student Handbook* provides details

UConnect, TAMIU E-Mail, and Dusty Alert

Personal Announcements sent to students through TAMIU's UConnect Portal and TAMIU E-mail are the official means of communicating course and university business with students and faculty – not the U.S. Mail and not other e-mail addresses. Students and faculty must check UConnect and their TAMIU e-mail accounts regularly, if not daily. Not having seen an important TAMIU e-mail or UConnect message from a faculty member, chair, or dean is not accepted as an excuse for failure to take important action. Students, faculty, and staff are encouraged to sign-up for *Dusty Alert* (see www.tamiu.edu). *Dusty Alert* is an instant cell phone text-messaging system allowing the university to communicate immediately with you if there is an on-campus emergency, something of immediate danger to you, or a campus closing.

Copyright Restrictions

The Copyright Act of 1976 grants to copyright owners the exclusive right to reproduce their works and distribute copies of their work. Works that receive copyright protection include published works such as a textbook. Copying a textbook without permission from the owner of the copyright may constitute copyright infringement. Civil and criminal penalties may be assessed for copyright infringement. Civil penalties include damages up to $100,000; criminal penalties include a fine up to $250,000 and imprisonment.

Students with Disabilities

Texas A&M International University seeks to provide reasonable accommodations for all qualified persons with disabilities. This University will adhere to all applicable federal, state, and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal education opportunity. It is the student's responsibility to register with the Director of Student Counseling and to contact the faculty member in a timely fashion to arrange for suitable accommodations.

Incompletes

Students who are unable to complete a course should withdraw from the course before the final date for withdrawal and receive a "W." To qualify for an "incomplete" and thus have the opportunity to complete the course at a later date, a student must meet the following criteria:

1. The student must have completed 90% of the course work assigned before the final date for withdrawing from a course with a "W", and the student must be passing the course;
2. The student cannot complete the course because an accident, an illness, or a traumatic personal or family event occurred after the final date for withdrawal from a course;
3. The student must sign an "Incomplete Grade Contract" and secure signatures of approval from the professor and the college dean.
4. The student must agree to complete the missing course work before the end of the next long semester; failure to meet this deadline will cause the "I" to automatically be converted to a "F"; extensions to this deadline may be granted by the dean of the college.

This is the general policy regarding the circumstances under which an "incomplete" may be granted, but under exceptional circumstances, a student may receive an incomplete who does not meet all of the criteria above if the faculty member, department chair, and dean recommend it.

Student Responsibility for Dropping a Course

It is the responsibility of the STUDENT to drop the course before the final date for withdrawal from a course. Faculty members, in fact, may not drop a student from a course without getting the approval of their department chair and dean.

Independent Study Course

Independent Study (IS) courses are offered only under exceptional circumstances. Required courses intended to build academic skills may not be taken as IS (e.g., clinical supervision and internships). No student will take more than one IS course per semester. Moreover, IS courses are limited to seniors and graduate students. Summer IS course must continue through both summer sessions.

Grade Changes & Appeals

Faculty are authorized to change final grades only when they have committed a computational error or an error in recording a grade, and they must receive the approval of their department chairs and the dean to change the grade. As part of that approval, they must attach a detailed explanation of the reason for the mistake. Only in rare cases would another reason be entertained as legitimate for a grade change. A student who is unhappy with his or her grade on an assignment must discuss the situation with the faculty member teaching the course. If students believe that they have been graded unfairly, they have the right to appeal the grade using a grade appeal process in the *Student Handbook* and the *Faculty Handbook*.

Final Examination

Final Examination must be comprehensive and must contain a written component. The written component should comprise at least 20% of the final exam grade. Exceptions to this policy must receive the approval of the department chair and the dean at the beginning of the semester.