

# Math for Business and Economics

## MATH 1324-42017

### Syllabus

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Meeting time: TTH 10:35am-11:50am  
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## 1 The Course

### 1.1 Course Description

A course in finite mathematics for business students including sets, basic algebraic properties, linear equations and inequalities, functions and graphs, the exponential and logarithmic functions, the mathematics of finance, systems of linear equations and matrices, linear inequalities and linear programming, the simplex method, and an introduction to probability. Prerequisites: MATD 0390 or satisfactory score on the ACC Assessment Test. Credit can be earned for only one of MATH 1324 or BUA 2103. (MTH 1643)

### 1.2 Course Rationale

This course is required in certain degree plans, such as Accounting, Computer Information Systems and Economics. For some students, this is the first half of a two-semester finite mathematics/business calculus sequence. This is also a preparation course prior to taking two semesters of business calculus, although the preferred preparation for two semesters of business calculus is MATH 1314. Finally, some students take this course as a general mathematics elective.

### 1.3 Course Objectives

Mathematics for Business and Economics has five main mathematical topics: functions, matrices, linear programming, probability and statistics. The objectives of the course are for students not only to know the mathematics of these concepts, but also to be able to apply the concepts to analyze and interpret information in business and financial application problems.

1. Identify the basic graphs and properties of polynomial, rational, exponential, and logarithmic functions. Apply the knowledge of functions to business applications such as simple, compound or continuous compound interest, ordinary annuities, finding the maximum or minimum for quantities which are quadratic functions, and finding break even points.
2. Perform basic operations with matrices, and use matrix methods to solve systems of linear equations. Apply the knowledge of matrices to business problems such as inventory, production, and total cost.
3. Use geometric method to solve linear programming problems. Interpret information as an objective function with constraints, set up the linear programming problem, solve the problem and interpret the result in the context of the problem.
4. Use basic counting techniques and calculate probabilities, including conditional probabilities. Apply the mathematical knowledge of probability to business problems and interpret the results.
5. Calculate measures of central tendency and measures of dispersion. Apply the mathematical skills to problems in various business settings and interpret the results.

## 2 Textbooks

*Finite Mathematics*, 11th Edition, by Barnett, Ziegler, and Byleen (Prentice Hall)

isbn:0132255707

This textbook is required. Homework problems will be assigned from it and students are expected to read sections on their own.

## 3 Instructional Methodology

This course is a lecture based course so attendance is highly recommended. The lectures will follow the assigned readings but will involve a significant amount of extra material and discussion, i.e. the textbook is necessary but

not sufficient. Students are encouraged to take notes during class and to ask questions.

## 4 Note to Students

A steady pace must be maintained throughout the semester in order to complete all required topics in a thorough manner. Students experiencing a great deal of difficulty in Sections 1.2 and 2.1 through 2.3 should review (on their own) Appendices A or should consider taking MATD 0390 (Intermediate Algebra) before returning to this course. Students who discover difficulty during the first class of the semester should consider changing their registration during late registration to MATD 0390. Students who remain in the course but need additional assistance should consider registering for the supplemental lab course (MATH 0161). Students also have access to walk-in tutoring at the Learning Lab.

## 5 Grading

The course grade will be based on three exams, and a homework journal. The distribution will be

Mid-term Exams	25%
Final Exam	25%
Homework Journal	25%

### 5.1 Exams

There will be two mid-term exams and a final exam on the last day of class. They will be taken during class time. The nature of the material is cumulative; concepts presented early in the course are foundational and become important later on. The exams will be problems which will be highly correlated to those assigned as homework.

### 5.2 Exam Corrections

Students may submit exam corrections within one week of getting their exam back in order to earn up to 50% of their lost points back onto their exam. This means an exam score of 50 can be brought up to a 75 with exam corrections.

### **5.3 Homework Journal**

Homework will be assigned throughout the semester. Students will keep this homework together in the homework journal which will be submitted on the day of every exam.

### **5.4 Blackboard**

Blackboard (<http://acconline.austincc.edu>) is an on-line classroom management tool. It includes a grade book, a discussion board, ways to communicate between students and between students and professor.

Instructions on how to log into this course's Blackboard site can be found at

<http://itdl.austincc.edu/blackboard/stlogin.htm>.

If you have not created your new ACC Username or Password through ACCeID Manager, then please go to this link:

<https://acceid.austincc.edu/idm/user/login.jsp>. Do not fill in your Username and Password on this page, since you do not have either yet. DO CLICK on First-Time Login. Your ACCeID will be the first letter of your legal, given, first name and your seven digit ACC ID number. For example, fictional student Adam Smith might have this Username a0067701. Once you submit this Username, just follow the instructions. Once you have done this, please make sure that your correct email address is listed on Blackboard. If it is not, please follow the instructions on this course's Announcement page of Blackboard.

I will use Blackboard to post grades, announcements, and homework assignments.

## **6 Policies**

### **6.1 Attendance**

Attendance is required in this course. Students who miss more than 4 classes may be withdrawn.

## **6.2 Missed Exams**

There are two types of missed exam situations:

1. (Advance Notice) If a student will miss an exam and gives advance notice I will place an exam in the testing center for the student to take. The exam may or may not be the same exam that will be given at the scheduled time in class.
2. (Non-advance Notice) If a student misses an exam and can provide documentation, e.g. doctor's note etc., that the absence was due to a legitimate and unavoidable dilemma, an exam will be placed in the testing center for the student to take. The exam may or may not be the same exam that will be given at the scheduled time in class.

## **6.3 Late Work**

No late work will be accepted.

## **6.4 Reinstatement Policy**

In order to be reinstated, the student must demonstrate that he is caught up with the required work as of the date on which he wishes to be reinstated. This must be done before the official last date to withdraw for the semester.

## **6.5 Withdrawals**

It is the student's responsibility to initiate all withdrawals in this course. The instructor may withdraw students for excessive absences (4) but makes no commitment to do this for the student. After the withdrawal date, neither the student nor the instructor may initiate a withdrawal.

## **6.6 Incomplete Grade Policy**

Incomplete grades (I) will be given only in very rare circumstances. Generally, to receive a grade of "I", a student must have taken all examinations, be passing, and after the last date to withdraw, have a

personal tragedy occur which prevents course completion.

## **6.7 Scholastic Dishonesty**

Acts prohibited by the college for which discipline may be administered include scholastic dishonesty, including but not limited to, cheating on an exam or quiz, plagiarizing, and unauthorized collaboration with another in preparing outside work. Academic work submitted by students shall be the result of their thought, work, research or self-expression. Academic work is defined as, but not limited to, tests, quizzes, whether taken electronically or on paper; projects, either individual or group; classroom presentations; and homework.

Students who violate the rules concerning scholastic dishonesty will be assessed an academic penalty that the instructor determines is in keeping with the seriousness of the offense. This academic penalty may range from a grade penalty on the particular assignment to an overall grade penalty in the course, including possibly an F in the course. ACC's policy can be found in the Student Handbook under Policies and Procedures or on the web at: <http://www.austincc.edu/handbook>

## **6.8 Student Discipline**

Classroom behavior should support and enhance learning. Behavior that disrupts the learning process will be dealt with appropriately, which may include having the student leave class for the rest of that day. In serious cases, disruptive behavior may lead to a student being withdrawn from the class. ACC's policy on student discipline can be found in the Student Handbook under Policies and Procedures or on the web at: <http://www.austincc.edu/handbook>

## **6.9 Students with Disabilities**

Each ACC campus offers support services for students with documented physical or psychological disabilities. Students with disabilities must request reasonable accommodations through the Office of Students with Disabilities on the campus where they expect to take

the majority of their classes. Students are encouraged to do this three weeks before the start of the semester. Students who are requesting accommodation must provide the instructor with a letter of accommodation from the Office of Students with Disabilities (OSD) at the beginning of the semester. Accommodations can only be made after the instructor receives the letter of accommodation from OSD.

## 6.10 Academic Freedom

Institutions of higher education are conducted for the common good. The common good depends upon a search for truth and upon free expression. In this course the professor and students shall strive to protect free inquiry and the open exchange of facts, ideas, and opinions. Students are free to take exception to views offered in this course and to reserve judgment about debatable issues. Grades will not be affected by personal views. With this freedom comes the responsibility of civility and a respect for a diversity of ideas and opinions. This means that students must take turns speaking, listen to others speak without interruption, and refrain from name-calling or other personal attacks.

## 7 Course Outline

The tentative schedule is as follows giving a rough and incomplete description of the topic and the chapter in the textbook corresponding to the topic.

Topic	Chapter
Elementary Functions	1&2
Mathematics of Finance	3
Matrices	4
Linear Programming	5
Simplex Method	6
Counting	7
Probability	8
Data & Distributions	11