# Welcome to MATH 1324/MATD 0424 – Business Math Express

**A co-requisite combination of MATH 1324 Mathematics for Business and Economics and MATD 0424 Developmental Business Math**

**Semester Syllabus**

**Delete these instructions after following them**: Instructors must make the following customizations:

- Change all highlighted text and remove highlights. Text highlighted in yellow should be customized; text highlighted in green is instructions that should be followed and then deleted.
- It is impossible to arrange the vertical spacing correctly on the master syllabus, as each instructor will be adding and deleting items. Consider starting each of the Level 1 Headings (The Basics, Course Calendar, Getting Help, Grades, Course Content, and The Details) at the top of a new page.
- In order to make the document accessible to screen readers, the master syllabus uses styles for text. The 6 styles in use are Title, Subtitle, Heading 1, Heading 2, Normal, and hyperlink. If you would like to customize these styles with different fonts or formatting, please do so using Styles. Right click on the style you want to change and choose Modify.
- Please do not add tables without following accessibility procedures. Previous syllabi that contained critical information on the first page without a table do not meet accessibility requirements.

## THE BASICS

### About Your Instructors

**Name:** Insert info here

**The best way to reach me is**: Insert info here

**Phone number:** Insert info here

**Email:** Insert info here

**Office location (and/or link if appropriate):** Insert info here

**Office hours:** Insert info here

**To schedule a conference outside of office hours**: Insert info here

**Name:** Insert info here

**The best way to reach me is**: Insert info here

**Phone number:** Insert info here

**Email:** Insert info here

**Office location (and/or link if appropriate):** Insert info here

**Office hours:** Insert info here

**To schedule a conference outside of office hours**: Insert info here

## About Your Course

**Instructional Methodology**: **Delete these instructions after following them**: Choose the correct option and **delete the other options**

Classroom Section: This course is taught in the classroom primarily as a lecture/discussion course.

DLS—Synchronous Virtual Class Meetings Required: Instruction is fully online with required online meetings during the specified days and times listed.

ONL—Online: Instruction and testing are fully online without required class times.

HYC—Hybrid Classroom: Instruction is mostly on-campus with remaining instruction online.

**Synonym:** Insert info here **Section:** Insert info here

**Meeting location**: Insert info here **Meeting times:** Insert info here

**Prerequisites:** NCBM 0270 with a C or higher. Or appropriate score on math TSI Assessment test. Corequisite(s): MATH 1324

**Paired Course Policy:** This is a paired course. Students who withdraw from MATD 0424 will automatically be withdrawn from MATH 1324.

## Required Materials

This is a First Day™ class. The cost of required course materials, including an online version of the textbook and software access, has been added to your tuition and fees bill.

**Textbooks*:***

*Finite Mathematics for Business, Economics, Life Sciences, and Social Sciences*, 14th Edition by Barnett, Ziegler, Byleen, & Stocker. Pearson Publishing (MyLab software) ISBN: 9780134862576

*Intermediate Algebra*, OpenStax publication by Lynn Marecek at Santa Ana College. Available free for download as pdf. See your instructor's Blackboard course for a link.

MyLab Math is an optional interactive online course that accompanies the Math for Business and Economics textbook. There is no MyLab Math course to accompany the Intermediate Algebra textbook. Access to MyLab Math is included in the cost of your First Day Access.

**Calculator:** You will need a scientific calculator that handles exponents, logarithms and simple probability and statistics. Most ACC faculty are familiar with the TI family of calculators. Hence, TI calculators are highly recommended for student use. Other calculator brands can also be used. Your instructor will determine the extent of calculator use in your class section.

**Other Technology: Delete these instructions after following them**: Delete webcam info if it does not apply; add any other needed technology. Access to a webcam and microphone are required for this course. Eligible students can check out required technology at https://www.austincc.edu/students/student-technology-services.

## Course Calendar

**Delete these instructions after following them**: This is the recommended 16-week calendar from the course committee. See the document "Suggested Course Calendars" for other options and customize this chart as appropriate.

**Note: Schedule changes may occur during the semester. Any changes will be announced in class and posted as a Blackboard Announcement.**

| | |
|---|---|
| **Week 1** | Marecek Ch. 1 Foundations<br>Marecek 2.1 General Strategies to Solve Linear Equations<br>Marecek 2.2 Use a Problem-Solving Strategy/B3.1 Simple Interest<br>Marecek 2.5/2.6 Solve Linear and Compound Inequalities |
| **Week 2** | Marecek 5.2 Properties of Exponents<br>Marecek 8.1 - 8.3 Simplify Expressions with Roots/Rational Exponents<br>Review<br>**Test 1** |
| **Week 3** | Barnett 1.2A Graphs and Lines<br>Barnett 1.2B Graphs and Lines<br>Marecek 5.1/ 5.3 Multiply, Add and Subtract Polynomials<br>Barnett 2.1A Functions |
| **Week 4** | Barnett 2.1B Functions Cont'd<br>Barnett 2.2 Elementary Functions and Piecewise Functions<br>Review<br>**Test 2** |
| **Week 5** | Marecek 6.1/6.3 GCF and Factor by Grouping/Difference of Squares<br>Marecek 6.2 Factor Trinomials<br>Marecek 6.4 Factoring Strategy<br>Marecek 6.5 Polynomial Equations (Solve by factoring) |
| **Week 6** | Marecek 9.1/9.3 Square Root Property/Quadratic Formula<br>Flex Day<br>Review<br>**Test 3** |
| **Week 7** | Barnett 2.3A Quadratic Functions<br>Barnett 2.3B Quadratic Functions<br>Barnett 2.4A Polynomial Functions<br>Marecek 7.1 Multiply, Divide Rational Expressions |
| **Week 8** | Marecek 7.2/7.4 Add and Subtract Rational Expressions and Rational Equations<br>Flex Day<br>Review<br>**Test 4** |

| | |
|---|---|
| **Week 9** | Barnett 2.4B Rational Functions<br>Barnett 2.5 Exponential Functions<br>Barnett 2.6 Logarithmic Functions<br>Flex Day |
| **Week 10** | Barnett 3.2 Compound Interest<br>Flex Day<br>Review<br>**Test 5** |
| **Week 11** | Barnett 3.3 Future Value<br>Barnett 3.4 Present Value of Annuities<br>Barnett 4.1 Systems of Linear Equations in Two Variables<br>Barnett 4.4 Basic Operations |
| **Week 12** | Barnett 4.5 Inverse of a Square Matrix<br>Barnett 4.6 Matrix Equations and Systems of Linear Equations<br>Review<br>**Test 6** |
| **Week 13** | Barnett 5.1 Linear Inequalities in Two Variables<br>Barnett 5.2 Systems of Linear Inequalities<br>Barnett 5.3 Linear Programming<br>Barnett 7.2/7.3 Sets and Basic Counting Principles |
| **Week 14** | Barnett 7.4 Permutations and Combinations<br>Flex Day<br>Review<br>**Test 7** |
| **Week 15** | Barnett 8.1 Sample Spaces, Events and Probability<br>Barnett 8.2 Union, Intersection and Complement of Events, Odds<br>Barnett 8.3 Conditional Probability, Intersection<br>Barnett 8.5 Random Variable, Probability Distribution and Expected Value |
| **Week 16** | Review<br>**Final Exam (Test 8)** (2 parts given over 2 days) |

## Important Dates

**Last day to withdraw:** Insert date here
**Holidays:** Insert ACC holidays for current semester

(Please note these are the **ONLY** holidays this semester.)

### Making Time to Learn

We learn math by thinking about and working on mathematical problems, which takes time. Practice is crucial in a math course. To ensure that you have adequate time, set aside 8-12 hours per week outside of class time to practice and study for this course. Ask for help immediately when something isn't clear.

## Getting Help

ACC provides several free resources for students who need help; descriptions and links are below:

**Office hours:** Another name for office hours is "student hours." This is the time your instructor has set aside to answer student questions, so feel free to drop by if you have questions. Office hours may be virtual or on campus; see information above.

**Instructional Associates:** Instructional Associates specific to the course you are taking are available for tutoring. To make an appointment, go to https://sites.google.com/a/austincc.edu/math-students/meet/list and then click on your course.

**Learning Labs:** The ACC Learning Labs provide tutoring in math and other subjects. To schedule an appointment, go to https://www.austincc.edu/students/learning-lab. This site includes information about in person and virtual tutoring options.

**Academic Coaching:** Academic coaches offer extra support to students with study strategies; they want to help you learn to be an active participant in your own learning process. For more information or to make an appointment with an academic coach, go to https://www.austincc.edu/students/academic-coaching.

**ACC Student Services**: Services are offered in many areas, including Academic, Financial, Personal, and Technology Support. For more information, go to https://www.austincc.edu/student-support.

## Grades

**Delete these instructions after following them**: Grading criteria must be clearly explained in the syllabus. The criteria should specify the number of exams and other graded material (homework, assignments, projects, etc.). **Instructors must include where students can access their grades.** Instructors should discuss the format and administration of exams. Guidelines for other graded materials, such as homework or projects, should also be included in the syllabus. An example is given below; you should modify it to fit your course.

### Grade Components

**Tests:** 80%

**Daily Assignments:** 20%

### Grading Scale

**A:** 90 - 100

**B**: 80 – 89

**C:** 70 – 79

**D:** 60 – 69

**F:** < 60

## Where can I find my grades?

Grades will be posted in Blackboard.

## MATD 0424 and MATH 1324 Grades

Students receive the same grade for both MATD 0424 and MATH 1324, with the following exceptions:

The overall average for both MATH 1324 and MATD 0424 will default to the above grading policy. However, a student will receive a different grade in MATD 0424 based on the alternate grading criteria outlined below.

**0424 Alternate Grading**

- If a student's grade average on Tests 1 - 4 is higher than the overall grade average, the instructor will assign the letter grade based on Tests 1 - 4 for MATD 0424 only.

or

- If a student passes Part 1 of Test 8, the instructor will assign a letter grade of C in MATD 0424 only.

A grade of C or higher in MATD 0424 is sufficient for a student to be declared TSI complete (college ready) in math and satisfies the prerequisite for Math for Business and Economics (MATH 1324). That means that a student who earns a C in MATD 0424 but does not successfully complete MATH 1324 may register for MATH 1324 the next semester without a co-requisite.

## What will we do in this class?

**Tests:** **Delete these instructions after following them**: Instructors may use this or insert their own.)

There will be 8 exams, each of which will count equally towards your grade. The dates of the exams are noted on the schedule. Most tests will be administered in class, however, occasionally some tests may be administered in the testing center due to calendar changes.

**Daily Assignments:** **Delete these instructions after following them**: Instructors may use the sample below or insert their own.)

**Written Homework Assignments**: Written homework will be assigned daily in the form of worksheets. Here is the process to follow with written homework:

1. Complete the listed textbook problems on a separate sheet of paper and check your answers. It is important to get this feedback before going on to the problems printed on the worksheet for which there are no answers provided.
2. Complete the printed problems directly on the worksheet. Try to come up with a way of checking your answers without having solutions provided.
3. Staple the textbook problems to the worksheet before turning in to be graded.

Written homework is graded by completion and correctness. In order to get a perfect score, you must show all your work, following an appropriate process, and get a correct answer. If you are uncertain about your answers, it is worth seeking help before turning in the assignment.

**Other Daily Assignments:** Occasionally there may also be other daily assignments such as quizzes and group activities. It is important that you be present in class in order to participate and complete these assignments.

**Group work:** Insert info here

## What happens if I miss something?

**Dropped Grade Policy:** Insert info here

**Late Work Policy:** Insert info here

**Missed Exam Policy**: Insert info here

**Attendance Policy**: Daily attendance is mandatory. This corequisite option covers material from three courses, and involves group activities on a daily basis. Your partners depend on you for group work, and your own success in the course depends on your full commitment.

There is no such thing as an "excused absence". The end result of missing a class is the same regardless of the reason. You miss instruction. Your partners are let down. You miss an opportunity to turn in homework. The goal is to minimize these disruptions, and to take personal responsibility to make up for any missed class on your own time.

**Expectations:** **Delete these instructions after following them**: Instructors may remove this or insert their own.)

1. Attend all sessions
2. Arrive on time to the virtual session and stay for the duration of the session
3. Participate during that time and spend time outside of class working on homework
4. Make use of the raise your hand tool when in a large Blackboard Collaborate session so we are not all speaking at once.
5. Keep chat (whether via text or microphone) appropriate and course focused.

**Class Participation Policy:** Insert info here

# Course Content

## Course Description

**Credit Hours:** 7, **Contact Hours:** 7

**MATH 1324 Mathematics for Business and Economics (3-3-0).** A course in finite mathematics for business students including linear equations and inequalities, functions and graphs, the exponential and logarithmic functions, the mathematics of finance, systems of linear equations and matrices, linear programming, and an introduction to probability.

**MATD 0424 – Developmental Business Math (4-4-0).** A course designed to develop the skills and understanding contained in secondary school algebra. Topics include review of operations and properties of real numbers, negative exponents, functions, graphing linear equations, solving linear and quadratic equations and systems of linear equations, solving linear inequalities, operations on polynomials and factoring, introduction to rational, radical, and exponential functions, and applications with a business focus.

## 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.

## MATH 1324 Course Objectives

Mathematics for Business and Economics has four main mathematical topics: Linear functions and systems of linear equations and inequalities, counting and probability, functions and algebra review, and finance with the requisite exponentials and logs. 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.

## MATH 1324 Student Learning Outcomes

Upon successful completion of the course, a student should be able to:

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 methods 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.

## MATD 0424 Course Objectives/Student Learning Outcomes

Upon successful completion of this course a student will be able to:

1. Perform operations involving integers, fractions, decimals, radicals, percents, signed exponents, ratios and proportions.
2. Evaluate and perform basic operations on functions, find the domain and range of functions, and solve equations involving functions.
3. Identify slope and intercepts from linear equations and graphs of lines. Find linear equations from given points and graphs of lines.
4. Graph linear equations and inequalities, including systems of each, as well as absolute value and quadratic functions.
5. Simplify, factor, and perform basic operations on algebraic expressions, including polynomials and rationals.
6. Solve linear, quadratic and rational equations by symbolic methods and solve linear inequalities.
7. Solve basic application problems using linear and quadratic models, finance formulas, and 2x2 systems of linear equations.
8. Use mathematical language, symbols, and notation to communicate mathematical concepts, demonstrate reasoning, and solve problems.

## General Education Competencies

1. Critical Thinking – gathering, analyzing, synthesizing, evaluating and applying information is covered in every SLO.
2. Quantitative and Empirical Reasoning – applying mathematical, logical, and scientific principles and methods is covered in every SLO.
3. Written, Oral and Visual Communication – communicating effectively adapting to purpose, structure, audience and medium is covered in every SLO.

# The Details

**[Delete these instructions after following them: Remove the following two paragraphs if your class is not online]**

**Distance Education Information:** This class is fully online. Successful online students actively participate in class on a regular basis just like in an on-campus class and avoid putting off classwork until the last minute. This includes reading assignments, taking quizzes and tests, and any other activities assigned by your professor. You will need to stay motivated and routinely log in to your classes in order to keep on top of your assignments.

Students will use the Blackboard learning management system for assignment instructions, submitting assignments, and collaboration. Students are encouraged to read ACC Distance Education General Information available at https://online.austincc.edu/faq/.

**First Day Access:** To enhance your learning experience and provide affordable access to the right course material, this course is part of an inclusive access model called First Day™. You can easily access the required materials for this course through Blackboard, at a discounted price, and benefit from single sign-on access. Austin Community College includes the discounted price as a course fee in your registration fees for this course.

It is NOT recommended that you Opt Out, as these materials are required to complete the course. You can choose to Opt Out on the first day of class, but you will be responsible for purchasing your course materials at the full retail price and access to your materials may be suspended. See your course in Blackboard for details.

**Importance of Completing Developmental Course Requirements:** The first steps to achieving any college academic goal are completing developmental course requirements and TSI requirements. The first priority for students who are required to take developmental courses must be the developmental courses. TSI rules state that students are allowed to take college credit courses, if they are fulfilling their developmental requirements. Because successful completion of developmental courses is so important, ACC will intervene with any student who is not successfully completing developmental requirements. This intervention can mean a hold on records, requiring developmental lab classes, working with the Instructional Associate, and monitoring during the semester.

**Withdrawal Policy:** It is the responsibility of each student to ensure that his or her name is removed from the roll should he or she decide to withdraw from the class. The instructor does, however, reserve the right to drop a student should he or she feel it is necessary. If a student decides to withdraw, he or she should also verify that the withdrawal is submitted before the Final Withdrawal Date. The student is also strongly encouraged to retain their copy of the withdrawal form for their records.

Students who enroll for the third or subsequent time in a course taken since Fall 2002 may be charged a higher tuition rate for that course. State law permits students to withdraw from no more than six courses during their entire undergraduate career at Texas public colleges or universities. With certain exceptions, all course withdrawals automatically count towards this limit. Details regarding this policy can be found in the ACC college catalog.

**Reinstatement Policy:** Students who withdrew or were withdrawn will not be reinstated unless they have completed all coursework, projects, and exams necessary to place them at the same level of course completion as the rest of the class. Reinstatement is up to the instructor's approval.

**Incomplete Grade Policy:** Incomplete grades (I) will be given only in very rare circumstances. Generally, to receive a grade of "I", a student must be up to date on coursework and have a passing grade, and after the last date to withdraw, have a legitimate reason that prevents course completion. An incomplete grade cannot be carried beyond the established date in the following semester. The completion date is determined by the instructor but may not be later than the final deadline for withdrawal in the subsequent semester.

**Communication with Your Instructor:** All e-mail communication to students will be sent solely to the student's ACCmail account or math software if applicable, with the expectation that such communications will be read in a timely fashion. Likewise, students should use their ACCmail account or math software when communicating with instructors. Instructors will respond to student emails within 3 business days, if no response has been received by the student at the end of that time, then the student should send a reminder to the instructor.

**Name Change Information**: If you want to change how your name appears online at ACC, go to https://www.austincc.edu/admissions/update-student-information/chosen-name.

**General College Policies**: Policies that apply to all courses at ACC can be found here: https://www.austincc.edu/offices/academic-outcomes-assessment/master-syllabi/college-policies.