



**Division of Mathematics
Mathematics Department**

<https://learning.hccs.edu/programs/mathematics>

**Math 1324: Math for Business and Social Sciences | Lecture |
#14198**

Spring 2020 | 16 Weeks (1.21.2020-05.17.2020)

In-Person | Scarcella Center Rm W113 | Tu-Th 11:00 a.m.-12:20 p.m.

3 Credit Hours | 48 hours per semester

Instructor Contact Information

Instructor: Mini Mathew

Office: LHub Building, Room 303.3

HCC Email: mini.mathew@hccs.edu

Office Phone: 713-718-5572

Office Hours: Tu-Th 12:30 p.m.-2:30 p.m.

Office Location: SW College Math Dept.

Please feel free to contact me concerning any problems that you are experiencing in this course. Your performance in my class is very important to me. I am available to hear the concerns and just to discuss course topics.

Instructor's Preferred Method of Contact

By HCC Email address: mini.mathew@hccs.edu

I will respond to emails within 24 hours Monday through Friday; I will reply to weekend messages on Monday mornings.

What's Exciting About This Course

In this course you will practice the skills and techniques to tackle rigorous problems and gain the practice and experience to do so comfortably.

My Personal Welcome

Welcome to Math 1324 course. I am looking forward to a happy and productive semester. I'm delighted that you have chosen this course!

As you read and wrestle with new ideas and facts that may challenge you, I am available to support you. The fastest way to reach me is by my HCC email.

Prerequisites and/or Co-Requisites

Prerequisites: A grade of C or better in Math 0310 or its equivalent or an acceptable placement score. A grade of C or better in Math 0314 its equivalent or an acceptable placement score.

Co-Requisites: MATH 0324 is a co-requisite to MATH 1324. Since MATH 0324 is co-requisite with MATH 1324, withdrawing from either MATH 0324 or Math 1324 will necessitate withdrawal from the other as well. Please carefully read and consider the repeater policy in the [HCCS Student Handbook](#).

Canvas Learning Management System

This section of MATH 1324 will use [Canvas](https://eagleonline.hccs.edu) (<https://eagleonline.hccs.edu>) to supplement in-class assignments, exams, and activities. All the exam and Homework grades will be posted in Canvas.

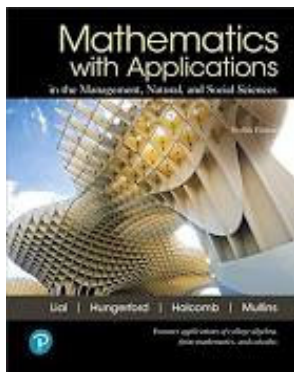
HCCS Open Lab locations may be used to access the Internet and Canvas. **USE [FIREFOX](#) OR [CHROME](#) AS THE INTERNET BROWSER.**

Scoring Rubrics, Sample Assignments, etc.

Look in Canvas for the scoring rubrics for assignments, samples of class assignments, and other information to assist you in the course. <https://eagleonline.hccs.edu/login/ldap>

Instructional Materials

Textbook Information



The textbook listed below is **required** for this course.

Mathematics with Applications In the Management, Natural, and Social Sciences; 12th ed.; By Margaret Lial, Thomas Hungerford, John Holcomb, Jr., Bernadette Mullins. Pearson. ISBN-13: 978-0135335215

It is included in a package that contains the text as well as an access code and are found at the [HCC Bookstore](#). You may either use a hard copy of the book or the e-book through MyMathLab.

Other Instructional Resources

Tutoring

HCC provides free, confidential, and convenient academic support, including writing critiques, to HCC students in an online environment and on campus. Tutoring is provided by HCC personnel in order to ensure that it is contextual and appropriate. Visit the [HCC Tutoring Services](#) website for services provided.

Libraries

The HCC Library System consists of 9 libraries and 6 Electronic Resource Centers (ERCs) that are inviting places to study and collaborate on projects. Librarians are available both at the libraries and online to show you how to locate and use the resources you need. The libraries maintain a large selection of electronic resources as well as collections of books, magazines, newspapers, and audiovisual materials. The portal to all libraries' resources and services is the HCCS library web page at <http://library.hccs.edu>.

Supplementary Instruction

Supplemental Instruction is an academic enrichment and support program that uses peer-assisted study sessions to improve student retention and success in historically difficult courses. Peer Support is provided by students who have already succeeded in completion of the specified course, and who earned a grade of A or B. Find details at <http://www.hccs.edu/resources-for/current-students/supplemental-instruction/>.

Course Overview

This course is intended for students majoring in liberal arts and secondary education. Topics included are: the application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences are addressed. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value.

Core Curriculum Objectives (CCOs)

Given the rapid evolution of necessary knowledge and skills and the need to take into account global, national, state, and local cultures, the core curriculum must ensure that students will develop the essential knowledge and skills they need to be successful in college, in a career, in their communities, and in life. Through the Texas Core Curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world, develop principles of personal and social responsibility for living in a diverse world, and advance intellectual and practical skills that are essential for all learning.

- **Critical Thinking:** to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
- **Communication Skills:** to include effective development, interpretation and expression of ideas through written, oral and visual communication.
- **Quantitative and Empirical Literacy:** to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

Program Student Learning Outcomes (PSLOs)

Students in the Mathematics Program will:

1. Engage in problem solving strategies, such as organizing information, drawing diagrams and modeling.
2. Use symbolic representations to solve problems. This includes manipulating formulas, solving equations, and graphing lines.
3. Build the foundational mathematical skills that will enable a student to successfully complete a college level mathematics course.

Course Student Learning Outcomes (CSLOs)

Upon completion of MATH 1324, the student will be able to:

1. Apply elementary functions, including linear, quadratic, polynomial, rational, logarithmic, and exponential functions to solving real-world problems.
2. Solve mathematics of finance problems, including the computation of interest, annuities, and amortization of loans.
3. Apply basic matrix operations, including linear programming methods, to solve application problems.
4. Demonstrate fundamental probability techniques and application of those techniques, including expected value, to solve problems.
5. Apply matrix skills and probability analyses to model applications to solve real-world problems.

Learning Objectives

Upon completion of MATH 1324, the student will be able to:

1. Be able to graph systems of linear equations in two variables.
2. Be able to solve systems of linear equations using Gauss-Jordan elimination.
3. Be able to add, subtract, and multiply matrices.
4. Be able to find the inverse of a square matrix.
5. Find simple and compound interest.
6. Find the future value of a given annuity.
7. Find the monthly payment and the total interest for a given simple interest amortized loan.
8. Be able to graph systems of linear inequalities in two variables.
9. Use the graphical method for solving a linear programming problem.
10. Use the simplex method for solving standard maximization and standard minimization problems.
11. Be able to perform the basic set operations.
12. Be able to use the multiplication principle, permutations and combinations in counting arguments.
13. Calculate basic probabilities using classical methods.
14. Calculate conditional probabilities.
15. Use expected values in real-world applications.
16. Use the binomial distribution to model and analyze probability experiments.

Student Success

Expect to spend at least twice as many hours per week outside of class as you do in class studying the course content. Additional time will be required for written assignments. The assignments provided will help you use your study hours wisely. Successful completion of this course requires a combination of the following:

- Reading the textbook
- Attending class in person and/or online
- Completing assignments
- Participating in class activities

There is no short cut for success in this course; it requires reading (and probably re-reading) and studying the material using the course objectives as a guide.

Instructor and Student Responsibilities

As your Instructor, it is my responsibility to:

- Provide the grading scale and detailed grading formula explaining how student grades are to be derived
- Facilitate an effective learning environment through learner-centered instructional techniques
- Provide a description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness, and making up assignments
- Provide the course outline and class calendar that will include a description of any special projects or assignments
- Arrange to meet with individual students before and after class as required

As a student, it is your responsibility to:

- Attend class in person and/or online
- Participate actively by reviewing course material, interacting with classmates, and responding promptly in your communication with me
- Read and comprehend the textbook
- Complete the required assignments and exams
- Ask for help when there is a question or problem
- Keep copies of all paperwork, including this syllabus, handouts, and all assignments
- Be aware of and comply with academic honesty policies in the [HCCS Student Handbook](#)

Assignments, Exams, and Activities

Exams

There will be 5 exams including a final departmental exam.

However one exam grade (excluding the final) will be dropped. In other words you may take only three exams and the final.

Home work

Homework (and Quizzes):

Homework (and Exams):

This class uses My Math lab for reviewing course-related materials and completing online exercises. This third party Learning Management System (LMS) has been integrated into Eagle Online Canvas. The first time you attempt to log on to, Mathlab, you will be required to register. After you complete your registration, you will be able to log into the course homework system directly from Eagle Online Canvas. You will be able to see your homework (and exam) grades from the Eagle Online Canvas Grade Book.

Final Exam

All students will be required to take a cumulative Final exam.

Final Exam Review Sessions: HCC MATH DAYS

The Math Department will offer several Final Exam Review sessions (i.e., **HCC Math Days**) for this course near the end of the semester (Fall and Spring semesters only). We encourage you to attend at least one of these sessions as you prepare for the comprehensive Final Exam. Your professor will provide you with more information regarding HCC Math Days locations and session times later in this semester.

While the full-time Math Department faculty leading these review sessions are prepared to answer students' questions on a variety of course topics, the **Final Exam Study Guide** will provide the basis for the HCC Math Days sessions. Therefore, to get the most out of these review sessions, be sure review and to work through the **Final Exam Study Guide** before you attend the review session(s). Please ask your professor if you have any questions regarding these sessions. Finally, the Math 1324 **Final Exam Study Guide** and the **dates** for the Math Days review sessions are located at:

<https://cofinite.com/MathDays/Math1324.php>

Grading Formula

Final course grade will be the average of highest 3 exams (will drop one of the lowest exam grade out of 4 exams), Homework and Final exam as shown in the following formula.

$$\frac{(\text{Highest 3 Exams} + \text{H.W} + 2 * \text{Final})}{6} = \text{Course Grade}$$

(Final will be counted twice)

Eagle Online Canvas: Your grades and some documents for the class will be available in Eagle Online Canvas. You should check the site a few times each week.

- The Eagle Online Canvas site is <http://eagleonline.hccs.edu>
- Your login is your HCC email user name including @hccs.edu
- Your password is your HCC email password
- For problems using or accessing Canvas, visit the Technical Support Webpage at <https://www.hccs.edu/online/technical-support/>, call at [713.718.5275](tel:713.718.5275) or email hcc.online@hccs.edu

Test Schedule:

<i>Test</i>	<i>Sections Covered on Test</i>	<i>Exam dates</i>
Exam 1	Chapter 5	Tuesday, February 11
Exam 2	Chapters 8 & 9	Thursday, March 12
Exam 3	Chapter 6, Sections; 2.1, 2.2 7.1, 7.2, 7.3	Tuesday, April 14
Exam 4	Sections: 7.4, 7.5, 3.4, 3.6, 4.1, 4.3, 4.4	Tuesday, May 5

Final Exam	<i>Comprehensive(all sections)</i>	Tuesday, May 12, 11:00am –12:50pm
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Grade	Overall Percentage
A	90% +
B	80%-89%
C	70%- 79%
D	60%-69%
F	<60%

Incomplete Policy:

In order to receive a grade of Incomplete ("I"), a student must have completed at least 85% of the work in the course. In all cases, the instructor reserves the right to decline a student's request to receive a grade of Incomplete.

HCC Grading Scale can be found on this site under Academic Information:
<http://www.hccs.edu/resources-for/current-students/student-handbook/>

Course Calendar

APPROXIMATE TIME

TEXT REFERENCE

UNIT I Mathematics of Finance (5.5 hours)

1 hour	5.1 Simple Interest and Discount
1 hour	5.2 Compound Interest
1.5 hours	5.3 Annuities, Future Value, and Sinking Funds
2 hours	5.4 Annuities, Present Value, and Amortization

UNIT II Sets and Probability (5.5 hours)

1 hour	8.1 Sets
	8.2 Applications of Venn Diagrams and Contingency Tables (Optional)
1.5 hours	8.3 Introduction to Probability
1.5 hours	8.4 Basic Concepts of Probability
2 hours	8.5 Conditional Probability and Independent Events

UNIT III Counting, Probability Distributions, and Further Topics in Probability (5.5 hours)

1.5 hours	9.1 Probability Distributions and Expected Value
1.5 hours	9.2 The Multiplication Principle, Permutations, and Combinations
1.5 hours	9.3 Applications of Counting
1.5 hours	9.4 Binomial Probability

UNIT IV Review (2 hours)

1 hour	2.1 Graphs
1 hour	2.2 Equations of Lines

UNIT V Systems of Linear Equations (7 hours)

1.5 hours	6.1 Systems of Two Linear Equations in Two Variables
2 hours	6.2 Larger Systems of Linear Equations
2 hours	6.3 Applications of Systems of Linear Equations
1 hour	6.4 Basic Matrix Operations
1.5 hours	6.5 Matrix Products and Inverses

UNIT VI Linear Programming (8 hours)

1 hour	7.1 Graphing Linear Inequalities in Two Variables
1.5 hours	7.2 Linear Programming: The Graphical Method
2 hours	7.3 Applications of Linear Programming
2 hours	7.4 The Simplex Method: Maximization
2 hours	7.5 Maximization Applications

UNIT VII Nonlinear Functions (10 hours)

2 hours	3.4 Quadratic Functions and Applications
2 hours	3.6 Rational Functions
2.5 hours	4.1 Exponential Functions
2.5 hours	4.3 Logarithmic Functions
3 hours	4.4 Logarithmic and Exponential Equations

Syllabus Modifications

The instructor reserves the right to modify the syllabus at any time during the semester and will promptly notify students in writing, typically by e-mail, of any such changes.

Instructor's Practices and Procedures

Missed Assignments

There is no makeup exam.

Academic Integrity

All forms of academic dishonesty including, but not limited to cheating, plagiarism, and collusion are serious offenses. Possible consequences for academic dishonesty include a grade a 0 or F in the particular assignment, failure in the course, and/or recommendations for probation or dismissal from the institution.

Here's the link to the HCC information about academic integrity (Scholastic Dishonesty and Violation of Academic Scholastic Dishonesty and Grievance):

<http://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-procedures/>

Attendance Procedures

It is important that you come to class! Attending class regularly is the best way to succeed in this class. Research has shown that the single most important factor in student success is attendance. Simply put, going to class greatly increases your ability to succeed. You are expected to be on time at the beginning of each class period. You are responsible for materials covered during your absences. Class attendance is checked daily. Although it is your responsibility to drop a course for nonattendance, the instructor has the authority to drop you for excessive absences.

If you are not attending class, you are not learning the information. As the information that is discussed in class is important for your career, students may be dropped from a course after accumulating absences in excess of six (6) hours of instruction. The six hours of class time would include any total classes missed or for excessive tardiness or leaving class early.

The last day to withdraw from this course is 04/06/2020.

Student Conduct

A student who is academically dishonest is, by definition, not showing that the coursework has been learned, and that student is claiming an advantage not available to other students. The instructor is responsible for measuring each student's individual achievements and also for ensuring that all students compete on a level playing field. Thus, in our system, the instructor has teaching, grading, and enforcement roles. You are expected to be familiar with the University's Policy on Academic Honesty, found in the catalog. What that means is: If you are charged with an offense, pleading ignorance of the rules will not help you. Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Penalties and/or disciplinary proceedings may be initiated by College System officials against a student accused of scholastic dishonesty. "Scholastic dishonesty": includes, but is not limited to, cheating on a test, plagiarism, and collusion

Cheating on a test includes:

- Copying from another students' test paper;
- Using materials not authorized by the person giving the test;
- Collaborating with another student during a test without authorization;
- Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of a test not yet administered;
- Bribing another person to obtain a test that is to be administered.

Plagiarism means the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work offered for credit.

Collusion mean the unauthorized collaboration with another person in preparing written work offered for credit. Possible punishments for academic dishonesty may include a grade of 0 or F in the particular assignment, failure in the course, and/or recommendation for probation or dismissal from the College System. (See the Student Handbook)

Electronic Devices

A graphing calculator can be used for this course.

The use of electronic devices by students in the classroom is up to the discretion of the instructor. Any use of such devices for the purposes other than student learning is strictly prohibited unless authorized as an appropriate ADA accommodation from the ADA Counselor.

Mathematics Program Information

- HCC Math Student Organizations: Mu Alpha Theta: Application:
<https://www.hccs.edu/resources-for/current-students/stem--science-technology-engineering--mathematics/stem-clubs/mu-alpha-theta-application/>

HCC Policies

Here's the link to the HCC Student Handbook <http://www.hccs.edu/resources-for/current-students/student-handbook/> In it you will find information about the following:

- Academic Information
- Academic Support
- Attendance, Repeating Courses, and Withdrawal
- Career Planning and Job Search
- Childcare
- disAbility Support Services
- Electronic Devices
- Equal Educational Opportunity
- Financial Aid TV (FATV)
- General Student Complaints
- Grade of FX
- Incomplete Grades
- International Student Services
- Health Awareness
- Libraries/Bookstore
- Police Services & Campus Safety
- Student Life at HCC
- Student Rights and Responsibilities
- Student Services
- Testing
- Transfer Planning
- Veteran Services

EGLS³

The EGLS³ (Evaluation for Greater Learning Student Survey System) will be available for most courses near the end of the term until finals start. This brief survey will give invaluable information to your faculty about their teaching. Results are anonymous and will be available to faculty and division chairs after the end of the term. EGLS³ surveys are only available for the Fall and Spring semesters. -EGLS3 surveys are not offered during the Summer semester due to logistical constraints.

<http://www.hccs.edu/resources-for/current-students/egls3-evaluate-your-professors/>

Campus Carry Link

Here's the link to the HCC information about Campus Carry:

<http://www.hccs.edu/departments/police/campus-carry/>

HCC Email Policy

When communicating via email, HCC requires students to communicate only through the HCC email system to protect your privacy. If you have not activated your HCC student email

account, you can go [to HCC Eagle ID](#) and activate it now. You may also use Canvas Inbox to communicate.

Housing and Food Assistance for Students

Any student who faces challenges securing their foods or housing and believes this may affect their performance in the course is urged to contact the Dean of Students at their college for support. Furthermore, please notify the professor if you are comfortable in doing so.

This will enable HCC to provide any resources that HCC may possess.

Office of Institutional Equity

Use the link below to access the HCC Office of Institutional Equity, Inclusion, and Engagement (<http://www.hccs.edu/departments/institutional-equity/>)

disAbility Services

HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including long and short term conditions, mental health, chronic or temporary medical conditions), please meet with a campus Abilities Counselor as soon as possible in order to establish reasonable accommodations. Reasonable accommodations are established through an interactive process between you, your instructor(s) and Ability Services. It is the policy and practice of HCC to create inclusive and accessible learning environments consistent with federal and state law. For more information, please go to <http://www.hccs.edu/support-services/disability-services/>

Title IX

Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status in educational programs and activities. If you require an accommodation due to pregnancy please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to:

David Cross
Director EEO/Compliance
Office of Institutional Equity & Diversity
3100 Main
(713) 718-8271
Houston, TX 77266-7517 or Institutional.Equity@hccs.edu
<http://www.hccs.edu/departments/institutional-equity/title-ix-know-your-rights/>

Office of the Dean of Students

Contact the office of the Dean of Students to seek assistance in determining the correct complaint procedure to follow or to identify the appropriate academic dean or supervisor for informal resolution of complaints.

<https://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-complaints/speak-with-the-dean-of-students/>

Department Chair Contact Information

College - Level Math Courses

Chair of Math	Susan Fife	SW Campus	713-718-7241	Stafford, Scarcella, N108
- Admin. Assistant	Tiffany Pham	SW Campus	713-718-7770	Stafford, Scarcella, N108
- Admin. Assistant	Christopher Cochran	SW Campus	713-718-2477	Stafford, Scarcella, N108
Math Assoc. Chair	Jaime Hernandez	CE Campus	713-718-7772	San Jacinto Building, Rm 369
Math Assoc. Chair	Ernest Lowery	NW Campus	713-718-5512	Katy Campus Building, Rm 112
Math Assoc. Chair	Mahmoud Basharat	NE Campus	713-718-2438	Codwell Hall Rm 105

Developmental Math Courses

Chair of Dev. Math	Jack Hatton	SE Campus	713-718-2434	Felix Morales Building, Rm 124
- Admin. Assistant	Carmen Vasquez	SE Campus	713-718-7056	Felix Morales Building, Rm 124
Dev. Math Assoc. Chair	Hien Nguyen	SE Campus	713-718-2440	Felix Morales Building, Rm 124
Dev. Math Assoc. Chair	Adnan Ulhaque	SW Campus	713-718-5463	Stafford, Learning Hub, Room 208
Technical Support Specialist	Douglas Bump	SE Campus	713-718-7317	Angela Morales Building, Rm 101

For issues related to your class, please first contact your instructor.

If you need to contact departmental administration, then contact the appropriate Associate Chair.

If further administrative contact is necessary, then contact the appropriate Department Chair.