



# Mathematics for Bus. & Soc.Sci-22901

## MATH-1324

SS 2022 Section 8433 3 Credits 02/14/2022 to 05/15/2022 Modified 02/12/2022

### Course Meetings

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#### Course Modality

IN-Person (P)

#### Meeting Days

Monday and Wednesday

#### Meeting Times

10:00 AM to 11:50 AM

#### Meeting Location

Alief - Hayes Rm B211

### Welcome and Instructor Information

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#### Instructor: Walid Alwagfi

- Email: [walid.alwagfi@hccs.edu](mailto:walid.alwagfi@hccs.edu)
- Office: By email

#### What's Exciting About This Course

In this course student will learn Mathematics of finance, solving linear systems, and matrices, and how to apply these concepts in real world problems.

#### My Personal Welcome

Welcome to Math 1324 —I'm delighted that you have chosen this course! One of my passions is to know as much as I can about Mathematics, and I can hardly wait to pass that on. I will present the information in the most exciting way I know, so that you can grasp the concepts and apply them now and hopefully throughout your life.

#### Preferred Method of Contact

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

[walid.alwagfi@hccs.edu](mailto:walid.alwagfi@hccs.edu)

#### Office Hours

- Via email.

[walid.alwagfi@hccs.edu](mailto:walid.alwagfi@hccs.edu)

### Course Description

MATH 1324 - Mathematics for Business & Social Sciences Credits: 3 (3 lecture). This course is intended for students majoring in liberal arts and secondary education. A survey of finite mathematics and its application to problems of business and the natural and social sciences. 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 Course.

### 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](#).

### Department Website

<https://www.hccs.edu/programs/areas-of-study/science-technology-engineering--math/mathematics/>  
(<https://www.hccs.edu/programs/areas-of-study/science-technology-engineering--math/mathematics/>)

## Core Curriculum Objectives (CCOs)

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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.

## Student Learning Outcomes and Objectives

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### 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 successful completion of Math 1324 this course, students will:

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.

## Departmental Practices and Procedures

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The Mathematics Department has specific expectations for calculators, proctored exams and grading policies. Refer to the Course Requirements and Devices sections below.

## Instructional Materials and Resources

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### Instructional Materials

The [HCC Online Bookstore \(https://hccs.bncollege.com/shop/hccs-central/page/find-textbooks\)](https://hccs.bncollege.com/shop/hccs-central/page/find-textbooks) provides searchable information on textbooks for all courses. Check with your instructor before purchasing textbooks because the book might be included in your course fees.

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

### Temporary Free Access to E-Book

For temporary free access to MyMathLab and the online eBook, go to [www.Coursecompass.com](http://www.Coursecompass.com) and register using the MyMathLab Course ID: **najm80413**

## Course Requirements

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### Assignments, Exams, and Activities

Type	Weight	Topic	Notes
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Type	Weight	Topic	Notes
Assignment. MyMathlab	20%		Students should use Pearson MyMathLab through Canvas to complete their homework assignments. Assignments will account to 20% of the grade. In order to get the whole 20% students must score 85 or above on every assignment.
Exams	45%		There will be three exams. No make-up Exam is given in this course. The lowest amongst the three will be dropped.
In-Class Activities/Quizzes	10%		There are quizzes given in class, along with in-class group work.
Final Exam	25%		All students will be required to take a cumulative Final Exam.

## Grading Formula

Grade	Range	Notes
A	90% and above	
B	80% to 89%	
C	70% to 79%	
D	60% to 69%	
F	<60%	Last day to drop with a W is April 15, 2022

## \* Instructor's Practices and Procedures

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### 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.

### Missed Assignments/Make-Up Policy

Assignments are due for submission in MyMathLab by the due date.

No Make-Up exams.

### Academic Integrity

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

<https://www.hccs.edu/studentprocedures> (<https://www.hccs.edu/studentprocedures>)

### Attendance Procedures

Attendance will be recorded every day of class. Excessive absence will subject the student to administrative drop. Attendance is highly encouraged. Based on lots of researches attendance and participation in the learning process play a major role in student success in the course.

### Student Conduct

Students expected to participate in the learning process in a productive manner, any disruptive to the learning process will be prohibited. all cellphones should be on mute during class session.

### Instructor's Course-Specific Information

April 12, 2022: Last day to withdraw from the course.

## Devices

In order to create an environment that promotes the success of all students, cell phones and beepers are to be turned to the off mode or placed on silent. Please turn your electronic devices off before entering the classroom. 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

## Faculty Statement about Student Success

Attendance and participation play a major role in student success in the course. I encourage students to ask questions and work together in groups in and outside the class room. I will do my utmost best to make the learning experience interesting and enjoyable.

## Faculty-Specific Information Regarding Canvas

This course section will use Canvas (<https://eagleonline.hccs.edu> (<https://eagleonline.hccs.edu>)) to supplement in-class assignments, exams, and activities.

HCCS Open Lab locations may be used to access the Internet and Canvas. For best performance, Canvas should be used on the current or first previous major release of Chrome, Firefox, Edge, or Safari. Because it's built using web standards, Canvas runs on Windows, Mac, Linux, iOS, Android, or any other device with a modern web browser.

Canvas only requires an operating system that can run the latest compatible web browsers. Your computer operating system should be kept up to date with the latest recommended security updates and upgrades.

## Social Justice Statement

Houston Community College is committed to furthering the cause of social justice in our community and beyond. HCC does not discriminate on the basis of race, color, religion, sex, gender identity and expression, national origin, age, disability, sexual orientation, or veteran status. I fully support that commitment and, as such, will work to maintain a positive learning environment based upon open communication, mutual respect, and non-discrimination. In this course, we share in the creation and maintenance of a positive and safe learning environment. Part of this process includes acknowledging and embracing the differences among us in order to establish and reinforce that each one of us matters. I appreciate your suggestions about how to best maintain this environment of respect. If you experience any type of discrimination, please contact me and/or the Office of Institutional Equity at 713-718-8271.

## HCC Policies and Information

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### HCC Grading System

HCC uses the following standard grading system:

Grade	Grade Interpretation	Grade Points
A	Excellent (90-100)	4
B	Good (80-89)	3
C	Fair (70-79)	2
D	Passing (60-69), except in developmental courses.	1
F	Failing (59 and below)	0

Grade	Grade Interpretation	Grade Points
FX	Failing due to non-attendance	0
W	Withdrawn	0
I	Incomplete	0
AUD	Audit	0
IP	In Progress. Given only in certain developmental courses. A student must re-enroll to receive credit.	0
COM	Completed. Given in non-credit and continuing education courses.	0

## Link to Policies in Catalog and Student Handbook

Here's the link to the HCC Catalog and Student Handbook: <https://catalog.hccs.edu/> (<https://catalog.hccs.edu/>)

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

## Link to HCC Academic Integrity Statement

<https://www.hccs.edu/student-conduct> (<https://www.hccs.edu/student-conduct>) (scroll down to subsections)

## Campus Carry Link

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

<https://www.hccs.edu/campuscarry> (<https://www.hccs.edu/campuscarry>)

## 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 \(https://www.hccs.edu/email\)](https://www.hccs.edu/email) and activate it now. You may also use Canvas Inbox to communicate.

## Office of Institutional Equity

Use the following link to access the HCC Office of Institutional Equity, Inclusion, and Engagement: <https://www.hccs.edu/eoo> (<https://www.hccs.edu/eoo>)

### Ability 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 <https://www.hccs.edu/accessibility> (<https://www.hccs.edu/accessibility>)

### 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](mailto:Institutional.Equity@hccs.edu) (<mailto:Institutional.Equity@hccs.edu>)

<https://www.hccs.edu/titleix> (<https://www.hccs.edu/titleix>)

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

## 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.

## Canvas Learning Management System

Canvas is HCC's Learning Management System (LMS), and can be accessed at the following URL:

<https://eagleonline.hccs.edu> (<https://eagleonline.hccs.edu>)

HCCS Open Lab locations may be used to access the Internet and Canvas. For best performance, Canvas should be used on the current or first previous major release of Chrome, Firefox, Edge, or Safari. Because it's built using web standards, Canvas runs on Windows, Mac, Linux, iOS, Android, or any other device with a modern web browser.

Canvas only requires an operating system that can run the latest compatible web browsers. Your computer operating system should be kept up to date with the latest recommended security updates and upgrades.

## HCC Online Information and Policies

Here is the link to information about HCC Online classes, which includes access to the required Online Information Class Preview for all fully online classes: <https://www.hccs.edu/online/> (<https://www.hccs.edu/online/>)

## 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/> (<https://eagleonline.hccs.edu/>)

## 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 during office hours, and 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](https://www.hccs.edu/studenthandbook) (<https://www.hccs.edu/studenthandbook>)

## EGLS3

The EGLS<sup>3</sup> ([Evaluation for Greater Learning Student Survey System](https://www.hccs.edu/egls3) (<https://www.hccs.edu/egls3>)) 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. EGLS<sup>3</sup> surveys are only available for the Fall and Spring semesters. EGLS<sup>3</sup> surveys are not offered during the Summer semester due to logistical constraints.

<https://www.hccs.edu/egls3> (<https://www.hccs.edu/egls3>)

## 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.

## Student 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 \(https://www.hccs.edu/tutoring\)](https://www.hccs.edu/tutoring) 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 [https://library.hccs.edu \(https://library.hccs.edu/\)](https://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 [https://www.hccs.edu/supplemental-instruction \(https://www.hccs.edu/supplemental-instruction\)](https://www.hccs.edu/supplemental-instruction)

### Resources for Students:

[https://www.hccs.edu/covid19students \(https://www.hccs.edu/covid19students\)](https://www.hccs.edu/covid19students)

### Basic Needs Resources:

[https://www.hccs.edu/support-services/counseling/hcc-cares/basic-needs-resources/ \(https://www.hccs.edu/support-services/counseling/hcc-cares/basic-needs-resources/\)](https://www.hccs.edu/support-services/counseling/hcc-cares/basic-needs-resources/)

### Student Basic Needs Application:

[https://www.hccs.edu/basicneeds \(https://www.hccs.edu/basicneeds\)](https://www.hccs.edu/basicneeds)

## COVID-19

Here's the link to the HCC information about COVID-19:

[https://www.hccs.edu/covid-19 \(https://www.hccs.edu/covid-19\)](https://www.hccs.edu/covid-19)

## Sensitive or Mature Course Content

In this college-level course, we may occasionally discuss sensitive or mature content. All members of the classroom environment, from your instructor to your fellow students, are expected to handle potentially controversial subjects with respect and consideration for one another's varied experiences and values.

## Instructional Modalities

### In-Person (P)

Safe, face-to-face course with scheduled dates and times

### Online on a Schedule (WS)

Fully online course with virtual meetings at scheduled dates and times

## Online Anytime (WW)

Traditional online course without scheduled meetings

## Hybrid (H)

Course that meets safely 50% face-to-face and 50% virtually

## Hybrid Lab (HL)

Lab class that meets safely 50% face-to-face and 50% virtually

## Copyright Statement

In order to uphold the integrity of the academic environment and protect and foster a cohesive learning environment for all, HCC prohibits unauthorized use of course materials. Materials shared in this course are based on my professional knowledge and experience and are presented in an educational context for the students in the course. Authorized use of course materials is limited to personal study or educational uses. Material should not be shared, distributed, or sold outside the course without permission. Students are also explicitly forbidden in all circumstances from plagiarizing or appropriating course materials. This includes but is not limited to publically posting quizzes, essays, or other materials. This prohibition extends not only during this course, but after. Sharing of the materials in any context will be a violation of the HCC Student Code of Conduct and may subject the student to discipline, as well as any applicable civil or criminal liability. Consequences for unauthorized sharing, plagiarizing, or other methods of academic dishonesty may range from a 0 on the specified assignment and/or up to expulsion from Houston Community College. Questions about this policy may be directed to me or to the Manager of Student Conduct and Academic Integrity.

## Course Calendar

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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.

Topic
Chapter 5 <i>Sections: 5.1 Through 5.4</i>
Chapter 8 <i>Sections: 8.1 Through 8.5</i>
Chapter 9 <i>Sections 9.1 Through 9.4</i> <i>Test 1. Monday 3/14/2022</i>
Chapter 2 <i>Sections: 2.1 Through 2.2</i>
Chapter 6 <i>Sections: 6.1 Through 6.5</i> <i>Test 2. Wednesday 4/14/2022</i>

Chapter 7 Sections 7.1 Through 7.5

Chapter 3 Sections 3.4 and 3.6

Chapter 4 Sections 4.1, 4.3 and 4.4

Test 3. Wednesday 4/27/2022

Final Review.

Final Exam. 5/11/2022 10:00 AM

## Additional Information

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### Departmental/Program Information

Program Information for Majors: <https://www.hccs.edu/programs/areas-of-study/science-technology-engineering--math/mathematics/>

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

### Process for Expressing Concerns about the Course

If you have concerns about any aspect of this course, please reach out to your instructor for assistance first. If your instructor is not able to assist you, then you may wish to contact the Department Chair.

#### Mathematics Courses

Chair of Math	Mahmoud Basharat	SW Campus	713-718-2438	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	Susan Fife	NW Campus	713-718-7241	Katy Campus Building, Rm 112
Math Assoc. Chair	Hien Nguyen	NE Campus	713-718-2440	Northline, Rm 324

#### Developmental Mathematics Courses

Chair of Dev. Math	Dorothy A. Muhammad	SE Campus	713-718-5846	Felix Morales Building, Rm 124
- Admin. Assistant	Carmen Vasquez	SE Campus	713-718-7056	Felix Morales Building, Rm 124
Dev. Math Assoc. Chair	Jack Hatton	SE Campus	713-718-2434	Felix Morales Building, Rm 124
Dev. Math Assoc. Chair	Adnan Ulhaque	SW Campus	713-718-5463	Felix Morales Building, Rm 124/ Stafford Scarcella, N108