HCC | HOUSTON COMMUNITY COLLEGE

Division of Mathematics
Mathematics Department
https://learning.hccs.edu/programs/mathematics

Math 1325: Calculus for Business & Social Sciences | Lecture | #13236

Summer 2021 | 5 Weeks (6.7.2021-7.11.2021)
3 Credit Hours | 48 hours per semester
Online Anytime

Modality Statement

This semester, there are three modalities for Developmental Math courses: Online Anytime, Online on a Schedule, and Flex Campus. Online Anytime classes are traditional online courses; coursework is online, and there are no meetings at specific times. Online on a Schedule classes are online courses with traditional meeting components; coursework is online, and there are specific times to log in for scheduled class meetings. Flex Campus are in-person classes; coursework is online, and students have the choice to come to campus or to participate online during scheduled class meetings.

This section of MATH 1325 is Online Anytime.

To make up for the closure of HCC from June 18th to June 19th (due to Juneteenth Holiday), Test 1, Test 2, Test 3 will be postponed for June 21-22, June 28-29, respectively July 5-6. The deadline for submission of the online assignments will be July 9th.

Instructor Contact Information

Instructor: Cristina Toropu, Ph.D.
HCC Email: cristina.toropu@hccs.edu

Office Phone: 713-718-5476 Office: HUB, Room 208

OfficeLocation: SW, Stafford Campus
Office Hours: Virtual Office Hours held in Kaltura (only by appointment): MoTuWeThFr:4:00pm-5:00pm;

Please send me an email in advance, to set up an appointment with me.

To connect with me in Kaltura (in Canvas), please log into your Eagle Online Canvas account, select our Canvas course shell, then select "Media Gallery" tab and then click "Join Meeting".

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

My preferred method of contact is by e-mail. 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

This course will help students to improve on their analytical, critical thinking and become truly informed consumers.

My Personal Welcome

Welcome to "Calculus for Business & Social Sciences"—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. The best way to really discuss issues is in person and I'm available during posted office hours to tackle the questions.

Prerequisites

Prerequisites: A grade of C or better in Math 1314 or its equivalent. A grade of C or better in MATH 1324 or the equivalent. If you have enrolled in this course having satisfied these prerequisites, you have a higher chance of success than students who have not done so. Please carefully read and consider the repeater policy in the HCCS Student Handbook.

Canvas Learning Management System

This section of MATH 1325 will use Canvas (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. **USE FIREFOX OR CHROME AS THE INTERNET BROWSER**.

HCC Online Information and Policies
Include if Online course. Here is the link to information about HCC Online classes including the required Online Orientation for all fully online classes: http://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/login/ldap

Instructional Materials

Textbook Information
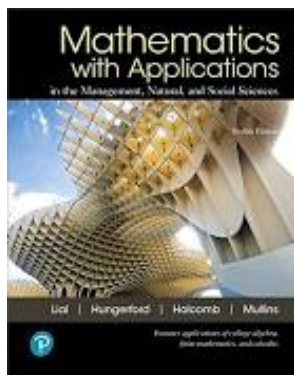
The textbook listed below is *required* for this course.
Mathematics with Applications In the Management, Natural, and Social Sciences; 12th ed.; By Margaret Lial, Thomas Hungerford, John Holcomb, Jr., Bernadette Mullins. Pearson. ISBN-13: 978-0135335215

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.
To buy your student MyMathLab code, please log into your Canvas account and follow the registration steps for registering for MyMathLab through Canvas.

Temporary Free Access to E-Book

For temporary free access to MathLab and the online eBook, please log into your Canvas account and follow the registration steps for registering for MyMathLab through Canvas.

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

The intent of this course is to provide the student certain manipulative skills with limits insofar as they apply to concrete but elementary problems in the social and natural sciences. Mathematical rigor will be kept to a minimum. This course is a survey of differential and integral calculus including the study of functions and graphs from a calculus viewpoint as applied to problems in business and the natural and social sciences.

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 1325, the student will be able to:
1. Apply calculus to solve business, economics, and social sciences problems.
2. Apply appropriate differentiation techniques to obtain derivatives of various functions, including logarithmic and exponential functions.
3. Solve application problems involving implicit differentiation and related rates.
4. Solve optimization problems with emphasis on business and social sciences applications.
5. Determine appropriate technique(s) of integration.
6. Integrate functions using the method of integration by parts or substitution, as appropriate.
7. Solve business, economics, and social sciences applications problems using integration techniques.

Learning Objectives

Upon completion of MATH 1325, the student will be able to:
1. Find the limit of a function as x approaches a.
2. Find the average and instantaneous rate of change.
3. Use a limit to find the derivative of a function.
4. Use the quotient rule to find the derivative of a function.
5. Use the power rule to find the derivative of a function.
6. Find the derivative of exponential and logarithmic functions.
7. Tell if a function is continuous at given values of x.
8. Find the absolute extrema of a given function.
9. Use the second derivative to find all relative extrema for a function.
10. Use derivatives for various applications and sketching of curves.
11. Find antiderivatives for indefinite integrals and find indefinite integrals using substitution.
12. Given a definite integral, find the area under the curve.
13. Evaluate the results of a summation.
14. Using the fundamental theorem of calculus, evaluate definite integrals.
15. Apply definite integrals for various applications and use the table of integrals to find antiderivatives.
16. Find general solutions for given differential equations.
17. Graph the first octant portion of a given plane.
18. Given a function f(x,y), find all second-order partial derivatives.

19. Given a function f(x,y), find the values of any relative extrema and identify saddle points.

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

APPROXIMATE TIME	TEXT REFERENCE

UNIT I	Algebra Review (8 hours)
1.5 hours	1.3 Factoring
1.5 hours	2.3 Linear Models
1.5 hours	3.6 Rational Functions

1.5 hours	4.1 Exponential Functions
2 hours	4.3 Logarithmic Functions

UNIT II — Differential Calculus (12 hours)

1.5 hours	11.1 Limits
1.5 hours	11.2 One-sided Limits and Limits Involving Infinity
1 hour	11.3 Rates of Change
1 hour	11.4 Tangent Lines and Derivatives
1.5 hours	11.5 Techniques for Finding Derivatives
1.5 hours	11.6 Derivatives of Products and Quotients
1.5 hours	11.7 The Chain Rule
1.5 hours	11.8 Derivatives of Exponential and Logarithmic Functions
1 hour	11.9 Continuity and Differentiability

UNIT III — Applications of the Derivative (10 hours)

1.5 hours	12.1 Derivatives and Graphs
1.5 hours	12.2 The Second Derivative
2 hours	12.3 Optimization Applications
1.5 hours	12.4 Implicit Differentiation
1.5 hours	12.5 Related Rates
2 hours	12.6 Curve Sketching

UNIT IV — Integral Calculus (12 hours)

2 hours	13.1 Antiderivatives
2 hours	13.2 Integration by Substitution
2 hours	13.4 Area and the Definite Integral
2 hours	13.5 The Fundamental Theorem of Calculus
2 hours	13.6 Applications of Integrals
2 hours	13.7 Differential Equations

UNIT V — Multivariate Calculus (6 hours)

2 hours	14.1 Functions of Several Variables
2 hours	14.2 Partial Derivatives
2 hours	14.3 Extrema of Functions of Several Variables

Assignments, Exams, and Activities

Exams

There will be three major online examinations and an online comprehensive, mandatory final examination.

To make up for the closure of HCC from June 18th to June 19th (due to Juneteenth Holiday), Test 1, Test 2, Test 3 will be postponed for June 21-22, June 28-29, respectively July 5-6. The deadline for submission of the online assignments will be July 9th.

Tentative dates for examinations:

Test 1: June 21-22, 2021. It will cover sections 1.3, 2.3, 3.6, 4.1, 4.3, 11.1, 11.2, 11.3, 11.4, 11.5. It will be given in Canvas. It will require the use of Responds LockDown Browser with Monitor. You can take it at home.

Test 2: June 28-29, 2021. It will cover sections 11.6, 11.7, 11.8, 11.9, 12.1, 12.2, 12.3, 12.4, 12.5, 12.6. It will be given in Canvas. It will require the use of Responds LockDown Browser with Monitor. You can take it at home.

Test 3: July 6-7, 2021. It will cover sections 13.1, 13.2, 13.4, 13.5, 13.6, 13.7, 14.1, 14.2, 14.3. It will be given in Canvas. It will require the use of Responds LockDown Browser with Monitor. You can take it at home.

Final Exam

All students will be required to take a cumulative Final exam. If a student doesn't take it, he/she will get a grade of F.

The final exam will be given as an online comprehensive, mandatory test in Canvas on July 10-11, 2021. You can take it at home.

It will require the use of Responds LockDown Browser with Monitor.

Exam policy:
I will replace the lowest score of the three online examinations, with the score of the online final exam, if higher.

Calculator policy:
On any test, any use of calculator will be allowed.

Homework will be done online in MyMathLab, which can be accessed only through Canvas.

First, please log in into your Canvas account. Then select this Math 1325 course. Then click on "MyLab& Mastering" tab and follow the registration steps for MyMathLab through Canvas. You register for MyMathLab only for the very first time, after buying your student MyMathLab access code. You might want to use a temporary free access code, but that is valid only for two weeks. Before those two weeks elapse, one should buy his/her student MyMathLab access code. In order to access the online assignments, please always log into your Canvas account and then access your MyMathLab account through Canvas. The due

date for all online assignments is July 9, 2021.

Grading Formula

Exam 1   17.5% of your grade
Exam 2   17.5% of your grade
Exam 3   17.5% of your grade
Homework   17.5% of your grade
Final Exam   30% of your grade

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.

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

Academic Integrity

If a student is caught cheating, he/she will get a failure grade for the class.

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

I expect students to regularly log into their Canvas account and performed the required online tasks for the class. **The last day to withdraw is June 28, 2021.**

Student Conduct

I expect students to behave in a respectful way.

Electronic Devices

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

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	Mahmoud Basharat	NW Campus	713-718-2438	Katy Campus Building, Rm 112
Math Assoc. Chair	Emmanuel Usen	NE Campus	713-718-8062	Northline, Rm 324

Developmental Math Courses

Chair of Dev. Math	Marisol Montemayor	SE Campus	713-718-7153	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	Jack Hatton	SW Campus	713-718-2434	Stafford, Learning Hub, Room 208

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.