



Mathematics

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Distance Education – Northwest College
MATH 1325 – Elements of Calculus with Applications
CRN 11661 - Summer 2017
Cyberspace 24/7

3-hour lecture course 48 hours per semester/8 weeks/Jun 5 – July 29
Textbook: *Mathematics with Applications*; 11th ed.; Lial, Margaret L., Thomas W. Hungerford; Addison Wesley; 2015 (The textbook is packaged together with the solutions manual and the MyMathLab access code at the bookstores at HCCS.)
ISBN: 1323407324 (special price of \$90 for MML + etext)

MYMATHLAB (MML) COURSE ID: CANVAS-linked

Instructor: Domingo Litong

Contact Information: 713 718 5473 (messages) domingo.litong@hccs.edu (via EO Quickmail)

Your success in this class is my own success. I do not teach numbers; I teach YOU. Please e-mail me for an appointment. Since I cannot attend to many students at the same time, it's first come, first served basis.

Course Description

MATH 1325 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.

Prerequisites

A grade of "C" or better in MATH 1314 or equivalent.

Course Goal & Audience

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 intended for students majoring in business, natural, and social sciences.

Student Learning Outcomes

The student will be able to:

1. Find limits of functions and determine continuity of functions.
2. Find derivatives of algebraic, logarithmic, and exponential functions, and use derivatives to solve applied problems and produce graphs.
3. Find integrals, either approximate or exact, of some algebraic and exponential functions, and use integrals to solve applied problems.
4. Find partial derivatives of multi-dimensional functions, and use partial derivatives to solve applied problems and produce graphs.

Learning objectives

Students will:

- 1.1 Find the limit of a function as x approaches a number a .
- 1.2 Find the average and instantaneous rate of change.

- 1.3 Use a limit to find the derivative of a function.
- 2.1 Use the quotient rule to find the derivative of a function.
- 2.2 Use the power rule to find the derivative of a function.
- 2.3 Find the derivative of exponential and logarithmic functions.
- 2.4 Tell if a function is continuous at given values of x .
- 2.5 Find the absolute extrema of a given function.
- 2.6 Use the second derivative to find all relative extrema for a function.
- 2.7 Use derivatives for various applications and sketching of curves.
- 3.1 Find antiderivatives for indefinite integrals and find indefinite integrals using substitution.
- 3.2 Given a definite integral, find the area under the curve.
- 3.3 Evaluate the results of a summation.
- 3.4 Using the fundamental theorem of calculus, evaluate definite integrals.
- 3.5 Apply definite integrals in applications and use the table of integrals to find antiderivatives.
- 3.6 Find general solutions for given differential equations.
- 4.1 Graph the first octant portion of a given plane.
- 4.2 Given a function $f(x,y)$, find all second-order partial derivatives.
- 4.3 Given a function $f(x,y)$, find the values of any relative extrema and identify saddle points.

8-WEEK CALENDAR

This calendar is subject to change. This serves as a guide to pace the class. It is better to get ahead of schedule than be late –doing so will provide time for review at the end of the term.

WEEK ONE

Introduction

- 1.3 Factoring
- 2.3 Linear Models
- 3.7 Rational Functions
- 4.1 Exponential Functions

WEEK TWO

4.3 Logarithmic Functions

- 11.1 Limits
- 11.2 One-Sided Limits & Limits Involving infinity
- 11.3 Rates of Change
- 11.4 Tangent Lines & Derivatives

WEEK THREE

11.5 Techniques for Finding Derivatives

- 11.6 Derivatives of Products and Quotients
- 11.7 The Chain Rule

Exam 1 (Sec 1.3 – 11.4)

WEEK FOUR

- 11.8 Derivatives of Exponential and Logarithmic Functions
- 11.9 Continuity and Differentiability

12.1 Derivatives and Graphs

12.2 The Second Derivative

WEEK FIVE

- 12.3 Optimization Applications
- 12.4 Curve Sketching
- 13.1 Antiderivatives

Exam 2 (Sec 11.5 – 12.4)

WEEK SIX

- 13.2 Integration by Substitution
- 13.3 Area and the Definite Integral
- 13.4 The Fundamental Theorem of Calculus
- 13.5 Applications of Integrals
- 13.7 Differential Equations

WEEK SEVEN

- 14.1 Functions of Several Variables
- 14.2 Partial Derivatives
- 14.3 Extrema of Functions of Several Variables

Exam 3 (Sec 13.1 – 13.7)

WEEK EIGHT

Review for final

FINAL EXAM

Instructional Methods

Learning math is doing math. As a DE student, you earn my respect: you will do much of the learning on your own. Don't get discouraged, however, for there is help available to you. There are lecture videos embedded in each homework in MyMathLab, and there are videos on how to solve problems as well. Besides, I am just an e-mail away!

For every section we will cover in this class, I have carefully chosen exercises for you to practice on, and this is when your own learning really takes shape. **I emphasize the importance of doing homework.**

Though I try to include different problems for each section, it is not possible to exhaust all types of situations. You will discover some of the ways yourself, and this is when you learn to think independently, making the resolutions to those problems your own. I guarantee that your moments of 'Eureka!' will be just as exhilarating as overcoming a seemingly impossible obstacle.

I understand that there will always be some obnoxious problems, and if you don't meet them, then you are not just trying hard enough. These types of problems are the ones that will teach you. But don't lose hope! I am just an e-mail away!

Student Assignments

These are done through MyMathLab. If you do not get the correct answer to a problem, you are given anywhere from 3 to 5 chances. If you feel you need to practice on a problem, you can always do a **similar problem** which is a link that you can find at the bottom of each question box. Also, there is 'Study Plan' in MyMathLab which tells you which areas you need more help and practice. It acts like a 'cookie' that gathers information on your mistakes and

successes and then tailor fits a study plan for you. Your work will not be graded while you are in Study Plan environment.

Overall homework grade obtained by doing homework online using MyMathLab may replace lowest exam grade. There is no need for a course ID because it is directly linked to CANVAS. **If you want to access MML directly via the publisher's website www.coursecompass.com, you may do so only** after you have registered for MyMathLab via EO CANVAS. I suggest however that you access MML via CANVAS for official attendance in class.

Assessments: Exams and HW

There are three (3) major exams and a comprehensive final exam. All the exams are each worth 100 points and **must be done in a proctored environment such as a valid testing center. For those in the Houston area, the paper-and-pencil exams are given on Fridays at Central Campus and Saturdays at Alief-Hayes Campus. Out-of-town students need to contact Mr Wayne Moten of the DE Office through wayne.moten@hccs.edu or de@hccs.edu to set up their proctor at least 2 weeks prior to testing.** Homework serves as a daily check-up and must be done regularly. Overall HW grade for the semester may replace one of the three major exams; the comprehensive final exam always counts.

HCC Policy Statement - ADA

Services to Students with Disabilities

Houston Community College is dedicated to providing an inclusive learning environment by removing barriers and opening access for qualified students with documented disabilities in compliance with the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act. Ability Services is the designated office responsible for approving and coordinating reasonable accommodations and services in order to assist students with disabilities in reaching their full academic potential. In order to receive reasonable accommodations or evacuation assistance

in an emergency, the student must be registered with Ability Services.

If you have a documented disability (e.g. learning, hearing, vision, physical, mental health, or a chronic health condition), that may require accommodations, please contact the appropriate Ability Services Office below. Please note that classroom accommodations cannot be provided prior to your Instructor's receipt of an accommodation letter and accommodations are not retroactive. Accommodations can be requested at any time during the semester, however if an accommodation letter is provided to the Instructor after the first day of class, sufficient time (1 week) must be allotted for the Instructor to implement the accommodations.

Ability Services Contact Information

Central College 713-718-6164

Coleman College 713-718-7376

Northeast College 713-718-8322

Northwest College 713-718-5422 713-718-5408

Southeast College 713-718-7144

Southwest College 713-718-5910

Adaptive/Assistive Equipment Technology 713-718-6629 713-718-5604

Interpreting and CART services 713-718-6333

HCC Policy Statement: Academic Honesty

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 that has not been 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)

How do I access my class online?

Your entry page for the Eagle Online server is <https://eo2.hccs.edu/login/index.php>.

Your username is the same as your ID for your [HCC Student System Sign In](#). If you don't know it, you can retrieve it [here](#).

Your initial password is the word "distance" in lowercase.

If you have created your own password after your initial login, and can't remember it, please call 713-718-5275 option 1 for assistance.

DE Policy on Testing, Withdrawal, Complaints, Support, etc.

The Distance Education Student Handbook contains policies and procedures unique to the DE student. It is the student's responsibility to be familiar with the handbook's contents and part of the mandatory orientation. The handbook contains valuable information, answers, and resources, such as DE contacts, policies and procedures (how to drop, attendance requirements, etc.), student services (ADA, financial aid, degree planning, etc.), course information, testing procedures, technical support, and academic calendars. Refer to the DE Student Handbook by visiting this link: <http://de.hccs.edu/de/de-student-handbook>

SOCIAL NETWORKING

DE students are encouraged to become a fan of [DE on Facebook](#) and follow [DE on Twitter](#). These social networking sites can provide a sense of community for the online learner, as well as up-to-date information and announcements related to HCC and DE.

VIRTUAL CLASSROOM CONDUCT

As with on-campus classes, all students in HCC Distance Education courses are required to follow all [HCC Policies & Procedures](#), the [Student Code of Conduct](#), the [Student Handbook](#), and relevant sections of the Texas Education Code when interacting and communicating in a virtual classroom with your professor and fellow students. Students who violate these policies and guidelines will be subject to disciplinary action that could include denial of access to course-related email, discussion groups, and chat rooms or even removal from the class.

Instructor Requirements

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 class activities via homework, discussions, and lectures via PowerPoint presentations.
- Inform students of policies such as attendance, withdrawal, tardiness and make up
- Provide the course outline and class calendar

To be successful in this class, it is the student's responsibility to:

- Do homework and participate in class discussions and activities
- Read and comprehend the textbook
- Complete and pass exams:
- Watch PowerPoint presentations, video clips, and animated solutions in lieu of lectures.
- Ask for help when there is a question or problem
- Keep copies of all paperwork, including this syllabus, handouts and all assignments.
- Keep a notebook containing all written solutions to homework problems as needed.

Grading

Your final course grade is based on the following standard HCC scale.

Final Ave	$90 \leq \text{Avg} \leq 100$	$80 \leq \text{Avg} < 90$	$70 \leq \text{Avg} < 80$	$60 \leq \text{Avg} < 70$	$\text{Avg} < 60$
Final Grade	A	B	C	D	F

Grading Formula: [(Best 3 grades of Exam 1, 2, 3, and Homework) + Finals] / 4

Test Schedule (subject to change):

Test	Chapters Covered on Test	Date & Place
Test #1	Sec 1.3 – 11.4	June 23-24 Central/Alief-Hayes
Test #2	Sec 11.5 – 12.4	July 7-8 Central only
Test #3	Sec 13.1 – 13.7	July 21-22 Central/Alief-Hayes
Final Exam	all chapters including Chap 14	July 28-29 Central only

Important Dates:

Drop Deadline: July 10, 2017

Holidays: See Academic Calendar at hccs.edu

Calculators:

Any scientific, graphing calculator may be used in this class.

Personal Communication Device Policy:

All personal communication devices (any device with communication capabilities including but not limited to cell/smart phones, blackberries, androids, pagers, cameras, palmtop computers, tablets, lap tops, PDA's, radios, headsets, portable fax machines, recorders, organizers, databanks, and electronic dictionaries or translators) must not be on the student desk during examinations. Usage of such devices during exams is expressly prohibited and will be considered cheating (see academic honesty section above).

ONLINE TUTORING and other SUPPLEMENTAL INSTRUCTION RESOURCE MATERIALS

HCC provides free online tutoring in writing, math, science, and other subjects. This is the HCC [AskOnline](http://hccs.askonline.net) Tutoring site: [http://hccs.askonline.net/](http://hccs.askonline.net). Use your student ID or HCC e-mail address to create an account. Instructions, including a 5-minute video, are provided to make you familiar with the capabilities of this service.

Further, any student enrolled in Math at HCC has access to the math tutoring labs which are staffed with faculty and/or student assistants who can aid students with math problems. With WebAssign, free tutoring is also provided 24/7, real time. Another helpful resource is the Student Solutions Manual that may be obtained from the bookstore.

EGLS₃ -- Evaluation for Greater Learning Student Survey System

At Houston Community College, professors believe that thoughtful student feedback is necessary to improve teaching and learning. During a designated time, you will be asked to answer a short online survey of research-based questions related to instruction. The anonymous results of the survey will be made available to your professors and division chairs for continual improvement of instruction. Look for the survey as part of the Houston Community College Student System online near the end of the term. Visit www.hccs.edu/EGLS3 for more information.

Administration contact information

College - Level Math Courses

Chair of Math	Jaime Hernandez	SW Campus	713-718-2477	Stafford, Scarcella, N108
- Secretary	Tiffany Pham	SW Campus	713-718-7770	Stafford, Scarcella, N108
Math Assoc. Chair	Clen Vance	CE Campus	713-718-6448	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	Susan Fife	SE Campus	713-718-7241	Felix Morales Building, Rm 124
- Secretary	Carmen Vasquez	SE Campus	713-718-7056	Felix Morales Building, Rm 124
Dev. Math Assoc. Chair	Marisol Montemayor	SE Campus	713-718-7153	Felix Morales Building, Rm 124
Dev. Math Assoc. Chair	Jack Hatton	NE Campus	713-718-2434	Northline Building, Room 321

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.