Houston Community College

Course Syllabus

Elements of Calculus with Applications

SYLLABUS FOR MATH 1325

INSTRUCTOR ***Fatemeh Salehibakhsh***

E-MAIL ***fatemeh.salehibakhsh@hccs.edu***

Office Hours ***M - W 1:00 – 2:00 (by appointment)***

Location ***H. C. C. West Loop Campus***

Catalog Description: MATH 1325 Elements of Calculus with Applications. 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: MATH 1314 or equivalent.
3 credit (3 lecture).

Prerequisites: MATH 1314 or its equivalent.

Course Intent: 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.

Audience: This course is intended for students majoring in business, and the natural and social sciences.

Course Objectives: Upon completion of this course, a student should 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.

Textbook*:* *Mathematics with Applications*; 9th ed.; Lial, Margaret L., Thomas W. Hungerford; Addison Wesley; 2007

Attendance/Tardy withdrawal:

Attendance policy:
Attendance is checked during every class. When you have accumulated 12.5 % or 6 hours of Absences, the instructor will drop you from the class.

You benefit for attending class regularly. You earn rewards as follows: perfect attendance (0 absent and 0 tardy) = 5. The point will add to the final exam grade.
The students receive 10 points as extra credit assign to each test with perfect attendance between two tests.
Any student who arrives 15 minutes after the class has begun or leaves before the class is dismissed without any prior approval of the instructor is considered absent.

Assessment/Make-up and Grading
There are assigned homework problems after every section. It is crucial for you to succeed in this class that you do faithfully your homework every week.

There will be 3 major Test, Homework and final exam. One of the lowest grades in your major test will be drop.

3 Major Tests; 60%

Home work 20%

Final Exam 20%

There will be no make up, since I will drop the lowest grade.

Grading policy:
Your final course grade is based on the following standard HCCS scale.

Final Average	$90 \leq Avg \leq 100$	$80 \leq Avg < 90$	$70 \leq Avg < 80$	$60 \leq Avg < 70$	$Avg < 60$
Final Course Grade	A	B	C	D	F

Student conduct:

Students should not engage in disruptive activities while in the classroom. Any conduct that is deemed detrimental to the academic atmosphere, such as cell phone use or consistently talking during instructional delivery, will not be tolerated. Any student found guilty of such conduct will be asked to leave the classroom until further notice.

Academic dishonesty:

All students are required to exercise academic honesty in completion of all tests and assignments. Penalties for academic dishonesty (cheating on a test, collusion on an assignment, etc.) include, but are not limited to, a reduced grade, a "0" on that test or assignment, a "W" in the course, or an "F" in the course. The use of recording devices, including camera phones and tape recorders, is prohibited in all locations where instruction, tutoring, or testing occurs. Students with disabilities who need to use a recording device as a reasonable accommodation should contact the Disability Services Office for information.

Students with Disabilities:

Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Support Services Office at this college at the beginning of the semester. To make an appointment, please call 713-718-7910. Professors are authorized to provide only the accommodations requested by the Disability Support Office.

Withdrawal policy:

If your name is on the roll at the end of the term, you WILL receive a grade. If you wish to drop the class, then it is your responsibility to do that before the final drop date. Neither you nor your instructor will be able to perform the drop after the final drop date. Please refer to the following notice before dropping the class.

NOTICE: Students who take a course three or more times will face significant tuition or fee increases at HCC and other Texas public colleges and universities. In addition, state law dictates that students are allowed a maximum of 6 course withdrawals during their entire college career. Starting in the fall of 2007, students with more than 6 drops will be required to pay additional fees. Prior to course withdrawal, you must confer with your professor or counselor about your study habits, homework, test-taking skills, attendance, course participation, and tutoring or other assistance that is available.

COURSE OUT LINE FALL 2007

Aug 25	1.3 Factoring Homework {5,10,15,……65}
Aug 27	2.3 Linear Models H {3,6,…,12}
Sep 1	**Labor Day Holiday**
Sep 3	3.7 Rational Functions H { 3,6,…18}
Sep 8	4.1 Exponential Functions H {5, 10,…,25}
Sep 10	4.3 Logarithmic Functions H {3,6,…,36}

Sep 15 Test # I

Sep 17	11.1 Limits H {5,10,…50}
Sep 22	11.2 Rates of Change H { 5,10,…,30}
Sep24	11.3 Tangent Lines and Derivatives H {5,10,…25}
Sep 29	11.4 Techniques for Finding Derivatives H {5,10,…45}
Oct 1	11.5 Derivatives of Products and Quotients H {3,9,…36}
Oct 6	11.6 The Chain Rule, H { 3,6,…,45} 11.7 Derivatives of Exponential and Logarithmic Functions H { 3,6,…,45}
Oct 8	11.8, 11.9 Continuity and Differentiability H: {3,6,…24}

Oct 13 Test # II

Oct 15 12.1 Derivatives and Graphs
H { 3,6,…,36}

Oct 20 12.2 The Second Derivative
H { 5,10,…,45}

Oct 22 12.3 Optimization Applications
H {3,6,…,21}

Oct 27 12.4 Curve Sketching

Oct 29 Test # III

Nov 3 13.1 Antiderivatives
H {3,6,…,39}

Nov 5 Last Day for Administrative / Students Withdrawn 4:30 pm

Nov 5 13.2 Integration by Substitution
H { 3,6,…,39}

Nov 10 13.3 Area and the Definite Integral
H {3.6,…,18}

Nov 12 13.4 The Fundamental Theorem of Calculus
H {3,6,…,36}

Nov 17 13.5 Applications of Integrals
H {5,10,…,25}

Nov 19 13.7 Differential Equations
H { 3, 6,…,27}

Nov 24 Test # IV

Nov 26 14.1 Functions of Several Variables
H {5, 10,…,25}
14.2 Partial Derivatives
H { 3,6,…,39}

Nov 27 – 30 Thanksgiving Holiday

Dec 1 14.3 Extrema of Functions of Several Variables

	H { 3,6,…,24}
Dec 3	Final Exam Review

Dec 8 Comprehensive Final Exam (9: 00 – 11:00)