COURSE SYLLABUS

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YEAR COURSE OFFERED: 2015
SEMESTER COURSE OFFERED: Summer
DEPARTMENT: Mathematics
COURSE NUMBER: 1431
NAME OF COURSE: Calculus 1 (online)
NAME OF INSTRUCTOR: Melahat Almus (http://www.math.uh.edu/~almus/)
COURSE WEBPAGE: http://math.uh.edu/~almus/1431_summer15.htm
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The information contained in this class syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

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Learning Objectives

The student will master the following:
- Limits and Continuity
- Differentiation
- Mean Value Theorem and Applications
- Integration

Since this is an online class there are certain special requirements:

You must have access to a computer and a fast internet connection. Broadband, Cable and DSL connections are the best for this. Good dial-up connections are also suitable. You will need to install Adobe Acrobat Reader 8.1 or higher which is available for free from http://www.adobe.com. You will need access to a printer and scanner or camera so that you can complete your written homework and turn it in electronically. Alternatively, you can use a free writing software and a writing tablet to work with the homework directly on your computer.

There will be two online lecture session and two problem sessions every week. The completed notes and links to videos and extra examples will be posted for each section covered. If you cannot attend lecture session, there will be an alternate assignment for you to do in place of the daily lecture EMCF questions. If you cannot attend recitation sessions, there will be an alternate assignment for you to do in place of the daily lab EMCF questions. Attendance will be taken
through the session chat log and participation in the EMCF questions. EMCF questions are electronic multiple choice questions that you will answer online on www.casa.uh.edu.

**Major Assignments/Exams**

Final Exam: 30%  
Exam 1: 5%  
Exams 2 and 3: 20% each  
Homework (written and EMCF): 10%  
Quizzes: 10%  
Daily In-Class EMCFs, Attendance (lecture and lab): 5%

Each student is responsible for scheduling his/her exams and for taking his/her exams at the appointed time. There are no make up exams in this course. A missed exam will result in a zero. Final exam replaces ONE missed test. No calculators are allowed during exams.

Remote students, those that live more than 100 miles from the UH campus, need to email their instructor regarding remote administration of exam 2, exam 3 and the final. It will be the student’s responsibility to find a university or testing center that will administer the exam. More information for remote testing can be found here http://distance.uh.edu/services/exam_proctoring.html.

No make ups will be given for any tests or assignments.

**Homework**

Homework will be given for each online session. Homework will consist of multiple choice questions and will be answered under EMCF on CourseWare. The submission of homework is compulsory and will count for a major portion of your grade (See Grades). LATE WORK WILL NOT BE ACCEPTED. You will be able to view your homework grades in the CourseWare gradebook. Homework will NOT be accepted through email or in person. Homework must be submitted through CourseWare BEFORE the deadline.

Written Homework will be posted on Course Website. Students will scan the completed homework and upload them at CASA under “assignments” tab before the due date.

**Online Quizzes**

Online quizzes will be given through CourseWare. Please see the "Online Assignments" section on Courseware for open and close dates of each quiz. No quizzes will be reopened during the semester. You will have up to 20 attempts on each quiz. The highest grade will be used for your score. **Note that attending the online sessions can directly affect your quiz grades. Check the due dates on quizzes carefully; no make ups on quizzes.**
Required Reading

The departmental text will be available online through Courseware. Student have free access to CASA until the access code deadline. To have continuing access, purchase and enter the code by the deadline. Students will lose access to text book and quizzes if the code is not entered by the deadline. If a student misses assignments due to no access; no make ups!

List of discussion/lecture topics

Chapter 1  Limits and Continuity
1.1     A Review of Functions
1.2     An Intuitive Introduction to Limits
1.3     Definition of Limit and Arithmetic Rules
1.4     Continuity
1.5     The Intermediate Value Theorem
1.6     Limits of Trigonometric Functions and the Pinching Theorem

Chapter 2  Differentiation
2.1     The Definition of the Derivative
2.2     Derivatives of Polynomials and Trigonometric Functions
2.3     Differentiation Rules
2.4     Implicit Differentiation

Chapter 3  Applications of the Derivative
3.1     Related Rates
3.2     The Mean-Value Theorem
3.3     Intervals of Increase and Decrease
3.4     Extreme Values
3.5     Concavity and Points of Inflection
3.6     Curve Sketching

Chapter 4  The Transcendental Functions
4.1     Inverse Functions
4.2     The Exponential Function
4.3     Natural Logarithm Function
4.4     Inverse Trigonometric Functions
4.5     Hyperbolic Functions

Chapter 5  Further Applications of the Derivative
5.1     Optimization
5.2     Differentials
5.3     L’Hospital’s Rule
Chapter 6  Integration
6.1  The Definite Integral
6.2  The Fundamental Theorem of Calculus
6.3  Basic Integration Rules
6.4  Integration by Substitution