M408C Fall 2016
DIFFERENTIAL & INTEGRAL CALCULUS

PROF INFO
Professor: Kathy Davis    Phone: 471-0128
Office Hours: MW 11:50-12:35; Appointments MWF mornings
Office: RLM 9.138
Email: davis@math.utexas.edu
Web Site: http://www.ma.utexas.edu/users/davis/408C

GRADING
Exams 60% Three (in-TA session). See p2 for dates.
Quizzes 20% In TA Session. Alternate weeks; one dropped.
Final 20% Not cumulative; p2 for date. See CLIPS
Cheat Sheets Exams & Final only. One 8.5 by 11 sheet; any thing you want on it.
Make-Ups You can take one late quiz (not exam) if you tell us in advance (even same day).

GRADES
89.6-100 A
88.6-89.5 A-
79.6-88.5 B
78.6-79.5 B-
69.6-78.5 C
68.6-69.5 C-
59.6-68.5 D
Below F

TEXT
Stewart, Calculus, Early Transcendentals, Seventh Edition. The text will be used only for extra homework suggestions. You might want to split the purchase with someone else.

TOPICS
Chapters 2-6, roughly. Detailed syllabus:
http://www.ma.utexas.edu/academics/courses/syllabi/M408C.php

PREREQUISITES
Appropriate score on placement exams.

GOALS
This 408C assumes you need calculus at UT or at work. It emphasize professionalism:
Learning technical skills;
Showing coherent work on problems;
Studying: taking and reviewing notes;
Working with other people towards a common goal.

SSD
The University of Texas provides appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-6441 TTY. If you plan on using accomodations, you need to notify me EARLY in the semester, and reserve a room EARLY, or you'll lose your chance.
**Exam Dates**
E1 Thurs Sept 22
E2 Thurs Oct 13
E3 Thurs Nov 10

**Final Exam Dates**
10AM CLASS: Monday, December 12, 7:00-7:50 pm
11AM CLASS: Friday, December 9, 2:00-2:50 pm

**Other Important Dates**
Monday Sept 5  Labor Day; No Class
Nov 23-26  Thanksgiving Holiday
Dec 5  Last Class

**TA Info**
All your exam and quizzes are in your TA session. If you switch times, *I won't grade your exams.*
Talk to us if you must switch.

10-11 Class  MWF  RLM 4.102
TA:  PHONE:
EMAIL:
53425 TTh 12-1  ART 1.120
53430 TTh 4-5  RLM 5.104

11-12 Class  MWF  RLM 4.102
TA:  PHONE:
EMAIL:
53445 TTh 1-2  CPE 2.212
53450 TTh 5-6  NOA 1.102

**CalcLab**
We have CalcLab instead of TA office hours. To find hours and rooms, go to the CalcLab website:
https://www.ma.utexas.edu/academics/undergraduate/calculus-lab/

**Getting a Regrade**
You can ask for a regrade to correct things that you feel we missed, or graded unfairly.
*I will never lower your grade.*

**The Rules: Ignore the rules, I won't regrade your stuff**

0) Before asking for a regrade, you should compare your solutions with the online solutions
1) If you want regrades, you must take the exam/quiz in ink.
2) Mark the questions you want me to look at, and give the exam/quiz to us before or after class.
3) Don't ask 'look at everything I missed to give me extra points'
4) Ask for the regrade within about a four days after we give it back in TA session.
5) I'll bring the regraded paper to class with me, usually the next class day
**Computing your grade**

before final: $\alpha = \frac{.2 \times \text{Quiz Average} + .6 \times \text{Exam Average}}{.8}$

after final: $\beta = .8 \times \alpha + .2 \times \text{Final}$

Your average determines your grade: no special deals, no retakes, no curves.
You are responsible for knowing how you're doing at any time in the course.

You have to pick up your exams/quizzes in the TA session and KEEP THEM.

**Study Advice**

**Important: Best Advice**
Form a study group of other people about the same level as you.

1) Here's where to find study material:
   a) The problems in Stewart are too simple, so we have extra practice. For studying, you can start with Stewart but that isn't enough and your exam problems will be harder.
   b) Every week I post 14U problems with solutions. Because the course moves so quickly, you need to do these problems every night, after the lecture, or at the very least, every weekend. Solutions are posted, too!
   c) The homework has problems to practice you for the quizzes and exams. They don't have solutions; these are meant to be done in your TA session.

2) Here's a general plan for studying:
   a) Start with working problems. If you get stuck, check your notes to see whether I did a similar problem. If not, discuss it with your study pals. You can also take a picture of your work and email me. Before 8pm.
   b) If something seems wrong on the 14U problems, email me. Don't waste hours of your own time.
   c) Go to TA session to work the practice problems on the hw.
   d) Finally, go through your notes to see if there's anything you've missed. This is not a course in which you drill dozens of problems and then get you problems just like the drill. You need to do more than practicing problems; you need to study your notes, you need to think about the kinds of problems you've seen and you need to organize that in your mind. The YAPS are designed to help.

3) If you've had calculus before:
   a) Watch out for your algebra; it's easy to lose points.
   b) You need to show work. Anyone can get answers from Google; I want to see what you learned.
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Syllabus: M408C*
DIFFERENTIAL AND INTEGRAL CALCULUS
Text: Stewart, Calculus, Early Transcendentals, Seventh Edition

1 Functions and Models (Three Days)
   • 1.5 Exponential Functions
   • 1.6 Inverse Functions and Logarithms

2 Limits and Derivatives (Six Days)
   • 2.1 The Tangent and Velocity Problems
   • 2.2 The Limit of a Function
   • 2.3 Calculating Limits Using the Limit Laws
   • 2.4 The Precise Definition of a Limit
   • 2.5 Continuity
   • 2.6 Limits at Infinity; Horizontal Asymptotes
   • 2.7 Derivatives and Rates of Change
   • 2.8 The Derivative of a Function

3 Differentiation Rules (Eleven Days)
   • 3.1 Derivatives of Polynomials and Exponential Functions
   • 3.2 The Product and Quotient Rules
   • 3.3 Derivatives of Trigonometric Functions
   • 3.4 The Chain Rule
   • 3.5 Implicit Differentiation
   • 3.6 Derivatives of Logarithmic Functions
   • 3.7 Rates of Change in the Natural and Social Sciences (optional)
   • 3.8 Exponential Growth and Decay
   • 3.9 Related Rates
   • 3.10 Linear Approximations and Differentials
   • 3.11 Hyperbolic Functions (very quickly)

4 Applications of Differentiation (Eight Days)
   • 4.1 Maximum and Minimum Values
   • 4.2 The Mean Value Theorem
   • 4.3 How Derivatives Affect the Shape of a Graph
   • 4.4 Indeterminate Forms and L'Hospital's Rule
   • 4.5 Summary of Curve Sketching
   • 4.7 Optimization Problems
   • 4.9 Antiderivatives

5 Integrals (Five Days)
   • 5.1 Areas and Distances
   • 5.2 The Definite Integral
   • 5.3 The Fundamental Theorem of Calculus
   • 5.4 Indefinite Integrals and the Net Change Theorem
   • 5.5 The Substitution Rule

6 Applications of Integration (Four Days)
   • 6.1 Areas between Curves
   • 6.2 Volume
   • 6.3 Volumes by Cylindrical shells (optional)
   • 6.4 Work (optional)
   • 6.5 Average value of function (optional)