**M408D FALL 2018**

**SEQUENCES, SERIES, y MAS**

**PROF INFO**

**Professor:** Kathy Davis  
**Phone:** 471-0128  
**Office:** RLM 9.138  
**Office Hours:** MW12:00-12:45. Also appointments MWF mornings  
**Email:** davis@math.utexas.edu  
**Web Site:** http://www.ma.utexas.edu/users/davis/408d

**Grading**

- **Homework** 0% Not due, not collected, not graded
- **Exams** 50% Two exams in TA session. See p2 for dates
- **Quizzes** 25% Alternate Thurs in TA session; lowest dropped
- **Final** 25% Not cumulative; p2 for date.
- **Cheat Sheets** One 8.5 by 11 sheet; anything you want on it. Exams & Final only, not quizzes.
- **Make-Ups** You can take one late quiz (not exam) with advance notice.

**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

**Canvas**

Grades are posted on Canvas after each exam.  
Don't use Canvas to communicate with me; use my email above.

**Text**

Stewart, Calculus, Early Transcendentals, Eighth Edition, used only for extra homework. You can buy an online book. See the links on my site and in Canvas.

**Topics**

Chaps 7, 9, 11, 14, 15. Detailed syllabus p5

**PreReqs**

Appropriate score on placement exams.

**Goals & PreReqs**

**Goals:** This course emphasizes computational ability and geometric understanding in calculus. It isn’t a theorem/proof class, but it is the advanced class and it does move fast. Class notes are very important.

**Prereq:** one of: M408C, M408KL, M408NS

**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 accommodations, you need to notify me EARLY in the semester, and reserve a room EARLY, or you'll lose your chance.
**Final Exam**
10am class Monday Dec 17, 9:00-9:50am
11am class Friday Dec 14, 9:00-9:50am

**Exam Dates**
E1 Thurs Oct 4
E2 Thurs Nov 8

**Other Important Dates**
Wed Aug 29 Classes Start
Nov 21-24 Thanksgiving Break
Dec 10 Last Class Day

**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, even for just one day. *Your TA will give you their information in the first 7 days of class. Write it down.*

**10am Class TA Session Meets Here:**
53650 TTh 2-3 CPE 2.206
53655 TTh 4-5 CPE 2.210

**TA:**
**PHONE:**
**EMAIL:**

**11am Class TA Session Meets Here:**
53660 TTh 1-2 SZB 370
53665 TTh 3-4 WAG 214

**TA:**
**PHONE:**
**EMAIL:**

**TA Office Hours & CalcLab**
UT does 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. We will *never lower your grade.*

**The Rules: Ignore the rules, I won't regrade your stuff**
0) To get a regrade, you must take the exam/quiz in ink.
1) You can't get a regrade if you don't pick up your stuff
2) Compare your work with the online solutions.
3) Mark what you want me to look at, and give the exam/quiz to me in class. NOT MY OFFICE
4) Ask for the regrade within three MWF 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.

Ichiban Very Important Rule: Don't throw stuff away. I give second regrades before the final.
**Computing Your Grade**

before final: \( \alpha = \frac{.25 \times \text{Quiz Average} + .5 \times \text{Exam Average}}{.75} \)

after final: \( \beta = .75 \times \alpha + .25 \times \text{Final} \)

Your average determines your grade: no special deals, no retakes, no curves. UT considers these posted rules are legally binding.

I do extra regrades before the final, so you HAVE TO PICK UP your exams/quizzes in the TA session and KEEP THEM.

Exception from final if all your exams & quizzes are 100.00

**Study Advice**

If you've had calculus before:

a) Watch out for what's different. I do LOTS different.

b) Watch out for your algebra; it's easy to lose points.

c) You need to show work. Anyone can get answers from Google; I want to see what you learned.

Here's a general plan for studying:

a) Start with working my online 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.

Where to find study material:

a) The problems in Stewart are too simple, so it isn't enough and your exam problems will be harder.

b) Every week I post online 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.

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 problems: you need to think about the kinds of problems you've seen and you need to organize that in your mind. The online YAPS are designed to help.
## A General Overview Of What and When

Exam and Quiz Dates Are Fixed; Topics Vary

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7 Techniques of Integration (eight days)
  • Substitution Review
  • 7.1 Integration by Parts
  • 7.2 Trigonometric Integrals
  • 7.3 Trigonometric Substitution
  • 7.4 Integration of Rational Functions by Partial Fractions
  • 7.5 Strategy for Integration (use as reference with good problem set)
  • 7.8 Improper Integrals

9 Differential Equations (six days)
  • 9.1 Modeling with Differential Equations
  • 9.2 Direction Fields and Euler’s Method
  • 9.3 Separable Equations
  • 9.4 Models for Population Growth
  • 9.5 Linear Equations
  • 9.6 Predator-prey Systems (optional)

10 Parametric Equations and Polar Coordinates (four days)
  • 10.1 Curves Defined by Parametric Equations
  • 10.2 Calculus with Parametric Curves
  • 10.3 Polar Coordinates
  • 10.4 Areas and Lengths in Polar Coordinates
  • 10.5 Conic Sections (optional)
  • 10.6 Conic Sections in Polar Coordinates (optional)

11 Infinite Sequences and Series (twelve days)
  • 11.1 Sequences
  • 11.2 Series
  • 11.3 The Integral Test and Estimates of Sums
  • 11.4 The Comparison Tests
  • 11.5 Alternating Series
  • 11.6 Absolute Convergence and the Ratio and Root Tests
  • 11.7 Strategy for Testing Series
  • 11.8 Power Series
11.9 Representations of Functions as Power Series
11.10 Taylor and Maclaurin Series
11.11 Applications of Taylor Polynomials

14 Partial Derivatives (three days)
14.1 Functions of Several Variables
14.2 Limits and Continuity
14.3 Partial Derivatives
14.5 The Chain Rule

15 Multiple Integrals (five days)
15.1 Double Integrals over Rectangles
15.2 Double Integrals over General Regions
15.3 Double Integrals in Polar Coordinates