**M408D SPRING 2016**

**SEQUENCES, SERIES, Y MAS**

**PROF INFO**

**Professor:** Kathy Davis  
**Office:** RLM 9.138  
**Office Hours:** M12-12:45; W 1-1:45. Other times by appt  
**Email:** davis@math.utexas.edu  
**Web Site:** http://www.ma.utexas.edu/users/davis/408d

**GRADING**

- **Exams** 60% Three in-class exams. See p2 for dates  
- **Quizzes** 20% Weekly; one dropped.  
- **Final** 20% 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) for documented illness or if you tell us in advance.

**GRADES**

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**TEXT**

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

**TOPICS**

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

**GOALS & PREREQUISITES**

**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 Dates**
MWF 10:00–11:00: Wednesday, May 11, 9:00-10:00am
MWF 11:00–12:00: Saturday, May 14, 9:00-10:00am
**Plan Ahead - No Finals Before May 11.**

**Exam Dates**
E1 Thurs Feb 11
E2 Thurs Mar 3
E3 Thurs April 21

**Other Important Dates**
January 20 Classes Begin
March 14-19 Spring Break
May 6 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.

MWF 10:00–11:00 Class: Ask your TA to fill in details
**TA:**
**PHONE:**
**Office:**
**Office Hours:**
**Email:**
53020 TTH 1-2 ECJ 1.204
53025 TTH 5-6 NOA 1.102

MWF 11-12 Class: Ask your TA to fill in details
**TA:**
**PHONE:**
**Office:**
**Office Hours:**
**Email:**
53030 TTH 8:30-9:30 CPE 2.210
53035 TTH 5-6 CPE 2.212

**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) To get a regrade, you must have taken 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'
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: \( \beta = .8 \alpha + .2 \times \text{Final} \)

You are responsible for keep track of how you're doing at any time in the course. People who are on a borderline after the final can get their old exams regraded.

There are no other deals, no retakes, no curves. Your average determines your grade.

**STUDY 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.
   d) Look at the YAPS: these are designed to help you organize the material for the quizzes and exams.
   e) Finally, go through your notes. Every problem I do in class is another problem you can use to practice, and there is a worked answer.

   Be aware: 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.

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) Read your notes and the YAPS.
### A General Overview Of What and When

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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 Iterated Integrals
  - 15.3 Double Integrals over General Regions
  - 15.4 Double Integrals in Polar Coordinates
  - 15.5 Applications of Double Integrals (optional)
  - 15.10 Change of Variables in Multiple Integrals (if time permits)
- Back to course listing