MA142—Section 12

Instructor

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Meeting Times

Lectures:	**TTh** 5:00 PM – 6:15 PM	LeConte 113
Problem Sessions:	**M** 4:40 PM – 5:30 PM	LeConte 121
Computer Labs:	**W** 4:40 PM – 5:30 PM	LeConte 102
Office Hours:	**TTh** 2:00 PM – 5:00 PM	LeConte 307

Teaching Assistant

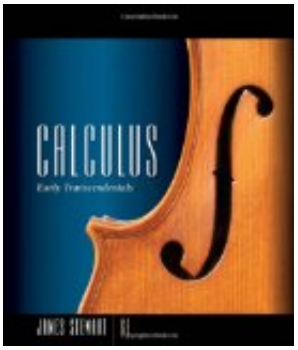
Laura McCormick
Office Hours: MT 10.15 AM -- 11.15 AM and MTh 4.00 PM -- 4.30 PM in LeConte 400K
e-mail: mccormlm at email dot sc dot edu

Prerequisites

Qualifications through placement or a grade of **C** or better in MATH 141. The deadline to drop/add is Friday, January 13th. The first day in which a "W" grade is assigned is therefore Saturday, January 14th. The last day to obtain a "W" grade or to elect a pass/fail grade is Monday, February 27th. The first day in which a "WF" grade is assigned is therefore Tuesday, February 28th.

Text

Calculus. Early Transcendentals by James Stewart. **Thompson Brooks/Cole** 2008 (sixth edition)



[Calculus: Early Transcendentals (Stewart's Calculus Series) (See all Calculus Books)]

Course Structure and Grading Policies

Homework problems will be assigned at the end of each lecture. They might be collected and graded. In that case, the grade will count as a quiz. Your final score for the course will be computed as follows:

- Computer Labs: 15% of the course grade.
- Quizzes: 15% of the course grade. **Only the 10 best scores are counted.** A ten-minute quiz will be given during the problem session. There will be no make-up quizzes, since only the best 10 grades count towards the course grade.
- Midterms: each test counts 15%, for a total of 45% of the course grade.There will be three in-class midterm exams scheduled as follows:

Test #	Date
1	Tue, Jan 31
2	Thu, Feb 23
3	Tue, Mar 27

  No make-up tests will be given. Only medical, death in the family, religious or official USC business reasons are valid excuses for missing a test and must be verified by letter from a doctor, guardian or supervisor to the instructor.

- Final exam: 25% of the course grade. The final exam is scheduled on Tuesday, April 26th, at 5:30 PM.

The course grade will be determined as follows:

GRADE	RANGE
A	90%-100%
B+	85%-89%
B	80%-84%
C+	75%-79%
C	70%-74%
D+	65%-69%
D	60%-64%
F	below 60%

ATTENDANCE POLICY: Attendance is mandatory. Penalties to your final grade apply as follows:

- Students missing four sessions without a valid excuse will have their final grade lowered by half a letter grade (e.g. from C to D+).
- Students missing six sessions without a valid excuse will have their final grade lowered by a full letter grade (e.g. from B to C)
- Students missing eight sessions without a valid excuse will have their final grade lowered by a letter-and-a-half (e.g. from A to C+)

Further Information

Some useful information:

- Remember to change your e-mail address on Blackboard if necessary [blackboard.sc.edu]
- **ADA**: If you have special needs as addressed by the *Americans with Dissabilities Act* and need any assistance, please notify the instructor immediately.
- The Math Tutoring Center is a free tutoring service for MATH 111, 115, 122, 141, 142, 170, 221, 222, and 241. The center also maintains a list of private tutors for math and statistics. The center is located in LeConte, room 105, and the schedule is available at the Department of Mathematics website (www.math.sc.edu). No appointment is necessary.
- The **Student Success Center** and one of four **Academic Centers for Excellence (ACE)** are on the mezzanine level of the Thomas Cooper Library and can be reached by phone at (803) 777-0684 or by going online at www.sc.edu/academicsuccess Other ACE locations around campus make access to these resources easy (Sims Hall, Bates House, Columbia Hall). The centers are at the crossroads of services and information about many special resources for stucents, including advice on developing successful study habits, time management, and effective learning strategies as well as availability of tutoring.
- The Supplemental Instructor for this course is Matthew Brewer. Matthew will be holding three sessions a week in the Humanities Building, room 316. His schedule is as follows:

Mon 4.00 PM
Tue 8.00 PM
Wed 9.00 PM

Learning Outcomes

A student who successfully completes Calculus II (MATH 142) should continue to develop as an independent learner with the ability to approach problems from a conceptual viewpoint, to utilize more than one idea in a single problem, and to apply appropriate calculus skills to problems in context. In particular, the successful student will master concepts and gain skills needed to solve problems related to:

- Techniques of integration
  - Substitution
  - Integration by parts
  - Trigonometric integrals and trigonometric substitution
  - Partial fractions
- Improper integrals
- Applications of integration in Geometry, Science and Engineering
  - Area
  - Volume by disks and shells
  - Average value
- Convergence of sequences and series
  - $latex n$—th term test (for divergence)
  - Integral test
  - Comparison test
  - Ratio test
  - Root test

    - Alternating series test
- Power series
- Taylor and Maclaurin series
- Application of Taylor polynomials
- Polar coordinates
- Area and length in polar coordinates

HW Assignments, Quizzes, Exams

- **Tue Jan 10**: 5.3. The Fundamental Theorem of Calculus [p.388 #7--10, 13, 14, 19--31, 35--40, 53--56]
- **Wed Jan 11**: [Quiz#1]
- **Thu Jan 12**: 5.5. The Substitution Rule (**HW from today is due on Wed Jan 18, and counts as Quiz#2**) [p.406 #1--16, 19, 21--26, 28--32, 34, 36, 37, 40, 42, 45, 51--55, 58]
- **Tue Jan 17**: 6.1 & 6.2. Area and Volume [p.420 #1--28; p.430 #1--18]
- **Wed Jan 18**: [Quiz#2] [Quiz#3]
- **Thu Jan 19**: 6.3. Volume by cylindrical shells [p.436 #3--7, 10--14, 21]
- **Tue Jan 24**: 6.5. The mean-value Theorem [p.445 #1--10, 13, 14]
- **Wed Jan 25**: [Quiz#4]
- **Thu Jan 26**: 7.1. Integration by parts [p.457 #1, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 30, 32, 34, 36, 38]
- **Tue Jan 31**: First Midterm. Chapters 5 and 6 [Practice Test]
- **Wed Feb 01**: [Quiz#5]
- **Thu Feb 02**: 7.2. Trigonometric Integration [p.465 #1--48, 55, 57, 58, 61--64]
- **Tue Feb 07**: 7.3. Trigonometric substitutions [p.472 #4--29]
- **Wed Feb 08**: [Quiz#6]
- **Thu Feb 09**: 7.4. Integration of rational functions by partial fraction decomposition [p.481 #7--38]
- **Tue Feb 14**: 7.8. Improper integrals [p.515 #5--40]
- **Wed Feb 15**: [Quiz#7]
- **Thu Feb 16**: 7.5. Putting it all together: Integration Techniques.
- **Tue Feb 21**: 11.1. Sequences [p.684 #3--46]
- **Wed Feb 22**: [Quiz#8]
- **Thu Feb 23**: Second Midterm. Chapter 7 [Practice Test]
- **Tue Feb 28**: 11.2. Introduction to series [p.694 #9, 11-40]
- **Wed Feb 29**: [Quiz#9]
- **Thu Mar 01**: 11.3. The Integral test [p.703 #3--26]
- **Tue Mar 13**: 11.4. The Comparison test [p.709 #3--32]
- **Wed Mar 14**: [Quiz#10]
- **Thu Mar 15**: 11.5-11.6. Absolute convergence. The ratio and root tests [p.713 #2--20, p.719 #2--28]
- **Tue Mar 20**: 11.8. Power series [p.727 #3-28]
- **Wed Mar 21**: [Quiz#11]
- **Thu Mar 22**: 11.9. Functions as Power Series [p.733 #3--12, 15--17]
- **Tue Mar 27**: Third Midterm. Chapter 11 (sections 1--9) [Review: Convergence of Series]
- **Wed Mar 28**: [Quiz#12]
- **Thu Nov 29**: 11.10. Taylor and MacLaurin Series I [p.746 #5--20]
- **Tue Apr 03**: 11.10. Taylor and MacLaurin Series II
- **Wed Apr 04**: [Quiz#13]
- **Thu Apr 05**: 10.3. Polar coordinates [p.647 #1ab, 3ab, 5i, 7--12, 21-

-26, 29--48]
- **Tue Apr 10**: 10.4
- **Wed Apr 11**: [Quiz#14]
- **Thu Apr 12**: Review
- **Tue Apr 17**: Review
- **Mon Apr 18**: Review
- **Tue Apr 19**: Review

- **Tue Apr 26**: Final Exam. Chapters 5, 6, 7, 10 and 11