MA141—Spring 2013

Sections 011 and 012

Instructor

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Teaching Assistant

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Meeting Times and Office Hours

Lectures:		**MWF**	11:15 AM - 12:05 PM	LeConte 412
Problem Sessions:	Section 011	**ThT**	9:30 AM - 10:20 AM	LeConte 405
	Section 012	**ThT**	11:00 AM - 11:50 AM	LeConte 121
Computer Labs:	Section 011	**TTh**	9:30 AM - 10:20 AM	LeConte 303A
	Section 012	**TTh**	11:00 AM - 11:50 PM	LeConte 303A
Office Hours:		**T**	3:00 PM - 6:00 PM	
		F	2:00 PM - 5:00 PM	LeConte 307
		TBA	TBA	LeConte 122

Important deadlines you need to know

The semester begins Monday, January 14th, and ends Monday, April 29th.

The deadline to drop/add and the last day to change credit/audit is Friday, January 18th. The first day in which a "W" grade is assigned is therefore Saturday, January 19th.

The last day to obtain a "W" grade or to elect a pass/fail grade is Monday, March 4th. The first day in which a "WF" grade is assigned is therefore Tuesday, March 5th.

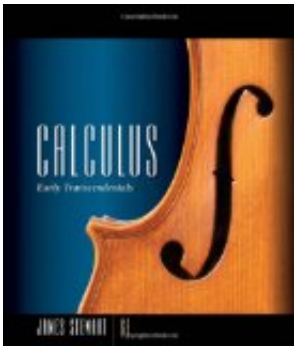
Prerequisites

Qualifications through Placement code MA4-9 or MD0-9 required: earned by grade of **C** or better in MATH 112, 115, 116 or by PreCalculus Placement Test.

Text

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

edition)



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

You will be required to use Enhanced WebAssign, the online homework system that accompanies your textbook, for my course. I strongly encourage you to purchase an access code that provides you access to Enhanced WebAssign and the eBook rather than a traditional hard copy of the text. (If you choose to purchase a hard copy, you will need to purchase the bundle that comes with the Enhanced WebAssign code.)

Course Structure and Grading Policies

Your final score for the course will be computed as follows:

```
F = 0.1 * (HW + Q + CL + ME1 + ME2 + ME3 + ME4) + 0.3 * FE
```

- **Homework assignments**: (up to 100 points) 10% of the course grade. Homework problems have been assigned for each lecture (you can see them at the end of this page, under **Lesson Plan**). A selection of those problems are posted on WebAssign on the day of the lecture, and will be graded. You will have until the end of the next class day to complete the assignment (e.g. what is posted on Monday is due on Wednesday at 11:59PM; what is posted on Friday is due on Monday at 11:59PM)

  In order to sign up for your section of the course on WebAssign, visit www.webassign.net and click on [**I have a Class Key**]. The class key for these sections is

  sc 6795 3327

  Click [here] to retrieve further registration instructions.

- **Quizzes**: (up to 100 points) 10% of the course grade. **Only the 10 best scores have an impact on your course grade.** A 15-minute quiz will be given in recitation every Tuesday, except on the day after a midterm exam, or the last week of classes. At the end of the course, you will have taken at least 10 quizzes. No make-up quizzes will be given. Only medical, death in the family, religious or official USC business reasons are valid excuses for missing a quiz and must be verified by letter from a doctor, guardian or supervisor to the instructor.

- **Computer Labs**: (up to 100 points) 10% of the course grade.
- **Midterm Exams**: (up to 100 points each) 40% of the course grade (10% each midterm). There will be four in-class midterm exams scheduled as follows:

Test #	Date
1	Wed, Jan 30
2	Mon, Feb 18
3	Fri, Mar 22
4	Fri, Apr 12

  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**: (up to 100 points) 30% of the course grade. The final exam is scheduled on Saturday, May 4th from 9:00 AM to 11:30 AM. No make-up final exam will be given. Only medical, death in the family, religious or official USC business reasons are valid excuses for missing the Final Exam, and must be verified by letter from a doctor, guardian or supervisor to the instructor.

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 5 points (half a letter grade)
- Students missing six sessions without a valid excuse will have their final grade lowered by 10 points (a full letter grade)
- Students missing eight sessions without a valid excuse will have their final grade lowered by 15 points (a letter-and-a-half)

Further Information

- Some material will be stored in Dropbox. In that case, you will need an account to retrieve it. If you do not have one already, sign in through [this link] with your academic e-mail address to receive a base 4GB storage, plus an extra 500MB, free of charge.

- 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.
- **Math Tutoring Center:** 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.
- **ACE centers:** Tutoring for 100-Level Math is offered Monday through Thursday 7-9pm in the ACE centers in Bates Hall and Columbia Hall and Monday through Thursday 6-9pm in Sims Hall. No appointment is needed. You may contact the Student Success Center at 803-777-0684 and tutoring@sc.edu with additional questions.
- **Supplemental Instruction:** SI is available for this course to assist you in better understanding the course material. The SI program provides peer-facilitated study sessions led by qualified and trained undergraduate SI leaders who attend classes with students and encourage students to practice and discuss course concepts in sessions. Sessions are open to all students who want to improve their understanding of the material, as well as their grades. SI sessions will focus on the most recent material covered in class. Each SI leader holds three sessions per week. Your SI leader is Alexandra Houck and you can find her schedule online at www.sa.sc.edu/supplementalinstruction/. You can contact the Student Success Center at (803) 777-0684 if you have questions about the SI session schedule.

Learning Outcomes

A student who successfully completes Calculus I (MATH 141) 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:

- Handling Functions
    - Functions and their graphs
    - Finding limits graphically, numerically and analytically
    - Continuity and one-sided limits
    - Infinite limits and limits at infinity
- Differentiation
    - The derivative and rates of change
    - Basic differentiation rules
        - Polynomials
        - Exponentials
        - Trigonometric functions
        - Logarithmic functions
        - The product and quotient rule
        - Chain rule
    - Implicit differentiation
    - Applications of differentiation
        - Related rates

        - Extrema on an interval
        - Mean Value Theorem
        - Curve sketching
        - L'Hospital's Rule
        - Optimization problems
- Integration
    - Antiderivatives and indeterminate integrals
    - Definite Integrals
    - The Fundamental Theorem of Calculus
    - Basic computation of area between curves
    - Basic computation of volume of solids of revolution

Lesson plan, HW Assignments, Quizzes, Exams

- **First part---Functions; graphs, limits and continuity**
    - **Mon Jan 14:** 1.2: Intro to Functions [pp.20--22: 1abcde, 2abcef, 5, 6, 7, 27, 28, 30, 38, 41, 42]
    - **Tue Jan 15:** Appendix D: Trigonometry
    - **Wed Jan 16:** 1.3: New functions from old functions [pp.43--44: 1, 2, 3, 4, 5, 31, 32, 33, 34, 35, 36, 37, 38, 41, 42]
    - **Fri Jan 18:** 1.5 and 1.6: Exponential and Logarithmic Functions [p.58: 3, 4, 7, 8, 9, 10, 15, 17, 18. p.71: 33--39, 47--52]
      (this assignment is due on Tuesday Jan 22 and counts as [Quiz 02])
    - **Tue Jan 22:** [Quiz 01] [Quiz 02]
    - **Wed Jan 23:** 2.2 and 2.3: Limits [p.97: 4, 5, 6, 25, 26, 27, 29, 32, 34a. p.106: 1, 3--9, 11--27]
    - **Fri Jan 25:** 2.5: Continuity [pp.128: 3a, 4, 10--13, 16--18, 20, 35, 37, 39, 41, 42]
    - **Mon Jan 28:** 2.6: Limits at infinity [p.141: 15--26, 29--33, 39--43]
    - **Tue Jan 29:** Review for First midterm
    - **Wed Jan 30:** First Midterm---sections 1.2, 1.3, 1.5, 1.6, 2.2, 2.3, 2.5 and 2.6
- **Second Part: Introduction to Differentiation**
    - **Fri Feb 01:** 2.7 and 2.8: Intro to derivatives [p.150 :4ab, 5--8, 10ab, 21, 25--30]
    - **Mon Feb 04:** 3.1: Derivatives of Polynomials and Exponential functions [p.180: 3--30, 33, 34, 45, 52, 53, 54]
    - **Tue Feb 05:** [Quiz 03]
    - **Wed Feb 06:** 3.2: The Product and Quotient Rule [p.187: 1, 2, 7, 8, 9, 10, 11, 13, 14, 15, 16, 19, 21, 22, 26, 29, 31, 52]
    - **Fri Feb 08:** 3.3: Derivatives of Trigonometric functions [p.195: 1--6, 9--14, 21, 23, 24, 25a, 34]
    - **Mon Feb 11:** 3.4: The Chain Rule [p.203: 1---21, 23, 25--30, 32--34, 36, 37, 51--54, 62]
    - **Tue Feb 12:** [Quiz 04]
    - **Wed Feb 13:** 3.5: Implicit Differentiation [p.213: 1--30,

63, 64a, 65, 66]
    - **Fri Feb 15:** 3.6: Derivatives of Logarithmic functions [p.220: 2--22, 27--30, 33, 34, 37--50]
    - **Mon Feb 18:** Second Midterm---sections 2.7, 2.8, 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6
- **Third Part: Applications of Differentiation**
    - **Tue Feb 19:** Appendix B---Coordinate Geometry and Lines
    - **Wed Feb 20:** 3.9: Related Rates I [p.245: 1--33]
    - **Fri Feb 22:** 3.9: Related Rates II
    - **Mon Feb 25:** 4.1: Maximum and Minimum values [p.277: 6, 8, 10, 29--44, 47--62]
    - **Tue Feb 26:** [Quiz 05]
    - **Wed Feb 27:** 4.2: The Mean Value Theorem
    - **Fri Mar 01:** 4.3: First and Second Derivative Test [p.295: 5, 6, 7, 9--22, 33--50]
    - **Mon Mar 04:** 4.4: L'Hopital's Rule [p.304: 5--64]
    - **Tue Mar 05:** [Quiz 06]
    - **Wed Mar 06:** Curve Sketching [p.314: 1--27]
    - **Fri Mar 08:** 4.5: Optimization Problems I
    - **Mon Mar 18:** 4.7: Optimization Problems II
    - **Tue Mar 19:** [Quiz 07]
    - **Wed Mar 20:** 4.7: Review for Third midterm
    - **Fri Mar 22:** Third Midterm---sections 3.9, 4.1, 4.2, 4.3, 4.4, 4.5 and 4.7
- **Fourth Part: Introduction to Integration**
    - **Mon Mar 25:** 4.9: Antiderivatives [p.345: 1--15, 18, 18, 21]
    - **Tue Mar 26:** [Quiz 08]
    - **Wed Mar 27:** 5.4: Indefinite integrals [p.397: 5--18]
    - **Fri Mar 29:** Appendix E: Sigma notation [p.A38: 1--36, 43--46]
    - **Mon Apr 01:** 5.1 and 5.2: Intro to Definite Integrals
    - **Tue Apr 02:** [Quiz 09]
    - **Wed Apr 03:** 5.3: The Fundamental Theorem of Calculus [p.388: 7--12, 19--33, 35, 36, 39, 40, 65, 66, 68, 74]
    - **Fri Apr 05:** 5.5: The Substitution Rule I [p.406: 1--46]
    - **Mon Apr 08:** 5.5: The Substitution Rule II
    - **Tue Apr 09:** [Quiz 10]
    - **Wed Apr 10:** Review for Fourth Midterm
    - **Fri Apr 12:** Fourth Midterm---sections 4.9, 5.1, 5.2, 5.3, 5.4 and 5.5
- **Fifth Part: Applications of Integration**
    - **Mon Apr 15:** Appendix G: The Logarithm defined as an integral
    - **Tue Apr 16:** [Quiz 11]
    - **Wed Apr 17:** 6.1: Area between curves I
    - **Fri Apr 19:** 6.1: Area between curves II
    - **Mon Apr 22:** 6.2: Volumes
- **Final Stretch:**
    - **Tue Apr 23:** Review for Final Exam (1/4) [Practice Test #1]
    - **Wed Apr 24:** Review for Final Exam (2/4)
    - **Fri Apr 26:** Review for Final Exam (3/4) [Practice Test #2]

- **Mon Apr 29:** Review for Final Exam (4/4)
- **Sat Mar 04:** 9:00 AM-11:30 AM
  Comprehensive exam---Chapters 1, 2, 3, 4 and 5