MATH 142. Section 002

Instructor

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Meeting Times

Lectures:	**MTWTh** 10:30 AM – 12:45 PM	LeConte 115
	TTh 3:30 PM – 4:45 PM	LeConte 115
Computer Labs:	**MW** 3:30 PM – 4:45 PM	LeConte 102
Office Hours:	**MTWTh** 1:00 PM – 3:00 PM	LeConte 307
	MTWTh 5:00 PM – 6:00 PM	LeConte 122A

Lab Assistant

John Schulte
Office Hours: MTWTh 5:00 PM–6:00 PM in LeConte 122A
e-mail: schultej_at_math_dot_sc_dot_edu

Important deadlines you need to know

The semester begins Monday, July 2nd, and ends Wednesday, August 1st.

The deadline to drop/add and the last day to change credit/audit is Tuesday, July 3rd. The first day in which a "W" grade is assigned is therefore Wednesday, July 4th.
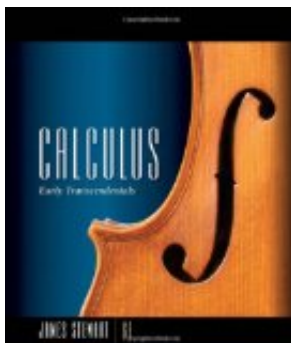
The last day to obtain a "W" grade or to elect a pass/fail grade is Friday, July 13th. The first day in which a "WF" grade is assigned is therefore Saturday, July 14th.

Prerequisites

Qualifications through placement or a grade of **C** or better in MATH 141.

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

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

$$F = 0.15 * (HW + Q + CL + ME) + 0.25 * FE$$

- **Homework assignments**: (up to 100 points) 15% 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 following day to complete the assignment (e.g. what is posted on Tuesday morning, is due on Wednesday at 11:59PM)

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

  ## sc 5093 6118

  Click [here] to retrieve further registration instructions.

- **Quizzes**: (up to 100 points) 15% of the course grade. **Only the 10 best scores have an impact on your course grade.** A 10-minute quiz will be given in class every morning session, except on the day of the midterm, the next day, and the last week of classes. At the end of the course, you will have taken 12 quizzes. There will be no make-up quizzes, since only the best 10 grades count towards the course grade.
- **Computer Labs**: (up to 100 points) 15% of the course grade.
- **Midterm Exam**: (up to 100 points) 15% of the course grade. There will be one in-class midterm exam scheduled on Wednesday July 11th, during the morning session.

  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) 25% of the course grade. The final exam is scheduled on Friday, August 3$^{\text{rd}}$ from 10:30 AM to 12:45 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

- 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.

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
    - n-th term test (for divergence)
    - Integral test
    - Comparison test
    - Ratio test
    - Root test
    - Alternating series test
- Power series
- Taylor and Maclaurin series
- Applications of Taylor polynomials
- Polar coordinates
- Area and length in polar coordinates

Lesson plan, HW Assignments, Quizzes, Exams

- Week #1
    - (Mon Jul 02 | morning session)
      Discussion of syllabus and different policies.
      5.3. The Fundamental Theorem of Calculus
      [p.388 #7--10, 13, 14, 19--31, 35--40, 53--56]
    - (Mon Jul 02 | evening session)
      MAPLE lab
    - (Tue Jul 03 | morning session)
      Review of lesson 5.3 **[Quiz #01]**
      5.5. The Substitution Rule
      [p.406 #1--16, 19, 21--26, 28--32, 34, 36, 37, 40, 42, 45, 51--55, 58]
    - (Tue Jul 03 | evening session)
      6.1-6.2. Area and Volume
      [p.420 #1--28; p.430 #1--18]
    - (Thu Jul 05 | morning session)
      Review of lessons 5.5, 6.1 and 6.2 **[Quiz #02]**
      6.3. Volume by cylindrical shells
      [p.436 #3--7, 10--14, 21]
    - (Thu Jul 05 | evening session)
      6.5. The mean-value Theorem

[p.445 #1--10, 13, 14]
- Week #2
  - (Mon Jul 09 | morning session)
    Review of lessons 6.3 and 6.5 **[Quiz #03]**
    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]
  - (Mon Jul 09 | evening session)
    MAPLE lab
  - (Tue Jul 10 | morning session)
    Review of lesson 7.1 **[Quiz #04]**
    7.2. Trigonometric Integration
    [p.465 #1--48, 55, 57, 58, 61--64]
  - (Tue Jul 10 | evening session)
    Exam Review
  - (Wed Jul 11 | morning session)
    [Midterm exam]
    Chapters 5, 6 and sections 7.1, 7.2
    [Practice Test]
    The use of formula sheets is not guaranteed in the midterm exam.
    Prepare yourself for the test with that in mind
  - (Wed Jul 11 | evening session)
    MAPLE lab
  - (Thu Jul 12 | morning session)
    7.3. Trigonometric substitutions
    [p.472 #4--29]
  - (Thu Jul 12 | evening session)
    7.4. Integration of rational functions by partial fraction decomposition
    [p.481 #7--38]
- Week #3
  - (Mon Jul 16 | morning session)
    Review of lessons 7.3 and 7.4 **[Quiz #05]**
    7.8. Improper integrals
    [p.515 #5--40]
  - (Mon Jul 16 | evening session)
    MAPLE lab
  - (Tue Jul 17 | morning session)
    Review of lesson 7.8 **[Quiz #06]**
    11.1. Sequences
    [p.684 #3--46]
  - (Tue Jul 17 | evening session)
    11.2. Introduction to series
    [p.694 #9, 11-40]
  - (Wed Jul 18 | morning session)
    Review of lessons 11.1 and 11.2 **[Quiz #07]**
    11.3. The Integral test
    [p.703 #3--26]
  - (Wed Jul 18 | evening session)
    MAPLE lab

- (Thu Jul 19 | morning session)
  Review of lesson 11.3 **[Quiz #08]**
  11.4. The Comparison test
  [p.709 #3--32]
- (Thu Jul 19 | evening session)
  11.5-11.6. Absolute convergence. The ratio and root tests
  [p.713 #2--20, p.719 #2--28]
- Week #4
  - (Mon Jul 23 | morning session)
    Review of lessons 11.4, 11.5 and 11.6 **[Quiz #09]**
    11.8. Power series
    [p.727 #3-28]
  - (Mon Jul 23 | evening session)
    MAPLE lab
  - (Tue Jul 24 | morning session)
    Review of lesson 11.8 **[Quiz #10]**
    11.9. Functions as Power Series
    [p.733 #3--12, 15--17]
  - (Tue Jul 24 | evening session)
    11.10. Taylor and MacLaurin Series I
    [p.746 #5--20]
  - (Wed Jul 25 | morning session)
    Review of lessons 11.9 and 11.10 **[Quiz #11]**
    11.10. Taylor and MacLaurin Series II
    [HW]
  - (Wed Jul 25 | evening session)
    MAPLE lab
  - (Thu Jul 26 | morning session)
    Review of lesson 11.10 **[Quiz #12]**
    10.3. Polar coordinates
    [p.647 #1ab, 3ab, 5i, 7--12, 21--26, 29--48]
  - (Thu Jul 26 | evening session)
    10.4. Polar coordinates: area and length.
    [HW]
- Week #5
  - (Mon Jul 30 | morning session)
    Review of lessons 10.3 and 10.4
    10.1. Curves defined by parametric equations
    [HW]
  - (Mon Jul 30 | evening session)
    MAPLE lab
  - (Tue Jul 31 | morning session)
    Review (1/3) []
  - (Tue Jul 31 | evening session)
    Review (2/3) []
  - (Wed Aug 01 | morning session)
    Review (3/3) []
  - (Wed Aug 01 | evening session)
    MAPLE lab
  - (Fri Aug 03 | morning session)
    [Final Exam]

Chapters 5, 6, 7, 10 and 11.
The use of formula sheets is not guaranteed in the final exam.
Prepare yourself for the test with that in mind.