MIDDLE TENNESSEE STATE UNIVERSITY  
DEPARTMENT OF MATHEMATICAL SCIENCES  
Math 1910  Calculus I  Fall 2013  
Monday, August 26 – Wednesday, December 4

Section 002  MWF  11:30 – 12:25 pm KOM 222
            >>>>>  T  11:20 – 12:15 pm

Instructor: Dr. J. Angela Hart Murdock  Office Hours:  MW 10:15 -11:15 am and 1:30-2:45pm
Office Phone: 494-8994  T  9 - 9:30 am, 10:45-11:15 am
Office: KOM 260  R  9 - 9:30 am, 10:45-11:15 am,  
E-mail: Julie.Murdock@mtsu.edu  and 1-3:15 pm
  Web site: http://capone.mtsu.edu/amurdock/

Office Hours: MW 10:15 -11:15 am and 1:30-2:45pm

Required Text: Calculus Early Transcendentals, by Briggs and Cochran Custom Edition for MTSU  

Online Component: Access to www.mypearsonlab.com/  Course ID: murdock71088

Recommended Calculator: TI-83 or TI-84 Plus (You may not use CAS (College Algebra System) 
calculators. i.e. you may not use TI-89, TI-92, TI-Nspire) Also, you may not use cell phones, PDA’s, etc. 
in place of a hand-held calculator.

<table>
<thead>
<tr>
<th>Grading Policy</th>
<th>Grade Components</th>
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<tbody>
<tr>
<td>90 - 100%</td>
<td>Online Homework 150 points</td>
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<tr>
<td>80 - 89%</td>
<td>Quizzes (At least twelve, best ten grades will be averaged) 250 points</td>
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<tr>
<td>70 - 79%</td>
<td>Tests (4 x 100 pts) 400 points</td>
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<tr>
<td>60 - 69%</td>
<td>Final Exam 200 points</td>
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Make-up Policy: There are no make-up opportunities for quizzes. If you are late or absent for a quiz, the 
quiz will be marked as a zero. Make-up examinations may be approved for tests but only for extreme 
extenuating circumstances beyond the student’s control.

Attendance Policy: Regular attendance is expected. A sign in sheet is passed around the room at the 
beginning of class.

Prerequisites: MATH 1730 or equivalent. Familiarity with graphing calculators (TI-83, 84, etc) is required.

COURSE REQUIREMENT: In order to complete this course successfully, the learner is required to:

  a. Attend class lectures
  b. Participate in class activities
  c. Read and study class assignments
  d. Solve assigned problems sets
  e. Successfully complete quizzes and tests
  f. Use technology where appropriate.

CHAPTERS/SECTIONS:  
Chapter 2:  2.1-2.7  
Chapter 3:  3.1-3.10  
Chapter 4:  4.1-4.4, 4.6-4.8  
Chapter 5:  5.1-5.5
LEARNING OUTCOMES:
Upon completion of the course, the student will be able to:
1. interpret a function from an algebraic, numerically, graphical and verbal perspective and extract information relevant to the phenomenon modeled by the function.
2. verify the value of the limit of a function at a point using the definition of the limit.
3. calculate the limit of a function at a point numerically and algebraically using appropriate techniques including l’Hospital’s rule.
4. find points of discontinuity for functions and classify them.
5. understand the consequences of the intermediate value theorem for continuous functions.
6. interpret the derivative of a function at a point the as the instantaneous rate of change in the quantity modeled and state its units.
7. interpret the derivative of a function at a point as the slope of the tangent line and estimate its value from the graph of a function.
8. sketch the graph of the derivative from the given graph of a function.
9. given a table of function values, approximate the value of the derivative at a point using the forward difference quotient and the centered difference quotient.
10. compute the value of the derivative at a point algebraically using the (limit) definition.
11. derive the expression for the derivative of elementary functions from the (limit) definition.
12. be able to show whether a function is differentiable at a point.
13. compute the expression for the line tangent to a function at a point.
14. interpret the tangent line geometrically as the local linearization of a function.
15. compute the expression for the derivative of a function using the rules of differentiation.
16. compute the expression for the derivative of a composite function using the chain rule of differentiation.
17. differentiate a relation implicitly and compute the line tangent to its graph at a point.
18. differentiate exponential, logarithmic, and trigonometric and inverse trigonometric functions.
19. obtain expressions for higher order derivatives of a function using the rules of differentiation.
20. interpret the value of the first and second derivative as measures of increase and concavity of a functions.
21. compute the critical points of a function on an interval.
22. identify the extrema of a function on an interval and classify them as minima, maxima or saddles using the first derivative test.
23. use the differential to determine the error of approximations.
24. understand the consequences of Rolle’s theorem and the Mean Value theorem for differentiable functions.
25. find the anti-derivative of elementary polynomials, exponential, logarithmic and trigonometric functions.
26. interpret the definite integral geometrically as the area under a curve.
27. construct a definite integral as the limit of a Riemann sum.
28. approximate a definite integral using left sum, right sum, midpoint and trapezoidal rules.
29. interpret the indefinite integral as a definite integral with variable limit(s).
30. interpret differentiation and anti-differentiation as inverse operations (Fundamental Theorem of Calculus, part 1).
31. interpret the anti-derivative of a definite integral with variable limit and implement this expression on graphing platforms.
32. evaluate a definite integral using an anti-derivative (Fundamental Theorem of Calculus, part 2).
33. use substitution to find the anti-derivative of a composite function.
34. apply basic optimization techniques to selected problems arising in various fields such as physical modeling, economics and population dynamics.

Math Tutoring Lab (MTL): Tutoring in rooms KOM 204 and 252 is available as a free service to MTSU students.

Tutoring is conducted by Graduate Teaching Assistants (GTA’s), work study aids, and a faculty moderator. Tutoring will be available starting September 7 with hours of operation to be determined. The lab is closed on weekends and MTSU scheduled holidays. Days and times for tutoring specific topics are posted on the bulletin board outside room KOM 252. Please sign in with your name, course and instructor when you enter the lab. Forms for comments on your tutoring experience can be found at the sign in table and turned in to the secretary in KOM 223D.

Drop/Withdrawal Policy: Please note the Drop Policy and Withdrawal Procedures as they are stated in the Fall 2013 Registration Guide. The last day to drop this course without a grade is Sep 6. The last day to drop this course with a "W" is Oct 29. A grade of "I" will be given only in accordance with University Policy. No grade of "W" will be assigned after the official drop date except in situations involving extreme extenuating circumstances beyond the student’s control. In particular, a "W" will not be granted merely because the student is failing. Students should be aware that missing the official drop date and thereby receiving an "F" can have ramifications on financial aid.
Lottery Scholarships: To retain Tennessee Education Lottery Scholarship eligibility, you must earn a cumulative TELS GPA of 2.75 after 24 and 48 attempted hours and a cumulative TELS GPA of 3.0 thereafter. You may qualify with a 2.75 cumulative GPA after 72 attempted hours (and subsequent semesters), if you are enrolled full-time and maintain a semester GPA of at least 3.0. **A grade of C, D, F, or I in this class may negatively impact TELS eligibility.** Dropping a class after 14 days may also impact eligibility; if you withdraw from this class and it results in an enrollment status of less than full time, you may lose eligibility for your lottery scholarship. Lottery recipients are eligible to receive the scholarship for a maximum of five years from the date of initial enrollment, or until a bachelor degree is earned; students who first received the lottery scholarship in Fall 2009 or later will additionally be limited to 120 TELS attempted hours. For additional Lottery rules, please refer to your Lottery Statement of Understanding form via RaiderNet, review lottery requirements on the web at [www.mtsu.edu/scholarships/telsconteligibility_scholarships.php](http://www.mtsu.edu/scholarships/telsconteligibility_scholarships.php), or contact the lottery scholarship staff at lottery@mtsu.edu.

Disability Assistance: If you have a disability that may require assistance or accommodation, or you have questions related to any accommodations for testing, note takers, readers, etc., speak with me as soon as possible. Students must also contact the Office of Disabled Students Services (898-2783) with questions about scheduling such services.

Academic Integrity: According to the Rights and Responsibility section of the Student Handbook, cheating is defined as intentional use or attempts to use unauthorized materials, information, study aids, or other student work in graded academic exercises. Allegations of cheating will be prosecuted according to university and departmental policies. Verified acts of cheating will result in a zero grade for the work, or possibly an F grade for the course.

Academic Misconduct: The instructor shall have primary responsibility for control over all classroom behavior and can direct the temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or conduct which otherwise violates the general rules and regulations of the institution. Students engaged in private conversations, or using electronic communication devices, or asleep during class may be directed by the instructor to leave the classroom.

Cell Phone/ Electronic Devices: Cell phones should be silenced before the start of class and put away. If you must take a call or respond to a text, please quietly leave the classroom. Please, refrain from any non-emergency use of cell phones during class time. Headphones and MP3 players (all technology except calculators) should be stored away during class time.

No taping, filming or photography in class without my prior permission (whether by camera, cell phone or other means). These activities are distracting and inhibiting to faculty and other students and may infringe upon privacy or copyright.

Common Courtesy: Food and drink are discouraged. Avoid bringing in meals or food that is noisy when unpackaged or chewed. Please, do not read the newspaper during class. The shuffling of pages can be very distracting.

<table>
<thead>
<tr>
<th>Test 1</th>
<th>Wednesday, Sept. 18, 2013</th>
<th>Test 4</th>
<th>Wednesday, Nov. 20, 2013</th>
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<tbody>
<tr>
<td>Test 2</td>
<td>Wednesday, Oct. 23, 2013</td>
<td>Final Exam</td>
<td>Friday, December 6, 10-12 noon</td>
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<td>Test 3</td>
<td>Wednesday, Nov. 6, 2013</td>
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