Calculus I
Spring 2015
MATH 161.01 (4 credits), MTu_ThF, 09:00A-09:50PM, Wickersham 219

Prerequisites: A grade of C- or better in MATH 160 (*Precalculus*) or MATH 161 Placement.

Instructor: Dr. Buchanan
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Office Hours: 01:00P-1:50P (M–F) or by appointment
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Textbook: *Calculus: Early Transcendental Functions*, 4th edition, Robert T. Smith and Roland B. Minton, McGraw-Hill Company, New York (2011), ISBN 978-0073532325.

Objectives: MATH 161 introduces the concepts and techniques of calculus, beginning with limits. Major emphasis is on the theory and applications of continuity, derivatives, antiderivatives, and the definite integral. The calculus of the trigonometric, exponential, and logarithmic functions is also included. Upon successful completion of this course a student will have learned to

- find the limits of elementary, rational, and some transcendental functions,
- differentiate elementary, rational, composed, and some transcendental functions,
- apply derivatives to situations involving rates of change, velocity, and acceleration,
- apply derivatives in situations requiring the optimization of a quantity,
- integrate elementary, rational, composed, and some transcendental functions.

Overall students will gain an appreciation for the great intellectual achievement that is the development of the calculus.

Course Contents: If time permits other topics may be covered as well.

- Limits and continuity (Chap. 1)
- Differentiation (Chap. 2)
- Applications of the derivative (Chap. 3)
- Integration (Chap. 4)
- First-order differential equations (Sec. 7.1 and 7.2)

Attendance: Students are expected to attend all class meetings. If you know beforehand that you will be absent from class on the day an assignment is due, you must complete and hand in the assignment prior to the absence. If you are unexpectedly absent the day that an assignment is due you must hand in the assignment at the beginning of

the class hour on the first day that you return to class. If you know you will be absent on the day of a test, you must notify me before the time the test is scheduled in order to schedule a make-up test. Students who miss a test should provide a valid excuse, otherwise you will not be allowed to make up the test. No final exam exemptions.

Homework: Students are expected to do their homework and participate in class. Students should expect to spend a minimum of three hours outside of class on homework and review for every hour spent in class. Homework exercises help students review and reinforce concepts covered in class. The textbook exercises are arranged in a generally increasing level of difficulty. Working only the low-numbered exercises will not prepare a student sufficiently for the test and final examination exercises. All assigned homework exercises must be worked until successfully completed.

Tests: There will be four tests and a comprehensive final examination.

1. Friday, February 6, 2015
2. Monday, March 2, 2015
3. Tuesday, March 31, 2015
4. Thursday, April 23, 2015

On the Fridays of weeks in which we do not have a test scheduled a fifteen-minute will be quiz given. I anticipate a total of ten (10) quizzes for this semester. Typically a quiz will consist of two problems similar to those seen on the week's homework assignments. No makeup quizzes will be given. The final exam is scheduled for Wednesday, May 6, 2015, 08:00A–10:00A. I will not "curve" test, quiz, or exam grades.

Grades: Course grade will be calculated as follows.

Tests	15% each
Quizzes	10%
Exam	30%

Tests and the final examination will be graded individually on a 100-point scale. Quizzes will generally consist of two questions drawn from or based on homework problems from the previous days' material. These exercises will be simply graded correct or incorrect ("correct" meaning 90% or more of the supporting work and solution of the problem is correct and appropriate). Thus a grade on an individual quiz will be either 0, 1, or 2 depending on whether no answers were correct, only one answer was correct, or both answers were correct. There will be no make-ups for missed quizzes. I keep a record of students' test, homework, and exam scores. Students should also keep a record of graded assignments, tests, and other materials. As an example of the calculation of the numerical course grade, suppose a student's four test grades were 87, 78, 65, and 70 (out of a maximum of 100 points on each test), the student's final

examination grade was 71 (again, out of a maximum of 100), and the student's ten quiz grades were 2, 2, 1, 1, 1, 2, 0, 1, 1, and 0. This student's test and quiz average are 75 and 1.10 respectively. The student's numerical course grade is then

$$(75)(0.60) + (1.10)(5) + (71)(0.30) = 71.8 \approx 72.$$

The course letter grades will be calculated as follows. I will not "curve" course grades.

90-92	A−	93-100	A		
80-82	B−	83-86	B	87-89	B+
70-72	C−	73-76	C	77-79	C+
60-62	D−	63-66	D	67-69	D+
		0-59	F		

Calculator Policy: Frequently examples, homework exercises, quizzes, and tests will make use of a graphing calculator. The Department of Mathematics recommends the TI-83/84/85/86 model calculator for students in elementary calculus. The TI-89/92, TI-Inspire, or any other calculator with symbolic or computer algebra capabilities is not permitted to be used in this course.

Course Repeat Policy: An undergraduate student may not take an undergraduate course of record more than three times. A course of record is defined as a course in which a student receives a grade of A, B, C, D, (including + and −) F, U, Z or W. The academic department offering a course may drop a student from a course if the student attempts to take a course more than three times.[1]

The last day to withdraw from a course (and receive the W grade) is April 3, 2015.

Inclement Weather Policy: If we should miss a class day due to a school closing because of weather, any activities planned for that missed day will take place the next time the class meets. For example, if a test is scheduled for a day that class is canceled on account of snow, the test will be given the next time the class meets.

Final Word: Math is not a spectator sport. What you learn from this course and your final grade depend mainly on the amount of work you put forth. Daily contact with the material through homework assignments and review of notes taken during lectures is extremely important. Organizing and conducting regular study sessions with other students in this class will help you to understand the material better.

No one can guarantee you success in this course. Your responsibilities and the instructor's expectation are outlined above. There will be no second chances, "do-overs", or extra credit assignments.

[1] Memorandum to mathematics faculty from Dr. Charles G. Denlinger, Assistant Chair, Department of Mathematics, August 30, 2004.