MATH 180
CALCULUS AND ANALYTIC GEOMETRY
Winter 2018

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Materials Required

Text: Calculus Early Transcendentls, 7th Edition by James Stewart
Calculator: A scientific or graphing calculator.

Student learning Outcome: SLO are under the department website:
http://www.mtsac.edu/math/slo_math.html

Topics to be covered

- *Limits and Continuity: Rates of change and limits, calculating limits using limit laws, precise definition of a limit, one-sided limits and limits at infinity, infinite limits and asymptotes, continuity, tangents and derivatives.*
- *Differentiation: The derivative as a function, differentiation rules, derivatives of trig functions, the chain rule and parametric equations, implicit differentiation, derivatives of inverse functions and logarithms, inverse trig functions, related rate problems, linearization and differentials.*
- *Applications of derivatives: extreme values of functions, Mean Value Theorem, First derivative test, concavity and curve sketching, applied optimization problems, indeterminate forms and L'Hopital's rule, Newton's Method, Antiderivatives.*
- *Integration: Estimating with finite sums, sigma notation and limits of finite sums, the definite integral, Fundamental Theorem of Calculus, indefinite integrals and the substitution rule, substitution and area between curves.*
- *Integrals and Transcendental Functions: Logarithm defined as integral, exponential growth and decay, relative rate of growth.*
- *Integration by substitution and by parts.*

Quizzes:

There will be about 4 quizzes. All quizzes are consisting of problems similar to the homework and examples in lectures. There will be no makeup quizzes. At the end of the semester, the highest 3 quiz grades will be used. This allows you to drop about one quiz grade.

Class Attendance

Attendance at each class meeting is expected and is important for your success in the course. A roll sheet will be passed in the second half of the class (after break time) and it's up to you to sign in. A student may be dropped for excessive (more than two) absences. Phones should be set so that they do not ring during class.

Exams

There will be two exams. You will be allowed at most one makeup exam, but only for extreme circumstances. If you will be unable to take an exam at the scheduled time, ***you must contact me at least two days before the day of the exam to request a makeup exam****. The exams will test your understanding of the concepts covered in the course. Most of the questions on these exams will require showing a significant amount of work to justify your answer. A correct answer with no work shown will be given a zero. The exams will also require you to explain and interpret your results.* ***Graphing calculator is NOT allowed on any exam.***

Homework:

The completion of daily homework is critical to your success in this course. There will be 5 homework assignments, each counting 10 points that will be collected on every Tuesday. Late homework will not be accepted, even if you are absent. If you do not turn in assignment on time, you will receive a zero. On each assignment, a small selection of problems will be graded for a few points; the remaining points will be given for the completeness of the assignment. In order to receive credit for "completeness," an honest attempt must be made on each problem. At the end of the semester, the highest 4 scores will be used, for a homework total of 40 points. This allows you to drop one homework score.

Most of the homework problems will be related to topics discussed in class; some will ask you to try something we didn't talk about. You should be able to reconcile most difficulties with the homework before class. Please make good use of the tutoring services on campus, and each other. While you may discuss these homework problems (as well as all others) with other students in the class or with me, the solutions turned in should for the most part be your own work. You should not write up solutions as a group.

It is very important both for your understanding of the material and for preparing for exams that you work all the assigned problems as soon as the material is covered in class.

Grading

Your semester course grade will be determined by your percentage of the total points possible. You should keep an accurate record of your grades. I will provide information on your grade standing after each exam.

	Percentage
Exams	*45%*
Final Exam	*30%*
Quizzes	*12%*
Homework	*10%*
Maple Projects	*3%*

The scale used to convert from total points earned to a letter grade will no more stiff than:

Percentage	*Grade*
90.0 - 100.0	*A*
80.0 - 89.9	*B*
70.0 - 79.9	*C*
60.0 - 69.9	*D*
Below 60.0	*F*

Academic Honesty

I place a high premium on honesty. Therefore, I consider cheating a serious offense, not only to me, and to other students, but ultimately to the cheater. If a student cheats on an exam, either by copying another student's work or by using a cheating device (notes on paper, clothing, desk, est.…) and I catch him or her, I will address it by either giving them an F for the exam, an F for the entire course, or asking the school to dismiss the student.

Week #	Date	Monday	Tuesday	Wednesday	Thursday	Friday
1	Jan. 8 - 12		2.1 – 2.4	2.5 – 2.7	2.8 ***Quiz #1***	
2	Jan. 15 – 19	***Holiday***	3.1 – 3.3	3.4 – 3.6	3.7-3.8 ***Exam #1***	
3	Jan. 22 – 26		3.8 – 3.10	3.11 4.1 – 4.2	4.3 – 4.4 ***Quiz #2***	
4	Jan. 29 Feb. 2		4.5 – 4.7	4.8 – 4.9	5.1 ***Exam #2***	
5	Feb. 5 - 9		5.2 – 5.4	5.5 7.1 – 7.2	7.3 – 7.4 ***Quiz #3***	
6	Feb. 12 – 16		7.4 – 7.5	***Quiz #4*** Review	***Final exam***	