MATH 122-003 SUMMER 2016

Instructor: Mr. Robert R. Vandermolen

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office hours: by appointment

Text: *Applied Calculus (5th edition)*, Hughes-Hallet, Leason, Lock, Flath, et al. Wiley 2014 (don't need to buy, you do need to buy access to the online homework, seen next!)

Online Homework: We will use WileyPlus for homework this semester go to http://www.WileyPLUS.com and enter the course ID: 514603

Note: Most students do not buy a paper textbook as the entire text is available on WileyPLUS. The problems in the paper book are all in WileyPLUS, plus some extras. Students can buy access directly from WileyPlus site using a credit card (cheapest), or use an access code they buy in the bookstore (mostly for students with certain types of scholarships). Buying an access code on the internet other than the website (amazon etc.) is generally NOT a good idea.

Prerequisites: Qualification through a math placement Test score of MB4-9 earned on the Algebra Placement Test or earned through a grade of C or better in Math 111 or 111I.

Learning Outcomes: Upon successful completion of this course, students should be able to:

- Recall basic mathematical terms related to elementary algebraic, exponential, and logarithmic functions, and derivatives and integrals of such functions and express these terms in correct context.
- Apply the methods of calculus to solve applications involving maxima, minima, rates of change, motion, work and area under a curve.
- Verbally interpret data given as graphs, tables, and equations and put into words the relationship between a function and its derivative or integral given in these forms as well.
- Utilize a graphing calculator to solve problems, locate maxima and minima of a function and analyze change in a function.

Calculator: A graphing calculator is required for this course. The TI-83 or 84 is preferred. A TI-89, TI-Nspire CAS or similar calculator with a computer algebra system is NOT allowed on examinations and quizzes.

Grading: There will be in class quizzes (there will be half point redemption), and homework (online, I will drop 5 of these), in class tests, class work, and a final exam. The student's final grade will be weighted in the following way:

Quizzes: 10%

Homework: 10%

Tests: 45%

Final Exam: 25%

Class Participation/Attendance/Group Work: 10%

A: 90%-100% B: 80%-89.99% C: 70%-79.99% D: 60%-69.99% F: Below 60%

You will get a B+, C+, or a D+ if your grade is at least an 87, 77, or 67 respectively.

Last Day to withdraw without a grade of W: Wednesday, May 11

Final Exam date: Friday June 17 2016 (regular time and place)

For more information on important dates see, http://registrar.sc.edu/html/Calendar/

CLASS POLICIES:

1. **Attendance** will be taken every day and counted towards your final grade. You are allowed to miss 3 unexcused lectures without deduction of your grade, each additional absences will account for 2.5% deduction from your attendance grade (you are not allowed to miss a test) excused absences will need proper documentation, and as always is up to the discretion of the instructor.
2. **Absences from tests:** excused absences for a test will only be in an emergency basis, and the student will need to provide proper documentation. As always the instructor maintains the right to make the final decision.
3. YOU are responsible for what goes on in class, whether you are there or not. If you miss a day of class, the instructor will NOT provide you with notes, even for excused absences. The instructor does suggest you make a friend in class that will share their notes.
4. Please turn off all electronic devices before enete3ring class. If you must text, please go outside the classroom.
5. **NO late assignments will be accepted,** see the grading policy, I drop some quizzes and homeworks, these will be used instead of late assignments.

6. If you have a **Learning Disability** which will affect this class, you should contact SDS at https://www.sa.sc.edu/sds/ A student that may apply should contact the SDS as soon as possible concerning accommodations one needs, also contact the instructor as well and these will be accommodated.
7. Keep all your tests. Errors in the computer cannot be changed unless you have the originals.
8. Do not use red or pink ink or red or pink pencils on tests. Blue or black pencils or pens preferred. You are expected to bring pencils or pens sufficient to complete the test.
9. I will expect you to conduct yourselves following the **Carolina Creed**, which can be found at http://www.housing.sc.edu/creed/index.html
10. **MATH LAB**: there is a *free walk-in tutoring lab* in Leconte 105, open Monday-Friday. There are also paid one-on-one math tutors available. For more information about either the lab or hiring tutors, see http://www.math.sc.edu/math-tutoring-center
11. **Student Success Center:** The student success Center offers a range of free services, form online ot in person tutoring, for many of your classes as an undergraduate here at the University of South Carolina, I suggest you look through the website to see what would be most helpful for you, at http://www.sa.sc.edu/ssc/peertutoring/

SYLLABUS (Note: Adjustments may be made in case of time constraints.)

Class #	Section	Topic
1	**1.1-1.2**	**Functions and Linear Functions**
2	**1.3-1.4**	**Rates of Change and Application of Functions to Economics**
3	**1.5-1.6**	**Exponential Functions and the Natural Logarithm**
4	**1.7-1.8**	**Exponential growth and decay and function transformations**
5	**1.9-2.1**	**Power functions and proportionality and instantaneous rate of change**
6	**2.1-2.2**	**Instantaneous rate of change/ the derivative function**
7		**Review**
8		**Test 1**
9	**2.3-2.4**	**Interpretations of the derivative and the second derivative**
10	**2.5-3.1**	**Marginal cost and revenue and Power rule**
11	**3.2-3.3**	**Derivatives of Logs and Exponentials and Chain rule**
12	**3.4-4.1**	**Product and Quotient rule and Local Maxima and Minima**

13	**4.2-4.3**	**Inflection points and global maxima and minima**
14	**4.4**	**Profit, cost, and revenue**
15		**Review**
16		**Test 2**
17	**5.1-5.2-5.3**	**Distance and Accumulated Change and The definite integral**
18	**5.4-5.5**	**Interpretations of the definite integral and Fundamental theorem of calculus**
19	**6.1-6.2**	**Antiderivatives and indefinite integrals**
20	**6.3-6.6**	**Using FTC to compute integrals and integration by substitution**
21	**6.6**	**Integration by substitution**
22		**review**
23		**Test 3**
24	**5.6**	**Average value**
25	**6.4**	**Consumer producer surplus**
26		**Review**

Academic dishonesty

Students may find FAQs about the University's policy on academic dishonesty (which I will abide if an incident occurs) at http://www.housing.sc.edu/academicintegrity/stufaq.html