Instructor: Dr. John Griggs   **Office**: SAS 2107   **Phone**: 513-2291   **E-mail**: jrgriggs@ncsu.edu
Office hours: 4:00 – 5:30 MW, and by appt   **Textbook**: Calculus I for Engineers and Scientists, by
.anke, Griggs, and Norris (on-line textbook accessible via WebAssign (under **Resources**); $45)
TA (recitation leader; MA141-005A): Julian Sass (jasass@ncsu.edu)

Goals and Objectives: Recognize and graph equations for conic sections and for parametric equations. Conceptual and visual representation of limits, continuity, differentiability, and tangent line approximation for functions at a point. Apply the limit theorems, the squeeze theorem, left and right limits, and limits involving infinity using L'Hopital's Rule. Approximate roots of an equation using the Intermediate Value Theorem and Newton's Method. Apply the power rule, product rule, quotient rule, and the chain rule to functions explicitly and implicitly for finding derivatives. Use derivatives in practical applications, such as distance, velocity, acceleration and related rates. Use first and second derivatives to optimize functions and to find critical numbers, inflection points, extreme points, and the shape of the graph. Sketch a possible graph of a function given the graph of its derivatives. Antidifferentiate basic functions, use Riemann sums to estimate areas under the curve, and apply the Fundamental Theorem of Calculus to evaluate definite integrals. Examine a variety of patterned integration techniques.

Grading: 60% **Tests**;   15% **Homework/Quiz**;   25% **Final exam**: the +/- system will be used:
98 - 100 A+;   92-97 A;   90-91 A-;   89-89 B+;   82-87 B;   80-81 B-;   78-79 C+;   72-77 C;   70-71 C-;
68-69 D+;   62-67 D;   60-61 D-;   0-59 F   (FE; FQA; FNA; UE; UQA; UNA; S)

Absences: No penalty for excessive absences; the reward for good attendance (3 absences or fewer) is the opportunity to replace your worst test grade with the final exam, if it is higher. (sleeping = absent) .rdies and early departures will accrue into absences. Students who are tardy should enter as quietly as possible so as not to distract the class that has already begun. If attendance has already been taken, it is your responsibility to see me (or the TA) at the front of the classroom after class to have your absence changed to a tardy.

Homework/Quiz: (WebAssign homeworks; in-class quizzes) WebAssign homework deadline extensions can be done by the student (self-extensions; reduced point value for the assignment). You must purchase access to WebAssign; use the website at the bottom of this sheet. The fee includes the WebAssign homework and the on-line textbook.

Students with **documented disabilities** (through NCSU's DRO) will be given all necessary accommodations. Instructor must have paperwork well before testing begins.

All tests will be taken in blue books. Students should turn in 6 blue books (no names on them) to me prior to test one. Blue books can be obtained at the student bookstores – many times they are free; they are at most $.15 each. A stamped-blue book (two blue books for the exam) will be issued to you each test day.

Academic Integrity Statement: Academic dishonesty includes the giving, taking, or presenting of information or material by a student with the intent of unethically or fraudulently aiding oneself or another person on any work which is to be considered in the determination of a grade or the completion of academic requirements. More specific definitions are set in the NCSU Code of Student Conduct. The honor pledge: "I have neither given nor received unauthorized aid on this test or assignment."

Final Exam: Monday, April 29,   6:00 - 9:00 pm   SAS2102
J. Griggs' homepage : https://jrgriggs.wordpress.ncsu.edu
WebAssign homepage: http://webassign.ncsu.edu

Day by Day Math 141   Spring 2019

Monday	TuesR	Wednesday	ThR	Friday
1/7 Intro to course, .1(Number Systems; Sets and notations)		1/9 .2(Conics; Parabolas, Ellipses & Hyperbolas)		1/11 .3(Functions, big overview section)
1/14 .4 (Parametric Equations)		1/16 1.1 1.2 (Defn. of a limit)		1/18 1.2 (Limits;properties &evaluations)
1/21 No Classes (MLK day)		1/23 1.3 (Continuity)		1/25 1.4(Inst. Velocity)
1/28 2.1(Defn. of Deriv)		1/30 Review		**2/1** Test #1 (.1-2.1)
2/4 2.2(Derivative Rules)		2/6 2.3 (More Deriv rules)		2/8 2.4 (Trig Derivatives)
2/11 2.5 (Chain Rule)		2/13 2.6(Implicit Diff)		2/15 2.6 (Logs and other rules)
2/18 2.7 (Related Rates)		2/20 2.7(Related Rates)		2/22 Review
2/25 Test #2 (2.2-2.7)		2/27 3.1 (Newton's Method)		3/1 3.2(Extreme Values)
3/4 3.3 (Shape of a Curve)		3/6 3.4 (Optimization)		3/8 3.5(L'Hopital's Rule)
3/11 No Classes		3/13 Spring Break		3/15 Spring Break
3/18 3.6(Differentials & Antiderivatives)		3/20 Review		**3/22** Test #3 (3.1-3.6)
3/25 4.1 (Areas under curves; Riemann Sums)		3/27 4.2(Definition of definite integral)		3/29 4.3 (Fund Theorem of Calculus)
4/1 4.3 (Substitution)		4/3 4.4 & 4.5 (Int. by parts)		4/5 4.5(Int. by parts)
4/8 5.1 Areas		4/10 5.2 Volumes		4/12 5.2 Volumes
4/15 Review		**4/17** Test 4 (4.1-4.5)		4/19 No Classes (Easter)
4/22 Review Test 1&2		4/24 Review Test 3&4		4/26 Overall Review day Last day of Classes

Exams 4/29-5/7   Date according to official NCSU exam schedule based on time and day of the class.
https://studentservices.ncsu.edu/calendars/exam/#spring

MA141-005 Tests (MW):

Test #1: Monday, February 4

Test #2: Monday, February 25

Test #3: Wednesday, March 20

Test #4: Wednesday, April 17

MA141-004 Tests (TTh):

Test #1: Thursday, January 31

Test #2: Tuesday, February 26

Test #3: Thursday, March 21

Test #4: Thursday, April 18