MA 241 Calculus II

Lecture Details
Section 001| MTWThF 7:30-9:40 AM, SAS 1216
Instructor: Suzanne Crifo | LAU 208| secrifo@ncsu.edu| https://secrifo.wordpress.ncsu.edu/
Office Hours: MWThF 12:00-1:00 PM, T 9:40-10:40 AM, and by appointment
Class Website: https://moodle-courses1819.wolfware.ncsu.edu/course/view.php?id=1509

Course Text
Calculus for Engineers and Scientists, Volume II, by John E. Franke, John R. Griggs and Larry K. Norris
The text is accessible via **WebAssign** under "Resources". The cost for the textbook is included in the cost for
WebAssign (total $72.95).

Catalog Description
Prerequisite: MA 141 with grade of C- or better or AP Calculus credit. Credit is not allowed for both MA 241
and MA 231.
Second of three semesters in a calculus sequence for science and engineering majors. Techniques and applications
of integration, elementary differential equations, sequences, series, power series, and Taylor's Theorem. Use of
computational tools.

Learning Objectives
Upon successful completion of this course, students will be able to:

1. **Use Mathematical Notation and Terminology.** The students will demonstrate mastery in using the
   mathematical notation and terminology of calculus. Students will read, interpret, and use the vocabulary,
   symbolism and basic definitions.

2. **Understand and Describe the Fundamental Concepts and Tools of Calculus II.** Students will apply
   integration techniques to geometric and physical applications, identify the appropriate method for evaluating
   various integrals, solve differential equations and recognize their presence in various physical applications,
   and be able to classify different sequences and series.

3. **Develop Problem-Solving Techniques to Formulate and Formally Present Arguments.** Students
   will demonstrate the ability to reason with abstract mathematical concepts. Students will acquire a level
   of proficiency in manipulating concepts in calculus, in analyzing and evaluating their applicability in their
   future studies, including in academic areas requiring calculus as a prerequisite for work and in occupational
   fields requiring a background in calculus.

Course Grade: According to NCSU policies, we will use the following grading system:

Grading Scale

97-100	A+	93-96.99	A	90-92.99	A-
87-89.99	B+	83-86.99	B	80-82.99	B-
77-79.99	C+	73-76.99	C	70-72.99	C-
67-69.99	D+	63-66.99	D	60-62.99	D-

Your final grade in this course will be determined by marks earned on the final exam, three term tests, online
homework assignments, and in-class quizzes/assignments. The weighting of these components are as follows:

Participation and Quizzes = 3 %
WebAssign = 10 %
Three term tests = 60 %
Final Exam = 27 %

Participation and Quizzes 3% includes active engagement in class, completion of any Google form check-ins, and cooperation with other students when asked to work in groups. Quizzes and in-class assignments may occur to check in on your progress. They will not be more than five or ten minutes long.

WebAssign 10% due dates, other than the introductory assignments, are set for the last day of classes (*Friday, July 27, 2018*). The introductory assignments are due on *Thursday, July 5, 2018*. I encourage collaboration among classmates on homework as long as you maintain academic integrity as defined in the NCSU Code of Student Conduct. I suggest working out each problem on a piece of paper as if it were to be handed in. I may ask you to hand in your work for WebAssign problems as part of your quiz grade. If you do work with another student on a written homework assignment, please each hand in your own assignment, written in your own words, with the statement "I worked with [student's name]" at the top of the paper.

Three Term Tests 60% will be closed-book, closed-notes. A scientific calculator is permitted, but not required. Graphing calculators will **not** be allowed. The dates are decided by the department and are *Tuesday, July 3, Friday, July 13,* and *Tuesday, July 24*. No re-tests will be given. If you miss a test because of an undocumented or unexcused absence, a zero will be entered for that test grade. Students who are unable to take the test at those times (with a documented excuse cannot, not just that you don't want to) will schedule an alternate time to take the exam.

Final Exam 27% is mandatory, cumulative and will be held in the usual classroom on Tuesday, July 31, 2018, 8:00-11:00am.

Corrections to Grading
If you believe an error has been made in grading on a test write a statement making your case and bring it to your instructor. I will give partial credit where appropriate. You have *1 week after the test is returned* to request re-grading. Do not alter the original work!

Test Make-Up Policy
All *anticipated absences* must be excused in advance of the test date. These include university duties or trips (certified by an appropriate faculty or staff member), required court attendance (certified by the Clerk of Court), or religious observances (certified by the Department of Parent and Family Services 515-2441). *Emergency absences* must be reported as soon as possible once returning to class and must be appropriately documented (illness by an attending physician or family emergencies by Parent and Family Services). If you are sick on a test day and decide not to come to class, go to the health center or other medical facility. Students who miss a test and have a university-approved excuse must submit appropriate documentation.

Attendance is expected every day as it is critical for the understanding of the material and not attending class serves as its own penalty because this material takes much longer to learn independently. You are responsible for keeping up with missed work so that you do not fall behind. Attendance will be taken at all classes per NCSU policy, but does not count towards the course grade. In addition, if you have 3 or fewer total absences (excused/unexcused) and attend all tests, you may replace your lowest in-class test score with your score on the final exam.

Getting Help
My official office hours are designated solely for your class. Please come in or contact me with any questions as they arise. It is better to come each day for even five minutes with any new questions than only the day before the test with confusion about an entire unit. If you find that my office hours are inconvenient or impossible with your schedule, contact me to set up an appointment.

Use your classmates! If you need clarification on a topic, a different explanation from a peer is often helpful. If you feel you understand a topic really well and someone asks you for help, try explaining it. The process of organizing your thoughts to explain to someone else will not only help you learn to communicate mathematically, but also solidify the concept or expose any holes in your understanding.

The Math Multimedia Center is a tutorial center for undergraduate students that need help in their mathematics courses (100- through 300-level), and is staffed by math graduate students familiar with the material taught in these courses.

> Location: SAS Hall 2103/2105
> Hours: Monday - Friday 8:00 am - 5:00 pm

You can also get help with your courses (not only math) at the NCSU Undergraduate Tutorial Center.

Add/Drop Regulation
Undergraduate students are expected to complete all courses for which they are enrolled as of census date (the official enrollment date defined as the 10th day of fall and spring terms and the 3rd day of summer terms). Undergraduate course drops after census date will now be considered to be course withdrawals and will result in W grades on the transcript. Undergraduates will be limited to a <u>maximum of 16 hours of course withdrawals</u> after census date and before the drop date July 12, 2018 for their entire undergraduate career at NC State. These course withdrawals will count as attempted hours for course repeat, financial aid satisfactory academic progress, and tuition surcharge calculations.

<u>Students with Disabilities</u>
"Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG02.20.1)"

<u>Student Evaluations</u>
Online class evaluations will be available for students to complete during the last three weeks of classes. You will receive an email message directing you to a website where you can login using your Unity ID and complete the evaluation. All evaluations are confidential; instructors will not know how any one student responded to any question, and students will not know the ratings for any instructors. We may also have mid-semester evaluations to determine if instruction should change in any way to meet students' needs. Completion of these mid-semester evaluations will be considered in the student's participation grade.

Academic Integrity Statement and Academic Dishonesty
Both faculty and students at North Carolina State University have a responsibility to maintain academic integrity. An informational brochure about academic integrity is available from the university and students are encouraged to obtain a copy.

> "Academic dishonesty is the giving, taking, or presenting of information or material by a student that unethically or fraudulently aids oneself or another on any work which is to be considered in the determination of a grade or the completion of academic requirements or the enhancement of that student's record or academic career." (NCSU Code of Student Conduct)

Scholarly activity is marked by honesty, fairness and rigor. A scholar does not take credit for the work of others, does not take unfair advantage of others, and does not perform acts that frustrate the scholarly efforts of others. The violation of any of these principles is academic dishonesty. Penalties for a violation: For the first violation, you will receive a zero for your work and be put on academic integrity probation for the remainder of your stay at NCSU. The second violation may result in your suspension from NCSU. Both situations will involve the Office of Student Conduct.

MA 241 Tentative Schedule

June 25	M	§0.1-0.8	Course Introduction and Review
June 26	T	§1.1	Arc Length
June 27	W	§1.2-1.3	Average Value of a Function, Work
June 28	Th	§1.3	Work
June 29	F	§2.1	Trigonometric Integrals
July 2	M	§2.2	Trigonometric Substitution, Test Review
July 3	**T**	**§1.1-2.2**, 2.3	**Test #1**, begin Partial Fractions
July 4	W	No Class	Independence Day
July 5	Th	§2.3	Partial Fractions
July 6	F	§2.4-2.5	Table of Integrals, Numerical Integration
July 9	M	§2.5-2.6	Numerical Integration, Improper Integrals
July 10	T	§3.1	Intro to Differential Equations
July 11	W	§3.2-3.3	Separable DEs, Applications of DEs
July 12	Th	§3.3	Applications of DEs, Test Review
July 13	**F**	**§2.3-3.3**, 3.4	**Test #2**, begin Second Order DEs (homogeneous)
July 16	M	§3.4	Second Order DEs (homogeneous)
July 17	T	§3.5	Second Order DEs (non-homogeneous)
July 18	W	§3.6	Applications of Second Order DEs
July 19	Th	§4.1-4.2	Sequences, Infinite Series
July 20	F	§4.3	Convergence Tests
July 23	M	§4.4-4.5	Alternating Series, Absolute Convergence, Test Review
July 24	**T**	**§3.4-4.4**, 4.5	**Test #3**, begin Ratio Test
July 25	W	§4.6-4.7	Power Series, Functions as Power Series
July 26	Th	§4.8	Taylor and Maclaurin Series
July 27	F	§4.9	Taylor Polynomials, Exam Review
July 31	**T**	**§1.1-4.9**	**Final Exam 8:00-11:00 AM**