

MA 242 (050): Calculus III
Spring 2024

Section 050, MWF 10:40-11:30am, Riddick 450

Instructor: Leslie Kurtz (lkurtz@ncsu.edu)

Office: SAS Hall, Room 3240

Office Hours: In-person SAS 3240: M: 9:30-10:30, T: 9:30-10:00, H: 9:30-10:00, F: 9:30-10:30
Over Zoom: W 1:30-2:30pm

Recitation Leader:

Ian Bunner (ikbunner@ncsu.edu) Office Hours: TH 1:30-2:30pm

Class Web Page: <https://kurtz.wordpress.ncsu.edu> This is the place to find old tests, helpful worksheets, and complete test solutions

Moodle Page: <https://wolfware.ncsu.edu/courses/my-wolfware/> This is the place to check your attendance, get class notes, and homework hints. This is also where to go to find Zoom links for office hours and class recordings.

Prerequisites: MA 241 with a grade of C- or better

Content: 4 credit hours. This is the third of three semesters in a calculus sequence for science and engineering majors. Vectors, vector algebra, vector functions, functions of several variables, partial derivatives, gradients, directional derivatives, maxima and minima, multiple integration, line and surface integrals, Green's Theorem, Divergence Theorem, Stokes' Theorem, and numerous applications will be covered.

Textbook: Calculus III for Engineers and Scientists (Franke, Griggs, Norris). This ebook is accessible via WebAssign. The combined cost for the book and the webassign homework is about \$88

Grade Calculation:

WebAssign/Quizzes	10%
Projects	5%
Tests	55%
Final Exam	30%

Grading Scale: The final grade will be assigned using the plus/minus grading system

A+: 98-100	A: 93-97.99	A-: 90-92.99
B+: 88-89.99	B: 83-87.99	B-: 80-82.99
C+: 78-79.99	C: 73-77.99	C-: 70-72.99
D+: 68-69.99	D: 63-67.99	D-: 60-62.99

WebAssign: Graded homework is assigned via WebAssign: <https://www.webassign.net>

You will need our class key **ncsu 7675 6427** , to self-enroll. Any webassign enrollment questions should be answered in this FAQ: <https://docs.google.com/document/d/1J0bSkhmH-odVskB1XbkhudT7SjK0C0O5kDMcJJzWEbg/edit?usp=sharing>

Tests: There are 4 scheduled tests during the semester. Use of calculators of any kind is not permitted on the tests or the final exam. **Each student is required to turn in 5 blue “Examination” booklets prior to the first test (students taking their tests with the DRO don’t need to do this). Students who fail to do so will lose 5 points on Test 1. After Test 1, students who have not brought blue books will continue to lose 5 points on each test/exam until they bring them in. **Do not write anything on the books.** Blue books can be purchased at the bookstore.**

Test 1: Feb 1
Test 2: Feb 29
Test 3: Mar 28
Test 4: Apr 16

Please note: After the tests are returned, you have 3 days to look them over and compare them to the solutions online. If you believe there is an error in the grading of your test, you need to notify me within these 3 days. Grade changes will not occur outside of this timeframe.

Final: The final will be given on Wednesday May 1st from 8:30-11am, Riddick 450.

Make-Up Test Policy: All anticipated absences must be excused **in advance of the test date** and a make-up test scheduled if possible in advance of the absence. 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 Student Development: 515-2441). Emergency absences must be reported within one week of returning to class and must be appropriately documented (illness by an attending physician or family emergencies by Student Development). No other make-ups will be given. It is not wise to miss a test.

Attendance: Attendance will be recorded daily in both class and recitation. You are expected to arrive on time to class. Any student who is not an active class participant the full class period (e.g., doing other work in class, socializing, sleeping, text messaging, leaving early) is recorded as absent. If you miss no more than 4 days AND attend every test, I will replace your lowest test grade with your final exam grade (assuming it is higher).

If you miss class or are late, you are still responsible for all material covered and assignments due.

Additional online lectures are also available for free. You can find them in webassign under resources.

Academic Integrity: I assume that anything turned in with your name on it is your own work. Each time you submit a test, WebAssign, or quiz, you affirm the honor pledge, “I have neither received unauthorized aid nor given aid on this assignment.” The minimum penalty for cheating is a grade of zero on the assignment; violators will be reported to the Academic Integrity Review Board, which can impose additional sanctions. The code of student conduct can be found at <https://studentconduct.dasa.ncsu.edu/code/>

Nondiscrimination Policy: NC State prohibits discrimination, harassment, and retaliation that are based upon a person’s race, color, religion, sex, national origin, age, disability, gender identity, sexual orientation, or veteran status. If you feel that you have been the

subject of prohibited discrimination, harassment, or retaliation, you should contact the Office for Institutional Equity and Diversity (OIED) at 919-515-3148.

NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at <http://policies.ncsu.edu/policy/pol-04-25-05> or <http://oied.ncsu.edu/divweb>.

Disability Services: 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 <https://dro.dasa.ncsu.edu/enrolled-students/>

Health and Participation in Class

- If you test positive for COVID-19 or are told by a healthcare provider that you are presumed positive for the virus, please work with your instructor on health accommodations and follow other university guidelines, including self-reporting (<https://healthypack.dasa.ncsu.edu/services-provided/covid-19/>)
- If you feel unwell, even if you have not been knowingly exposed to COVID-19, please do not come to class.
- If you are in quarantine, have been notified that you may have been exposed to COVID-19, or have a personal or family situation related to COVID-19 that prevents you from attending this course in person (or synchronously), please connect with your instructor to discuss the situation and make alternative plans, as necessary.

Health and Well-Being Resources:

These are difficult times, and academic and personal stress are natural results. If you need additional support, there are many resources on campus to help you:

- **Counseling Center:**
<https://counseling.dasa.ncsu.edu>
- **Health Center:**
<https://healthypack.dasa.ncsu.edu>
- If the personal behavior of a classmate concerns or worries you, either for the classmate's well-being or yours, we encourage you to report this behavior to the **NC State CARES** team:
https://cm.maxient.com/reportingform.php?NCStateUniv&layout_id=2
- If you or someone you know are experiencing food, housing or financial insecurity, please see the **Pack Essentials Program:** <https://dasa.ncsu.edu/support-and-advocacy/pack-essentials/>

Tentative Class Schedule

Dates	Section & Topics
Jan 8-12	3D Coordinate System 1.2 Vectors 1.3 Dot Product
Jan 15-19	Monday January 15: Martin Luther King Day (no class) 1.4 Cross Product 1.5 Lines & Planes
Jan 22-26	2.1 The Calculus of Vector Functions 2.2 Parametrized Curves in Space 2.3 Tangent Vectors, Arc Length, and Curvature
Jan 29-Feb 2	3.1 Multivariable Functions Thursday Feb 1: Test 1 (held during recitation) 3.3 Directional Derivatives: Partial Derivatives
Feb 5-9	3.3 Geometrical Interpretation of Partial Derivatives 3.3 Tangent Plane 3.4 Differentiability of multivariable functions
Feb 12-16	3.5 Directional Derivative & the Gradient Vector Tuesday Feb 13: Wellness Day (no class) 3.5 Chain Rule 3.6 Optimization
Feb 19-23	3.6 Optimization 3.7 Constrained Optimization (time permitting) 4.1 Double Integrals
Feb 26-Mar 1	4.1 cont. Thursday Feb 29: Test 2 (held during recitation) 4.2 Applications of Double Integrals
Mar 4-8	4.3 Triple Integrals 5.1 Polar Coordinates
Mar 11-15	Spring Break (no class)
Mar 18-22	5.2 Cylindrical Coordinates 5.3 Spherical Coordinates 6.1 Vector Fields
Mar 25-29	6.2 Line Integrals 6.3 Line Integrals of Vector Fields Thursday Mar 28: Test 3 (held during recitation) 6.3 Conservative Vector Fields
Apr 1-Apr 5	7.3 Green's Theorem 6.4 Parametric Surfaces 6.5 Surface Integrals

Apr 8-12	6.5 Surface Area 6.5 Mass of a Surface 7.2 Curl & Divergence
Apr 15-19	6.5 Flux Tuesday Apr 16: Test 4 (held during recitation) 7.4 Stokes' Theorem 7.5 Divergence Theorem
Apr 22-23	Final Exam Review
May 1	FINAL EXAM, 8:30-11am, Riddick 450