

MA 231-001: Calculus for Life and Management Sciences B
Summer I 2020
Online Asynchronous
MWF 1:00PM

Instructor: Dylan Bates

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Zoom: <https://ncsu.zoom.us/j/5777449693>

Office Hours: TBA

Additional office hours by appointment.

Prerequisites: MA 131 or MA 141. MA 121 is not an accepted prerequisite for MA 231.

Course Description: This is the second semester of a two-semester sequence in calculus for students in the life and management sciences. Functions of several variables – partial derivatives, optimization, least squares, Lagrange multiplier method; differential equations – population growth, finance and investment models, systems, numerical methods. Credit not allowed for more than one of MA 231, and 241.

Textbook: *Calculus and its Applications* by Goldstein, Lay, Schneider and Asmar (14th ed.) This class is taking part in NC State's All-In program. Course materials are delivered electronically on Moodle. The cost for this program is \$51.50. You have free access to materials through May 18. You must purchase access during that time using the link on the Moodle page to the bookstore's website. If you do not purchase access by the drop/add date, **YOU WILL LOSE ACCESS TO THE COURSE MATERIALS** and will then have to acquire the materials through another source. You may already have the textbook from a previous semester.

WebAssign: Homework assignments will be completed through WebAssign. See <http://webassign.ncsu.edu> for homework questions and due dates. You must log in using your unity ID and password (same as your email). You will have to purchase an access card to use the WebAssign system, which you can do at the school's bookstore or online at the WebAssign page. The cost is \$22.95.

Homework assignments have due dates beginning on Census Day (Friday, May 15), so make sure you purchase your WebAssign access ASAP to avoid any problems!

Exams: This course has 3 scheduled midterm exams and a final exam. The dates are as follows:

Midterm Exam 1: Thursday, May 21 online

Midterm Exam 2: Tuesday, June 2 online

Midterm Exam 3: Thursday, June 11 online

Final Exam: June 17/18 TBD, online

Grade Changes: 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 this week. Grade changes will not occur outside of this timeframe.

Make-Up Test Policy: All anticipated absences must be excused in advance of the test date and a make-up test scheduled in advance of the absence, if possible. 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 DASA). Emergency absences must be reported within one week of returning to class and must be appropriately documented. No other make-ups will be given.

Grade Calculation: Final grades will be calculated based on the following percentages:
WebAssign HW – 15% Midterm Exams – 60% Final Exam – 25%
Your lowest midterm grade will be replaced with the Final Exam grade if it is better.
Your lowest homework grade will be dropped.

Grading Scale: Final grades will be assigned using the standard plus/minus system:

A+: [97, 100]	A: [93, 97)	A-: [90, 93)
B+: [87, 90)	B: [83, 87)	B-: [80, 83)
C+: [77, 80)	C: [73, 77)	C-: [70, 73)
D+: [67, 70)	D: [63, 67)	D-: [60, 63)

Attendance: Attendance will not be recorded and does not count towards the course grade. If you miss class or are late, you are still responsible for all material covered and assignments due. Additionally, I reserve the right to lower the threshold required to make a certain letter grade, based on your attendance and participation in class. I will never raise that threshold for any reason.

Academic Integrity: I assume that anything turned in with your name on it is your own work. Each time you submit any assignment, including exams, you implicitly 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/>.

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/>

Course Schedule: You are expected to view video content from the course daily. However, Monday, Wednesday, and Friday, we will meet via Zoom for review. Intended to go over practice problems, this is a great time to ask about topics or homework questions.

Summer 2020 Schedule

Date	Section	Title	Assignment
Wed. May 13	7.1	Review, Functions of Several Variables	Get WebAssign
Thurs. May 14	7.1, 7.2	Functions of Several Variables, Partial Derivatives	
Fri. May 15	7.3	Minima and Maxima	

Mon. May 18	7.3, 7.5	Minima and Maxima, Least Squares	HW 7.2
Tues. May 19	7.4	Lagrange Multipliers	
Wed. May 20		Review	HW 7.3, 7.5
Thurs. May 21		Exam 1 (7.1, 7.2, 7.3, 7.4, 7.5)	
Fri. May 22	7.6	Double Integrals	HW 7.4

Mon. May 25		Memorial Day	
Tues. May 26	11.1	Taylor Polynomials	
Wed. May 27	11.2	Newton-Raphson Method	HW 7.6
Thurs. May 28	11.3, 11.5	Geometric Series and Applications, Taylor Series	HW 11.1
Fri. May 29	11.5	Taylor Series	HW 11.2

Mon. June 1		Review	HW 11.3
Tues. June 2		Exam 2 (7.6, 11.1, 11.2, 11.3, 11.5)	
Wed. June 3	5.1, 10.1	Exponential Growth and Decay, Differential Equations	HW 11.5
Thurs. June 4	10.2	Separation of Variables	
Fri. June 5	10.2, 10.5	Separation of Variables, Qualitative Theory	HW 5.1, 10.1

Mon. June 8	10.5	Graphical Solutions of Differential Equations	
Tues. June 9	10.6	Intro to Modeling	HW 10.2
Wed. June 10		Review	HW 10.5
Thurs. June 11		Exam 3 (5.1, 10.1, 10.2, 10.5, 10.6)	
Fri. June 12	10.6	Applications of Differential Equations	

Mon. June 15	10.7	Euler's Method, Numerical Solutions of Differential Equations	HW 10.6
Tues. June 16		Review	HW 10.7

June 17/18	COMPREHENSIVE FINAL EXAM		
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The goal is to stick to this schedule, however we may deviate from it slightly, as I see fit.