MA 131 Course Syllabus

MA 131 – Calculus for Life and Management Sciences A

Section 001
Summer I 5 Week 2019
3 Credit Hours

Course Description

MA 131 is the first semester of a two-semester sequence in calculus for students in the life and management sciences. The main topics are first order linear difference equations, with a focus on financial models; differential calculus: limits, first and second derivatives and their interpretations, differentiation rules, graphing, and optimization; trigonometric, exponential and logarithmic functions; integral calculus: rules for anti-differentiation, fundamental theorem of calculus, computation of area, solids of revolution. The course will also cover applications in life, management, and social sciences.

Learning Outcomes

Students who take this course should be able to do the following upon completion: use mathematical models to analyze problems in finance and biology, evaluate limits, find derivatives using the appropriate rule(s), use derivatives in problems regarding position and population, use derivative tests to analyze graphs and optimize functions, interpret and visualize the derivative as slope of the tangent line, integrate elementary functions, and interpret the integral as the area under a curve.

Course Structure

The course will be primarily lecture based, with potentially some discussions or group activities.

Course Policies

The use of computers to access course materials or take notes is allowed, otherwise no other use of technology or communication devices is allowed within the classroom. Eating and drinking are allowed so long as the room we are in supports it and it is done respectfully (i.e. quietly, without making a mess, etc.).

Instructors

Michael Baker (mabaker5) - *Instructor*
Email: mabaker5@ncsu.edu
Phone: N/A
Office Location: SAS Hall 4117
Office Hours: Tuesday: 11:30-12:30 Thursday: 11:30-12:30

Course Meetings

Lecture
Days: MTWHF
Time: 9:50am - 11:20am
Campus: Main
Location: 01108 SAS Hall
This meeting is required.

Course Materials

Textbooks
Calculus and Its Applications - *Larry J. Goldstein*
Edition: 14th
Cost: $186.75
This textbook is required.

Expenses
Blue Books (Small) x4 - ~$0.25-$1.00
This expense is required.

Blue Book (Large) x1 - ~$1.00-$2.00
This expense is required.

Materials
Webassign Access - $32.95
This material is required.

Requisites and Restrictions

Prerequisites
C- or better in MA 107 or MA 111, or 520 or better on the SAT Subject Test in Mathematics Level 2 or the NCSU Math Skills Test, or 2 or better on an AP Calculus exam.

Co-requisites
None.

Restrictions
Credit is not allowed for both MA 131 and MA 121 or MA 141.

General Education Program (GEP) Information

GEP Category
Mathematical Sciences

GEP Category Outcomes

How This Course Will Fulfill GEP Category Outcomes

GEP Co-requisites
This course does not fulfill a General Education Program co-requisite.

Transportation
This course will not require students to provide their own transportation. Non-scheduled class time for field trips or out-of-class activities is NOT required for this class.

Safety & Risk Assumptions
None.

Grading

Grade Components

Component	Weight	Details
Unit Tests (4)	60%	
Homework	15%	
Final Exam	25%	

Letter Grades
This Course uses Standard NCSU Letter Grading Scale

97 ≤ A+ ≤   100
93 ≤ A   <   97
90 ≤ A- <   93

87	≤	B+	<	90
83	≤	B	<	87
80	≤	B-	<	83
77	≤	C+	<	80
73	≤	C	<	77
70	≤	C-	<	73
67	≤	D	<	70
63	≤	Đ	<	67
60	≤	D-	<	63
0	≤	F	<	60

Requirements for Credit-Only (S/U) Grading

In order to receive a grade of S, students are required to take all exams and quizzes, complete all assignments, and earn a grade of C- or better. Conversion from letter grading to credit only (S/U) grading is subject to university deadlines. Refer to the Registration and Records calendar for deadlines related to grading. For more details refer to http://policies.ncsu.edu/regulation/reg-02-20-15.

Requirements for Auditors (AU)

Information about and requirements for auditing a course can be found at http://policies.ncsu.edu/regulation/reg-02-20-04.

Policies on Incomplete Grades

If an extended deadline is not authorized by the instructor or department, an unfinished incomplete grade will automatically change to an F after either (a) the end of the next regular semester in which the student is enrolled (not including summer sessions), or (b) the end of 12 months if the student is not enrolled, whichever is shorter. Incompletes that change to F will count as an attempted course on transcripts. The burden of fulfilling an incomplete grade is the responsibility of the student. The university policy on incomplete grades is located at http://policies.ncsu.edu/regulation/reg-02-50-3.

Late Assignments

Students will have the opportunity to receive full credit on **ONE** late homework assignment, so long as the assignment is turned in 48 hours after the original due date (unless it goes past the last day of class). It is the responsibility of the student to inform the instructor of any extensions needed in WebAssign in this case. Otherwise, all other homework assignments must be submitted by the due date to receive credit.

Attendance Policy

For complete attendance and excused absence policies, please see http://policies.ncsu.edu/regulation/reg-02-20-03

Attendance Policy

Less than 4 absences (excused or unexcused) in the class will result in an additional 5 bonus points on the final exam.

Absences Policy

None.

Makeup Work Policy

None.

Additional Excuses Policy

None.

Academic Integrity

Academic Integrity

Students are required to comply with the university policy on academic integrity found in the Code of Student Conduct found at http://policies.ncsu.edu/policy/pol-11-35-01

Academic Honesty
See http://policies.ncsu.edu/policy/pol-11-35-01 for a detailed explanation of academic honesty.

Honor Pledge
Your signature on any test or assignment indicates "I have neither given nor received unauthorized aid on this test or assignment."

Electronically-Hosted Course Components
There are no electronically-hosted components for this course.

Accommodations for Disabilities
Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with the Disability Resource Office at Holmes Hall, Suite 304, Campus Box 7509, 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG02.20.01) (https://policies.ncsu.edu/regulation/reg-02-20-01/).

Non-Discrimination Policy
NC State provides equal opportunity and affirmative action efforts, and prohibits all forms of unlawful discrimination, harassment, and retaliation ("Prohibited Conduct") that are based upon a person's race, color, religion, sex (including pregnancy), national origin, age (40 or older), disability, gender identity, genetic information, sexual orientation, or veteran status (individually and collectively, "Protected Status"). Additional information as to each Protected Status is included in NCSU REG 04.25.02 (Discrimination, Harassment and Retaliation Complaint Procedure). 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 https://oied.ncsu.edu/divweb/. Any person who feels that he or she has been the subject of prohibited discrimination, harassment, or retaliation should contact the Office for Equal Opportunity (OEO) at 919-515-3148.

Course Schedule
NOTE: The course schedule is subject to change.

Lecture MTWHF 9:50am - 11:20am — Week 1 — 05/15/2019 - 05/17/2019
Sections 10.1-10.4 on online supplement, Sections 1.1-1.3 (Slopes of Lines and Curves, Derivatives)

Lecture MTWHF 9:50am - 11:20am — Week 2 — 05/20/2019 - 05/24/2019
Sections 1.3-1.8 (Equation of Tangent Line, Limits, Connecting Derivatives and Limits, Differentiability, Continuity, Differentiation Rules, Applications of Derivatives)

Lecture MTWHF 9:50am - 11:20am — Week 3 — 05/28/2019 - 05/31/2019
Sections 2.1-2.6 (First Derivative Test, Second Derivative Test, Curve Sketching, Optimization)

Lecture MTWHF 9:50am - 11:20am — Week 4 — 06/03/2019 - 06/07/2019
Sections 3.1-3.2, 4.1-4.6, 5.1-5.2 (Product Rule, Quotient Rule, Chain Rule, General Power Rule, Exponential/Natural Log Functions, Exponential Growth/Decay)

Lecture MTWHF 9:50am - 11:20am — Untitled Week — 06/10/2019 - 06/14/2019
Sections 6.1-6.4, 9.1 (Antidifferentiation, Indefinite Integral, Definite Integral, Area Under Curves, Area Between Two Curves, U-Substitution)

Lecture MTWHF 9:50am - 11:20am — Untitled Week — 06/17/2019 - 06/18/2019
Sections 9.5-9.6 (Solids of Revolution, Improper Integrals)