Semester:	Spring 2025	
Course:	Brief Calculus – MATH 2040	
Instructor:	Thomas Hartfield	
Office / Web:	Watkins Academic Building - 120	http://faculty.ung.edu/thartfield/
Phone / Email:	678.717.3858	thomas.hartfield@ung.edu

In Person Office Hours:
for Student Assistance: Monday and Wednesday afternoon   2:00 pm – 5:15 pm
(I may be unavailable in the last five minutes of each hour)

Online Meetings
for Student Assistance: Please request at least 24 hours in advance via email
Note 1: Online meetings will be held using Zoom via D2L.
Note 2: Emails will receive a response within 24 hours on weekdays, except during Spring Break.

First Day for Withdrawal (W): Friday, 17 January 2025 after 3:00 pm
Add/Drop & Late Registration possible (no grade or withdrawal required) to this point.

Last Day for Withdrawal (W): Friday, 21 March 2025 before 11:59pm
After this date a withdrawal will receive a "WF" unless a dean gives specific approval.

Final Day of Class: Friday, 2 May 2025

Final Exam: MWF 10am class (sect. G04, CRN 1745):   Friday, 9 May 2025 at 10:20 am in Watkins 134
MWF 11am class (sect. G02, CRN 1750):   Wednesday, 7 May 2025 at 10:20 am in Watkins 134

Text & Tech Materials:
1. Required Text: Guided Notes in eLearning@UNG
2. Required Online Access: MyLab for *Calculus with Applications*
3. Textbook: *Calculus with Applications (Brief Version)*, 12th ed.
   by Lial, Greenwell, & Ritchey (Publisher: Pearson Education, 2022)
4. Technology Resources:
   - Graphing calculator at a (more or less) equivalent level to a TI-84+
   - Maple (available on UNG Menu)

Course Description: This course is intended for non-science majors, with particular emphasis on applications of calculus to business.   It will develop familiarity with such concepts as limits, the derivative, the definite integral, the indefinite integral and their applications. **Credit:** 3 hours. **Prerequisite**: Grade of C or above in MATH 1111.

This course is a Core IMPACTS course that is part of the STEM area.

Core IMPACTS refers to the core curriculum, which provides students with essential knowledge in foundational academic areas. This course will help master course content, and support students' broad academic and career goals.

This course should direct students toward a broad Orienting Question:
- How do I ask scientific questions or use data, mathematics, or technology to understand the universe?

Completion of this course should enable students to meet the following Learning Outcome:
- Students will use the scientific method and laboratory procedures or mathematical and computational methods to analyze data, solve problems, and explain natural phenomena.

Course content, activities and exercises in this course should help students develop the following Career-Ready Competencies:
- Inquiry and Analysis
- Problem-Solving
- Teamwork

Course Objectives: After completion of the course the student will be:
- Use numerical, graphical, and analytical techniques to investigate the behavior of a function using the concept of a limit.
- Evaluate limits using analytical methods.
- Describe the behavior of a function by finding infinite limits and limits at infinity.
- State the definition of the derivative.
- Interpret the value of a derivative as a rate of change.
- Find the derivative of algebraic, exponential, and logarithmic functions.
- Analyze the behavior of a function by using derivatives.
- Solve application problems using differentiation.
- Find local maxima and minima of a function.
- Solve application problems involving optimization.
- Find antiderivatives of algebraic, exponential, and logarithmic functions.
- Evaluate definite integrals by using the Fundamental Theorem of Calculus
- Calculate and interpret a definite integral as an area or a net change.
- Solve application problems using indefinite and definite integrals.

Course Content:

Unit	Themes	Anticipated Dates
0	Algebra: Review and Business Functions	Discussion: 15 Jan – 17 Jan
1	Limits, Rates of Change, Intro to Derivatives, Continuity	Instruction: 22 Jan – 3 Feb Test: Wednesday, 5 February
2	Techniques for Finding Derivatives (part 1), Applications of Derivatives	Instruction: 7 Feb – 17 Feb Test: Wednesday, 19 February
3	Techniques for Finding Derivatives (part 2), Higher Order Derivatives, Partial Derivatives	Instruction: 21 Feb – 5 Mar Test: Friday, 7 March
4	Absolute Extrema, Increasing/Decreasing Behavior, Relative Extrema, Optimization	Instruction: 17 Mar – 28 March Test: Monday, 31 March
5	Concavity, Inflection Points, Economic Concepts, Indefinite Integration	Instruction: 2 Apr – 11 Apr Test: Monday, 14 April
6	Integration by Substitution, Definite Integration, Applications of Integration	Instruction: 16 Apr – 28 Apr Test: Wednesday, 30 April

Attendance Policy: Students are expected to attend class unless they feel it is unsafe to do so for themselves or for the sake of others.

Attendance will be checked for whatever format the class is meeting within.
Absences from in-person instruction (when the campus is open) or from online instruction (when the campus is closed) will only be excused when notification is provided from the Office of the Dean of Students is received.

Students with more than four unexcused absences, or nine or more total absences, may be withdrawn from the course by the instructor.

Students repeatedly arriving late or leaving early may be assessed a cumulative absence if the aggregate time missed is equal to a full class period.

Students are encouraged to bring technology to class to work on assignments when activities associated with the flipped format do not require their attention. However, students may be asked to leave the classroom if their use of technology is disruptive to other students.

Any student who fails the course will have his/her date of last attendance or assignment completed noted for federal financial aid regulations.

Methods of Instruction:	Will include, but are not limited to: asymmetric video lecture, in-class lecture, question-and-answer sessions, feedback from formative assessments, and computer and/or calculator based explorations. Students are encouraged to assess and monitor their own problem-solving process to determine when an error has been made or a new strategy should be used.
Classroom Recording:	Class sessions in Watkins 134 will be recorded through screen capture and room audio. These recordings will only be available to members of the classroom community and will be posted within eLearning within one week (preferably 24 hours). Recordings are auto-captioned by computer. Viewing a classroom recording in lieu of being physically present in class will be considered an unexcused absence for attendance policy purposes (unless previously cleared by the instructor or excused by the Office of the Dean of Students).
MyLab Assignments:	All homework assignments will be completed through the online MyLab platform which will be available via D2L through the First Day Access program.
	Homework for units 0 through 6 will comprise the homework grade category in the D2L gradebook. Assignments from units 1 through 6 will be due at 11:59 pm the night before the unit test (as listed in the Course Content section of the syllabus). Unit 0 homework will be due concurrently with the unit 1 homework. Homework from units 0 through 6 can be attempted after their respective deadlines with a late penalty of 1% per day applied to any question answered after the deadline.
	Algebra Review homework must be completed by 11:59pm on Tuesday, 4 February 2025. This homework will count exclusively as extra credit in the homework grade category and cannot be submitted late.
	All homework assignments will be closed so that grades can be finalized after 11:59pm on the Monday before the Final Exam (5 May 2025). Assignments not attempted will receive a 0.
Testing Policy:	Unit tests and the final exam will be given in a face-to-face format on paper; students will need to bring a pencil and their calculator (and only these items) for these tests. Work, as well as final answers, will be assessed, with partial credit being awarded as appropriate; credit can be withheld for a lack of written appropriate work.
	Students are expected to take tests and the final exam in the classroom unless the campus is closed. Tests in the classroom must be started before any student in the room completes the test. This requirement does not apply to students with appropriate accommodations through the Office of Student Accessibility Services.
	Students may request to take a test earlier than it is given in the classroom. Excluding highly exceptional circumstances, tests cannot be taken after they are given in the classroom (that is, no "make-up tests" will be offered).
Academic Integrity:	Academic honesty is highly valued at UNG. "Academic honesty" means performing all academic work without plagiarism, cheating, lying, tampering, stealing, giving or receiving unauthorized assistance from any person, or using a unique source of information without properly acknowledging the source. "Academic dishonesty" means performing, attempting to perform, or assisting any other person in producing academic work that does not meet this standard of academic honesty.
	During a test or exam, it is unacceptable to take, give, or receive aid of any type from another student. It is also inappropriate to use any electronic device, including a mobile phone, during an exam that has not been preapproved by the instructor. A TI-83/TI-84 calculator (or model with fewer functions) is approved for use during tests and exams.
	A student who acts in an academically dishonest manner will receive a zero for the test or exam in question and be referred to the academic integrity process at UNG. Additional consequences may result from this process, up to, and including suspension or expulsion from the university.

Evaluation Methods:	Formative assessment will be in the form of six written in-class tests covering each unit 1-6 Summative assessment will be in the form of a final examination covering units 1-6. Homework will be used to supplement the formative assessment.
Final Grades:	The semester grade will be calculated by the following weighted average: (11% of each of the best five tests) + (20% of the homework average) + (25% of the final exam) Any student assigned a 0 due to academic dishonesty will have the fifth best test score replaced by the 0. If a student has fewer than five test grades, the grade on the final exam will be applied as a test score to ensure four tests are used in the calculation. The homework average will be calculated in D2L based on a weighted average of all homework assignments scheduled in MyLab from units 0 through 6. Homework from the Algebra Review will be treated as extra credit; however, the homework average will be capped at 100%.

100%	90%	80%	70%	60%	0%
A	B	C	D	F	

Schedule Changes:	The instructor reserves the right to reschedule assignments by up to two class meetings due to unexpected events or adjustments in class pacing. Test postponements may be announced up through the class meeting preceding the scheduled date of test.
Limited Attempts Policy:	UNG students in college-level courses are limited to three attempts at a course at UNG. An attempt is defined as any term resulting in a grade, a W, or a WF for the course.
Tutoring Resources:	Free tutorial assistance is available in the MathLab, located off the ACTT Center, in the Watkins Building of the Gainesville campus. Tutors in the MathLab are not intended to replace classroom instruction; the primary responsibility of tutors is to clarify possible misunderstandings and assist in understand the processes and purposes of assignments and assessments.

Other Course Resources: Library Resources:

- *Schaum's* easy outlines. Calculus: based on *Schaum's* Outline of differential and integral calculus by Frank Ayres, Jr. and Elliot Mendelson [computer file] / abridgement editor, George J. Hademenos.
- Dunham, *The Mathematical Universe: An Alphabetical Journey Through the Great Proofs, Problems, and Personalities*, Wiley & Sons, New York, 1994.
- *Multicultural and Gender Equity in the Mathematics Classroom: The Gift of Diversity* (Janet Trentacosta & J. Kenney, Eds., NCTM, 1997)
- *Women, Minorities and Persons with Disabilities in Science and Engineering,* National Science Foundation, 1999 (NS 1.49).
- *Women and Science Celebrating Achievements Charting Challenges* (National Science Foundation, 1997)

Web-based Resources:

- AMS Math Moments – http://www.ams.org/mathmoments/
- Association for Women in Mathematics – http://www.awm-math.org
- Geogebra – http://www.geogebra.org
- Maple Center – http://www.maplesoft.com/students/index.aspx
- Math Forum – http://nctm.org/mathforum
- MathWorld – http://mathworld.wolfram.com
- Multicultural Pavilion – http://www.edchange.org/multicultural
- Project Interactivate – www.shodor.org/interactivate
- PurpleMath – http://purplemath.com
- SOS Mathematics – http://www.sosmath.com/
- Wolfram Alpha Knowledge Engine – http://www.wolframalpha.com/

Supplemental Syllabus:	Additional information is provided at http://ung.edu/academic-affairs/policies-and-guidelines/supplemental-syllabus.php.