



Mathematics

MATH 1810 Course Syllabus

Course Title: Applied Calculus I

Description: Three credits. This course satisfies the True Blue Core Quantitative Literacy requirement and meets specific requirements for programs as outlined in the MTSU Undergraduate Catalog. Topics include mathematical modeling applied to real-world problems, sets, functions, limits, continuity, single variable differentiation, implicit differentiation, exponential and logarithmic models and integration.

Quantitative Literacy (Quant Lit) (3 hours)

- For all catalogs 2024-2025 and beyond, this course meets the True Blue Core (TBC) curriculum requirement for Quantitative Literacy (Quant Lit). To learn more about TBC requirements: <https://w1.mtsu.edu/truebluecore/core.php>.
- For all catalogs prior to 2024-2025, this course meets the general education curriculum requirements for Mathematics (3 hours). To learn more about general education requirements for catalogs prior to 2024-2025: https://w1.mtsu.edu/gen_ed/requirements.php.
- **The TBC outcome for Quantitative Literacy:** Students demonstrate the ability to interpret, represent, calculate, apply, and analyze numerical data in a variety of settings, and will make assumptions and communicate those assumptions based on quantitative information.

Prerequisites: Math Enhanced ACT of 19 or greater or MATH 1710

Semester: **Course:** MATH 1810 - **Room:** **Time:**

Instructor:

Office:

Office Hours:

E-Mail/Phone:

Attendance:

Attendance is required at each class meeting. Participation in University sanctioned activities or in military duties and situations where the institution's policy on inclement weather is applicable are considered excused absences. However, non-attendance does not relieve a student of the responsibility for work covered or assigned. The instructor will keep a record of attendance for each student.

Course Materials:

Required Text: *Calculus: An Applied Approach*, 10th Edition, Larson ISBN: 9781337652308

Required Calculator: A TI-83 or TI-84 Plus Graphing Calculator

Course Purpose:

This course is designed to help students develop basic skills and concepts in applied calculus. It introduces the notion of the limit of a function and applies the idea to the definition of derivative and integral.

Learning Outcomes:

Upon completion of this course with a passing grade, the student will:

- Have a clear understanding of functions.
- Have the ability to calculate the derivative of a function utilizing its definition, formulas derived from the definition of the derivative, and previously known derivatives of component functions.
- Have the ability to apply derivatives to the approximation of function values, to sketching (including increasing-decreasing behavior, optimization, concavity and inflection points) and to solving problems modeled by functions.
- Have a clear understanding of the definite integral-its definition, calculation and application using antiderivatives and the Fundamental Theorem of Calculus.

Course Requirements:

In order to accomplish the learning outcomes of this course, the learner is required to:

- Attend class lectures
- Participate in class activities
- Read and study assignments
- Solve assigned problem sets
- Complete test, quizzes, homework, etc.
- Complete a comprehensive final exam

If you do not take the final exam, you cannot pass the course.

Course Topics:

This course consists of selected topics from Chapters 1, 2, 3, 4, and 5 in the required text, including functions, limits and the derivative, differentiation and applications of the derivative, optimization and integration.

Sections to Be Covered:

Chapter:	Sections Covered:
1: Functions, Graphs and Limits	1.1, 1.2, 1.3, 1.4, 1.5, 1.6
2: Differentiation	2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7*, 2.8*
3: Applications of the Derivative	3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8
4: Exponentiation and Logarithmic Functions	4.1, 4.2, 4.3, 4.4, 4.5, 4.6
5: Integration and Its Applications	5.1, 5.2, 5.3, 5.4

*Optional Topics

Course Evaluation and Grading:

- Attendance, homework, quizzes, and projects all total to no more than 25% of the final grade.
- In-class tests all carry the same weight and total no more than 50% of the final grade.
- The comprehensive final exam accounts for 25% of the final grade. The final will only be given at the time noted below (under important dates) in the regular class meeting room. If you do not take the final exam, you will automatically be assigned the grade of F for the course.

Final Exam:

The final examination is a Mathematics Department, multiple-choice, comprehensive examination given to all students enrolled in MATH 1810. Students are required to take the final examination at the official University-scheduled date and time. Official final examination dates and times are determined by class meeting time and are listed on the [University Registrar's homepage](https://www.mtsu.edu/registrar/registrar-guide/): (<https://www.mtsu.edu/registrar/registrar-guide/>).

The final examination is closed book. Students are allowed to use one 8.5"x 11" sheet of notes to the exam. Students must provide their own note page. Examination pamphlets and scratch paper are provided by the exam proctor.

Unexcused absences for the final examination result in a course grade of F.

MATH 1810-D (online sections) requires a proctored final examination to be taken at the MTSU Testing Center or an approved alternate testing site. Individual instructors may require additional proctored assessments.

Note: Students are required to bring the following materials to the final examination: (1) a large scantron, Form No. 4521, (2) a TI 83 or 84 Plus graphing calculator, (3) a #2 pencil, and (4) an 8.5" x 11" page of notes.

Grading Scale:

Percentage	Grade
90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
Below 60	F

NOTE: In order to receive a passing grade for the course, you must take the final exam and achieve a passing grade (60%) on the exam. If this is accomplished, then the final grade assigned for the course will be based on the total points earned.

Important Academic Dates:

Last Day to Drop Without a Grade:

Last Day to Drop With a W:

Final Exam Time and Date:

Tentative Exam Dates:

Exam 1 – Chapter 1

Date:

Exam 2 – Chapter 2

Date:

Exam 3 – Chapter 3

Date:

Exam 4 – Chapter 4

Date:

Exam 5 – Chapter 5

Date:

Drop/Withdrawal Policy and Dates:

Please note the Drop Policy and Withdrawal Procedures as they are stated in the Current Registration Guide. A grade of "I" will be given only in accordance with the University Policy. No grade of "W" will be assigned after the official drop date except in situations involving extreme extenuating circumstances beyond the student's control. In particular, a "W" will not be granted merely because the student is failing. Students should be aware that missing the official drop date and thereby receiving an "F" can have ramifications on financial aid.

General conduct in class:

The instructor has primary responsibility for control over all classroom behavior and can direct the temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or conduct which otherwise violates the general rules and regulations of MTSU.

Judicial Statement / Academic Misconduct: Please review the [information on Academic Integrity and Misconduct](#). Academic integrity is a hallmark of Middle Tennessee State University. We expect students to present original work for all academic assignments turned in for credit and appropriately credit all sources used.

Academic misconduct includes, but is not limited to:

1. Plagiarism: The adoption or reproduction of ideas, words, statements, images, or works of another person as one's own without proper attribution. This includes self-plagiarism, which occurs when an author submits material or research from a previous academic exercise to satisfy the requirements of another exercise and uses it without proper citation of its reuse.
2. Cheating: Using or attempting to use unauthorized materials, information, or study aids in any academic exercise. This includes unapproved collaboration, which occurs when a student works with others on an academic exercise without the express permission of the professor. It also includes purchasing assignments or paying another person to complete a course for you.
3. Fabrication: Unauthorized falsification or invention of any information or citation in an academic exercise.

Going online and using information without proper citation, copying parts of other students' work, creating information to establish credibility, or using someone else's thoughts or ideas without appropriate acknowledgment is academic misconduct. If you have a question about an assignment, please ask me to clarify. All cases of academic misconduct will be reported to the Director of Student Academic Ethics and may result in failure on the test/assignment or for the course.

Grade Appeals

[University Policy 313, Student Grade Appeals](#), provides an avenue for MTSU students to appeal a final course grade in cases in which the student alleges that unethical or unprofessional actions by the instructor and/or grading inequities improperly impacted the final grade.

Free Tutoring:

Take advantage of our FREE tutoring service and learn how to study, get help with understanding difficult course material, receive better test grades, or simply improve your grade point average. Tutoring is available in *study skills* and *learning strategies* that includes sessions on time management, notetaking, when and where to study, and memory principles. Tutoring is also available in over 200 courses including biology, history, computer information Systems, physics, math, psychology, chemistry, economics, recording industry, and many more. The central location for tutoring is the Tutoring Spot, located in Walker Library, but is also conducted at various other campus sites.

For available tutoring opportunities, visit

<http://mtsu.edu/studentsuccess/tutoring.php#on>. For questions, call the Tutoring Spot at 615-904-8014.

Hope (Lottery) Scholarship Information

Do you have a lottery scholarship? To retain the Tennessee Education Lottery Scholarship eligibility, you must earn a cumulative TELS GPA of 2.75 after 24 and 48 attempted hours and a cumulative TELS GPA of 3.0 thereafter. A grade of C, D, F, FA, or I in this class may negatively impact TELS eligibility.

If you drop this class, withdraw, or stop attending this class, you may lose eligibility for your lottery scholarship, and you may not be able to regain eligibility.

For additional Lottery rules, please refer to your [Lottery Statement of Understanding form](#) or contact your [MT One Stop Enrollment Counselor](#).

Make-Up Policy:

Make-ups will not be given for anything other than in-class exams, and only with the instructor's prior consent (emergencies accepted). A University approved excuse must be provided in order to be given a make-up exam and, depending on circumstances, the instructor has the right to not give a make-up exam.

Mental Health:

As a college student, you may experience a range of challenges and issues that can interfere with your physical and mental well-being, hinder your academic experience, and negatively impact your daily life. Some of these experiences may include overwhelming depression/sadness, anxiety, high levels of stress, use of alcohol/drugs, difficulty sleeping, difficulty concentrating, and/or loss of motivation. These challenges and issues can lead to thoughts of self-harm and suicide. If you or any of your classmates are experiencing these issues, it is important to reach out and ask for help. Discuss your situation with a friend, a family member, your instructor, or an academic advisor. Remember: Everyone struggles. It's okay to talk about it. Ask for help. YOU ARE NOT ALONE!

Outreach and Support Programs

The MTSU community is committed to the academic achievement of each student, and we know that struggling to address basic needs can affect a student's ability to perform academically. If you are having trouble finding a safe and stable place to live or enough food to eat, please contact Danielle Rochelle (615-898-2808 or Danielle.Rochelle@mtsu.edu), come by the MTSU Food Pantry at the MT One Stop, or speak with your instructor to get the assistance and resources you need.

Reasonable Accommodations for Students with Disabilities:

Middle Tennessee State University is committed to campus access in accordance with Title II of the Americans with Disabilities Act and Section 504 of the Vocational Rehabilitation Act of 1973. Any student interested in reasonable accommodations can consult the [Disability & Access Center \(DAC\)](#) website and/or contact the DAC for assistance at 615-898-2783 or dacemail@mtsu.edu.

Student Resources

Frequently Used Student Resources

Technical Support

Students who experience technical problems including, but not limited to, logging into their course, timing out of their course, using the course web site tools, should be encouraged to contact the [MTSU Help Desk](#) online (24/7) or at 1-615-898-5345.

Title IX

Students who believe they have been harassed, discriminated against or been the victim of sexual assault, dating violence, domestic violence or stalking should contact a Title IX/Deputy Coordinator at 615-898- 2185 or 615-898-2750 for assistance or review [MTSU's Title IX website](#) for resources. MTSU faculty are concerned about the well-being and development of our students and are legally obligated to share reports of sexual assault, dating violence, domestic violence and stalking with the University's Title IX coordinator to help ensure student's safety and welfare. Please refer to [MTSU's Title IX website](#) for contact information and details.

The True Blue Pledge

I am True Blue

As a member of this diverse community, I am a valuable contributor to its progress and success. I am engaged in the life of this community. I am a recipient and a giver. I am a listener and a speaker. I am honest in word and deed. I am committed to reason, not violence. I am a learner now and forever. I am a BLUE RAIDER. True Blue!

Find us on Social Media:

