

MATH 273.002 - Calculus I - Spring 2024

Instructor/Class Information

Instructor	Dr. Vince Guingona vgingona@towson.edu YR 226
Class Times	Monday and Wednesday, 10 - 11:50am, YR 216 Friday, 10 - 10:50am, YR 216
Office Hours	Monday, Wednesday, and Friday, 2:00pm - 3:00pm or by appointment
Exam Dates	Wednesday, February 28, 10:00 - 11:00am Wednesday, April 3, 10:00 - 11:00am Wednesday, May 8, 10:00 - 11:00am
Final Exam	Saturday, May 18, Time and Location TBD

Course Information

Prerequisites. MATH 117, MATH 119, or a qualifying score on the Math Placement exam.

Course Description. Functions, limits, and continuity; differentiation of algebraic and trigonometric functions; mean value theorem; differentials; introduction to integration; applications. Four lecture hours and one laboratory hour per week.

Course Objectives. Besides introducing the student to the topics described in the course description, the course aims to help develop certain general skills, with emphasis on: analyzing numerical and graphical information, algebraic manipulation, and critical thinking. In particular, students will: construct and evaluate logical arguments; apply and adapt a variety of appropriate strategies to solve mathematical problems; recognize and apply mathematics in contexts outside of mathematics; organize and consolidate mathematical thinking through written and oral communication.

Course Content. Over the course of the semester, we will cover the following material.

Weeks	Topics	Sections
1-3	Limits: Limits and their properties; continuity; the ϵ - δ definition of limit; limits at infinity and asymptotes.	2.1-2.5, 4.6
4-8	Derivatives: Definition of derivative; rules for differentiation; implicit differentiation.	3.1-3.9
8-11	Applications of the Derivative: Related rates; graph sketching; optimization problems; L'Hôpital's rule; Newton's method.	4.1-4.9
12-15	Integration: Antiderivatives; definite and indefinite integrals; the Fundamental Theorem of Calculus; substitution.	4.10-5.7

Textbook. [OpenStax Calculus, vol. 1](#). ISBN: 193816802X (print), 1947172131 (digital). The textbook is

available for free online, for web view and in PDF format. You may also purchase a print version, if you prefer, [from OpenStax on Amazon.com](#).

Calculator Policy. All quizzes and exams for this course will be written so that they may be taken without the use of a calculator. Although it is not necessary, you may use a four-function or scientific calculator **without** a computer algebra system (CAS) on quizzes and exams. The use of calculators with CAS, graphing calculators, cell phones, smart watches, or computers on quizzes and exams is prohibited.

Grading Policy

Your course grade will be based on the following assessments:

Homework	10%
Quizzes	10%
SageMath Labs	10%
Three Midterm Exams	45%
Final Exam	25%

Exams. There will be three midterm exams given throughout the semester. Each of these exams will account for 15% of your course grade. The exact time of the exams will be posted on the *Timeline* section in the main menu. The final exam, accounting for 25% of your course grade, will be cumulative. These exams are "Closed Book" exams; the use of external resources during the exam is prohibited.

The labs, the homework assignments, and the quizzes will each be worth 10% of your course grade. The due dates for these will be posted on the *Timeline* section in the main menu.

Percent	0-59%	60-66%	67-69%	70-76%	77-79%	80-82%	83-86%	87-89%	90-92%	93-100%
Grade	F	D	D+	C	C+	B-	B	B+	A-	A

Homework, Labs, and Quizzes

Homework Assignments. Weekly homework will come in two types: practice problems from the textbook and web homework. The two types of assignments will complement each other and students are expected to complete both. The goal of the web homework is to let you practice the basics and to provide immediate feedback in case you are doing something wrong. However, it will not cover all types of problems that you will need to master - to prepare for the quizzes and the exams you will need to complete both the web homework and the practice problems from the textbook.

For the web homework, we will use *WebWork*, a free web-based homework system. *WebWork* assignments will be assigned once a week, and a typical assignment will have 8-12 problems. In most cases, you will have up to 6 attempts to solve a problem correctly. The due dates of *WebWork* assignments (on Tuesdays at 11:59pm) will be posted on the *Timeline*. Please try to resolve any questions you have with a *WebWork* assignment by noon on its due date. Most likely, last minute questions will not be answered before the assignment closes.

Quizzes. Throughout the course of the semester there will be 11 quizzes; at the end of the semester, your lowest quiz grade will be dropped. Typically, the quizzes will require fluency in material that has been covered during

the prior week, but the due date and the precise scope for each quiz will be posted on the *Timeline*. As with the exams, quizzes are "Closed Book"; the use of external resources during the quiz is prohibited.

Labs. There will be 8 computer lab assignments. The labs will use *SageMath*. The due dates of the labs will be posted on the *Timeline*. Once completed, the labs will be submitted through Blackboard.

Getting Help

Calculus 1 is a difficult course. However, there are many resources for you to get help with this course.

Office Hours. I encourage you to come to my office hours, which are Mondays, Wednesdays, and Fridays from 2:00pm to 3:00pm (or by appointment) in YR 226, with questions you have in the course.

Tutoring. Tutoring help can be found at the [Math Tutoring Center](#), which has both drop-in hours and scheduled appointments for MATH 273. The tutoring center also runs Peer-assisted learning (PAL) sessions, which are weekly drop-in sessions that are led by a peer tutor. During each session, a specific topic is reviewed that is related to current material for MATH 273 and students have the opportunity to ask questions and work on examples/problems together. For more information, please see the [PAL website](#).

Companion Courses. Consider signing up for a MATH 273 companion course, called *MATH 273S - Connections to Calculus I*. This is a one credit course, graded Satisfactory/Unsatisfactory, which is designed to provide timely review of prerequisite material for MATH 273 and to help you develop the study skills and habits necessary for success in a college level math course. For more information, please contact the Mathematics Department at math@towson.edu.

Other Policies

Attendance. As in all TU classes, regular class attendance is expected. If you are absent from class, it is your responsibility to get any missed information from your classmates.

Make-ups and Late Work. Late *WebWork* or lab assignments will not be accepted, and no make-up quizzes will be given. In case of a documented excused absence that covers a *WebWork* assignment, a lab, or a quiz, you will be exempted from that assessment and the respective grade simply will not be a part of your grade record. If you have a documented excused absence that covers an exam, I will work with you to find a reasonable alternative accommodation.

It is TU policy to excuse student absences for the following reasons: illness or injury when the student is unable to attend class; death of a family member (see the [Student Bereavement Procedure](#) on the website); religious observance where the nature of the observance prevents the student from attending class; participation in University activities at the request of University authorities; and compelling verifiable circumstances beyond the control of the student. Absences that do not fall in any of these five categories are unexcused. In case of a scheduled excused absence, the student must provide documentation at least one week prior to the date of the absence for it to be excused; otherwise, documentation must be provided as soon as possible.

Academic Integrity. Exams and quizzes are to be completed strictly individually using only the material provided by your instructor. Students are expected to be familiar with TU's [Student Academic Integrity Policy](#), especially the sections that define plagiarism, cheating and complicity (II.B-II.E) and describe the possible grade penalties (V.C). You may work with other students in the course on the labs and *WebWork* assignments, but each student must submit their own version.

Accessibility and Disability Services (ADS): This course is in compliance with Towson University policies for students with disabilities. Students with disabilities are encouraged to register with ADS at:

Cook Library, Academic Commons, Suite 321

410-704-2638

<https://www.towson.edu/accessibility-disability-services/>

Students who suspect that they have a disability but do not have documentation are encouraged to contact ADS ([see the ADS website](#)) for advice on how to obtain appropriate evaluation. A memo from ADS authorizing your accommodation is needed before any accommodation can be made.

Diversity. In accordance with TU, FCSM, and departmental objectives, everyone in this course is expected to be respectful of each other without regard to race, class, linguistic background, religion, political beliefs, sex, gender identity or expression, sexual orientation, ethnicity, age, veterans status, or physical ability. If you feel that these expectations have not been met, please, contact Dr. Felice Shore.

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