

MATH 273: Calculus I Course Syllabus

Section	001
Instructor	Dr. Vince Guingona YR 357 vgingona@towson.edu
Class Times	M 8:00 – 9:50 am in YR 217 W 9:00 – 9:50 am in YR 219 F 8:00 – 9:50 am in YR 219
Office Hours	MW 2:00 – 3:30 pm or by appointment
Test Dates	October 4, October 28, December 2
Final Exam	Friday, December 13, at 8:00 am in YR 217
Prerequisites	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.

Textbook. *OpenStax Calculus*, vol. 1. ISBN: 193816802X (print), 1947172131 (digital). The textbook is available for free online, for web view and in PDF format. If you prefer, you may also purchase a print version from OpenStax on Amazon.com.

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

Weeks	Topics	Sections
1–4	Limits: Limits and their properties; continuity; the ϵ - δ definition of a limit; limits at infinity and asymptotes.	2.1–2.5, 4.6
4–7	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'Hospital's rule; Newton's method.	4.1–4.9
12–15	Integration: Definite and indefinite integrals; the Fundamental Theorem of Calculus; substitution.	4.10–5.7

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.

Grading Policy. Your course grade will be based on the following assessments:

Homework & Quizzes	20%
<i>SageMath</i> Labs	10%
Three Midterm Tests	45%
Final Exam	25%

There will be three midterm tests, worth 150 points each, given throughout the semester; each of these tests will account for 15% of your course grade. The final exam, worth 250 points, will be cumulative.

The lab scores will add up to 100 points. Also, your scores on the online homework, the in-class quizzes, and any additional small assessments will all be added together and the total will be rescaled on a 200-point scale. The dates and deadlines for those smaller assessments will be announced in class.

At the end of the semester, all your scores will be added to produce a total out of 1000 points, and that raw total will be converted to a percentage score, P , rounded to the nearest integer percentage point. The value of P will then be used to determine your course grade from the table below. For example, if your raw total is 733 out of 1000 points, your percentage score will be $P = 73\%$ and you will earn a C in the course.

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

Homework Assignments. Weekly homework will come in two flavors: 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 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 (usually on Tuesdays) will be announced in class. The cutoff for each WebWork assignment will be at 11:59 pm on its due date. Please, try to resolve any questions you have with a WebWork assignment by 4 pm 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 or 12 short quizzes, worth 10 points each. At the end of the semester, your lowest quiz grade will be dropped, and the remaining quiz grades will become part of your Homework/Quiz total. Typically, the quizzes will require fluency in material that has been covered during the prior week, but the date and the precise scope for each quiz will be announced in class.

Calculator Policy. A scientific or a basic graphing calculator, comparable to TI-84, will be useful though certainly not required for homework. You may use such a calculator also in class, though

it should be of very limited use on exams and quizzes, since the questions will be written so that they can be answered without the use of a calculator. Moreover, use of cell phone calculator apps or advanced graphing calculators, such as TI-89 or TI-Nspire, will not be permitted on exams and quizzes.

Labs. There will be 8 computer lab assignments worth a total of 100 points. The labs will use *SageMath* and will take place on Tuesdays. The dates of the labs will be announced in class. The website with the labs is available at

<https://wp.towson.edu/math273/labs/>

Students will have 50 minutes to work on the lab during class; lab reports will be due at the beginning of the next class meeting.

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. Moreover, it is your responsibility to make a case that any excused absences are *documented*. It is TU policy to excuse student absences for the following reasons: illness or injury when the student is unable to attend class; 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 four 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.

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 (see above), you will be exempted from that assessment and the respective grade simply will not be a part of your grade record. If you miss a test due to a documented excused absence, I will work with you to find a reasonable alternative accommodation.

Academic Integrity. Exams, quizzes, labs, and WebWork assignments are to be completed strictly individually. 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).

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

7720 York Road, Suite 232
410-704-2638 (Voice) or 410-704-4423 (TDD)

Students who expect that they have a disability but do not have documentation are encouraged to contact DSS (see the DSS website) for advice on how to obtain appropriate evaluation. A memo from DSS 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. Elizabeth Goode.