

# MATH 273.004 - Calculus I - Fall 2020

## Instructor/Class Information

<b>Instructor</b>	Dr. Vince Guingona YR 357 vgingona@towson.edu
<b>Class Times</b>	Monday, 12 - 1:50pm Wednesday, 12 - 1:50pm Friday, 12 - 12:50pm
<b>Office Hours</b>	Monday and Wednesday, 2 - 3:30pm or by appointment
<b>Exam Dates (tentative)</b>	Wednesday, September 23, 2020, 12:00pm -- 1:00pm Wednesday, October 28, 2020, 12:00pm -- 1:00pm Wednesday, December 2, 12:00pm -- 1:00pm
<b>Final Exam</b>	Saturday, December 12, 2020, 12:30pm -- 2:30pm

## Course Information

**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.

**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.

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Weeks	Topics	Sections
1-3	<b>Limits:</b> Limits and their properties; continuity; the $\epsilon$ - $\delta$ definition of limit; limits at infinity and asymptotes.	2.1-2.5, 4.6
4-7	<b>Derivatives:</b> Definition of derivative; rules for differentiation; implicit differentiation.	3.1-3.9
8-11	<b>Applications of the Derivative:</b> Related rates; graph sketching; optimization problems; L'Hospital's rule; Newton's method.	4.1-4.9
12-15	<b>Integration:</b> Definite and indefinite integrals; the Fundamental Theorem of Calculus; substitution.	4.10-5.7

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**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.** A calculator may be useful, though certainly not required, for the homework. You may also use a calculator on exams and quizzes, though it should be of very limited use, since the questions will be written so that they can be answered without the use of a calculator. The work you present on quizzes and exams must show all steps and thought processes to receive full credit. The use of computer algebra systems and other Internet resources is prohibited.

## Grading Policy

Your course grade will be based on the following assessments:

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

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**Exams.** There will be three midterm exams, worth 150 points each, given throughout the semester. Each of these exams will account for 15% of your course grade. These exams will be administered through Blackboard. They must be completed in the assigned 60-minute window (Wednesdays, noon to 1pm). The exact time of the exams will be posted on the *Timeline* section in the main menu. The final exam, worth 250 points and accounting for 25% of your course grade, will be cumulative. This will also be administered through Blackboard. Like the midterm exams, the final exam must be completed in 120-minute window (Saturday, December 12, 12:30 -- 2:30pm). All exams are "Open Book," which means that you may use any resources provided by your instructor. The use of external resources 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.

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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

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## Homework, Labs, and Quizzes

**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 (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, worth 10 points each. These quizzes will be administered through Blackboard. With an exception for the first quiz, they must be completed in a 20-minute window (Wednesdays, noon to 12:20pm). 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 "Open Book," so you may use any resource provided by your instructor. The use of external resources 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.

## Other Policies

**Attendance.** As in all TU classes, regular class attendance is expected (virtually). 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 large portion of the availability of 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 the availability of 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 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.

**Academic Integrity.** Exams, quizzes, labs, and *WebWork* assignments 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).

**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:

7720 York Road, Suite 232  
410-704-2638

Students who expect 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. Elizabeth Goode.