Towson University
Department of Mathematics
MATH 273: Calculus I
Fall 2018

Instructor Information

Instructor: Dr. Vince Guingona
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Course Information

Course Overview: Before the discovery of Calculus, knowledge of the physical science was, for the most part, a mere collection of non-structured observations. Calculus provided concepts necessary to describe physical phenomena by mathematical formulas and important tools to study their properties. In our course, we will introduce basic concepts of Calculus such as limits, derivatives, definite and indefinite integrals.

We will develop methods for application of those concepts to problems like curve sketching, related rates, linear and quadratic approximations, and maximum/minimum problems. This course will give you an opportunity to advance your quantitative, analytical, and problem-solving skills. Specifically, you will learn to recognize and apply mathematics in contexts outside mathematics; to adapt and apply a variety of appropriate strategies to solve mathematical problems; to construct and evaluate logical arguments; and to organize and consolidate mathematical thinking through written and oral communication.

Prerequisites: MATH 119 or calculus course in high school or adequate score on placement test.

Texts and Readings: Calculus Volume 1 from OpenStax, Print ISBN 193816802X, Digital ISBN 1947172131, https://openstax.org/details/calculus-volume-1

Your textbook for this class is available for free online, in web view and PDF format. You can also purchase a print version, if you prefer, from OpenStax on Amazon.com.

You can use whichever formats you want. Web view is recommended – the responsive design works seamlessly on any device. If you buy on Amazon, make sure you use the link on your book page on openstax.org so you get the official OpenStax print version. (Simple

printouts sold by third parties on Amazon are not verifiable and not as high-quality.)

Course Website: https://blackboard.towson.edu

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.

Calculator: Exams for the course will be written so that they may be taken without the use of a calculator. However, students may choose to use either a basic (four function) calculator or a scientific calculator. It is up to the student to provide themselves with one of these calculators should they decide to do so. Any type of graphing calculator is not permitted for use on the exams.

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 numeracy, algebraic manipulation skills, 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:

	Topic	**Overview**	**Textbook Sections**
Week 1	Functions and Models	Functions, Function Notation, Graphing, Domain/Range	1.1 - 1.5
Weeks 2-3	Limits	Limits and their properties.	2.1 - 2.5
Weeks 4-7	Derivatives	Rules for differentiation; implicit differentiation	3.1 - 3.9
Weeks 8-11	Applications of Differentiation	Related rates; graph sketching; optimization problems. At most one hour should be spent on l'Hospital's rule. Newton's method is to be covered in lab	4.1 - 4.10
Weeks 12-16	Integration	Definite and indefinite integrals; the Fundamental Theorem of Calculus; u-substitution;	5.1-5.7

Evaluation

Your grade, g, is dependent upon how well you demonstrate your comprehension of the subject through completion of the items listed below in this syllabus. All questions about grades must be discussed in person; your instructor may not discuss exam grades or final grades via email. The final grade cutoffs are below; this means an 89.9 is a B+.

A: $g \geq 93$	B+: $87 \leq g < 90$	C+: $77 \leq g < 80$	D+ : $67 \leq g < 70$
A-: $90 \leq g < 93$	B: $83 \leq g < 87$	C: $70 \leq g < 77$	D: $60 \leq g < 67$
	B-: $80 \leq g < 83$		F: $g < 60$

Exams (40%): There will be three exams throughout the semester.

- Chapter 2 Exam will be the week of September 17 and is worth 10 % of your grade.
- Chapter 3 Exam will be the week of October 15 and worth 15 % of your grade.
- Chapter 4 Exam will be the week of November 12 and worth 15 % of your grade.

Exact dates will be announced in class.

Final Exam (25%): There will be a final test held during the final exam period scheduled for your course section. This test is cumulative and covers material from the entire semester.

Homework and Quizzes (25%): Homework assignments will consist of two components, written assignments and online assignments through WebWork.

Written assignments 15% will typically consist of several problems from the textbook or other problems written by the instructor. These assignments will be made available on Blackboard. In general, late homework will not be accepted for a grade, and never without prior arrangement. If you miss class (either excused or unexcused) you can turn in your assignment via email. You must turn in a paper copy of your assignment when you return to class. Assignments will be graded much as the problems on your exams will be graded. Solutions should be written in an organized and legible manner. The purpose here is to prepare you for how your exams will be graded.

WebWork assignments 10% will be assigned once a week. The goal of web homework is to let you practice the routine exercises and give you immediate feedback in case you are doing something wrong. A typical web homework assignment will have 7-12 problems. Usually, you will have up to 6 attempts to solve a problem correctly. The link to web homework is posted on BlackBoard. Most of web homework assignments will be due on Fridays. Please try to resolve any questions you have with the assignment by Friday morning. Most likely, the last minute questions will not be answered before the homework is graded.

Quizzes both announced and unannounced may be given . For the purposes of determining the final grade, they shall be treated as a written homework assignment.

Labs (10%): Labs using SageMath will take place approximately 7 times throughout the semester. Students will have time to work on the labs during class, and may be able to finish them during the class period. Labs will be due during the next course meeting. All labs will be available online.

Course and University Policies

Attendance Policy: Students are expected to attend all classes. Consistent attendance offers the most effective opportunity for students to understand concepts, materials and expectations of those courses in which they are enrolled. Students are expected to attend all classes and to actively engage and participate in this process. Excused absences (see below) will not negatively affect your grade, but students remain responsible for all instructional activity conducted in each class.

Regarding excused absences, the university catalog makes this statement: "It is policy of the university to excuse the absences of students 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 (e.g., Intercollegiate Athletics, Forensics Team, Dance Company, etc.)
- compelling verifiable circumstances beyond the control of the student

Students requesting an excused absence must provide documentation to the instructor two weeks prior to the scheduled absence when known in advance or as soon as possible when not known in advance."

Late Assignment Policy: Students who are absent from class are responsible for any missed work, assignments or assessments. If you must miss class for extenuating circumstances please inform me to re-schedule missed work. Work missed for unexcused absences cannot be made up. For a list of approved absences see: http://catalog.towson.edu/undergraduate/academic-policies/class-attendance-absence-policy/

Email Policy: Some course communication will be done via email. Please check your Towson email daily for any course updates.

Cell Phone/Technology Policy: Upon entering class all cell phones, iPods, iPads, laptops, and any other similar technical devices need to be turned off. If there is a true emergency call you are expecting, let me know before class. Furthermore, text messaging during class time will not be tolerated.

Towson Academic Integrity Policy: This class is conducted in accordance with the Towson University Code of Conduct as described in the TU Catalog or accessed at

https://www.towson.edu/provost/academicresources/documents/03_01_00_student_academic_integrity_policy.pdf

This code prohibits "all forms of dishonesty including cheating (and) plagiarism." Plagiarism is copying the words of another or the use of ideas of another without proper citation.

Course Academic Integrity Policy: For this class, **Cheating or plagiarism in any form** is unacceptable and a penalty commensurate with the offense will be applied. If any potential violation of the academic integrity policy occurs, the course instructor will meet with the student to present the evidence of a violation and request an explanation. If the faculty member determines that a violation has occurred, the faculty member informs the student, in writing, of the academic penalty and of the student's rights of appeal. The range of penalties includes deduction of points or rejection of assignment, failure of course, or a more severe disciplinary action by university authorities. The more severe the violation (in terms of extensiveness and intentionality), the more severe the penalty.

Course Repeat Policy: Students may not repeat a course more than once without prior permission of the department.

Disabilities: This course is in compliance with Towson University policies for students with disabilities. Students with disabilities are encouraged to register with Disability Support Services (DDS), 77200 York Road, Suite 232, 410-704-2638. Students who suspect that they have a disability but do not have documentation are encouraged to contact DSS 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 the Towson University Strategic Plan, the FCSM Diversity Action Plan, and the Department of Mathematics Diversity Action Plan, everyone participating 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, veteran's status, or physical ability. If you feel these expectations have not been met, please speak with Dr. Goode at egoode@towson.edu.

Withdrawal: The last day to withdrawal with a grade of 'W' is November 5, 2018.

Disclaimer: It is the student's responsibility to know all of the information contained in this syllabus. Any changes to the syllabus and course calendar will be announced in class. Students are responsible for these changes whether in attendance or not. It is also the student's responsibility for reviewing the college policies included in the college catalog and the student handbook.