Math 1A: Calculus

Fall 2020

Instructor:	John Jimenez	**Time:**	MTWRF 11:30PM
Email:	jimenezjohn@fhda.edu	**Office Hour**	TWRF 1:45pm-2:35pm

Required Text and Recommended Materials:

- Textbook: Calculus: Early Transcendentals with Hyperbolic Functions, 8th Edition, J. Stewart.

- Calculator: Although not necessary for most of this course, it can sometimes be helpful to have access to some type of graphing calculator. This can be a physical graphing calculator or some kind of free online graphing tool such as https://www.desmos.com/ or https://www.wolframalpha.com/.

- Access to https://deanza.instructure.com/. Canvas is where all of the course information will be available. Information regarding grades, lectures, resources, etc.

Goals for Students in the Course:

- To build a solid foundation for future calculus courses.

- To build confidence in their academic abilities in the math class and beyond.

- Be able to collaborate and discuss mathematics with classmates.

- To gain intuition behind concepts in the course.

Grading:

4 Midterm Exams	Homework	9 Quizzes	2 Projects	Discussions	Final
40 % (at 10% each)	10 %	15 %	10 % (at 5% each)	5%	20 %

Grading scale	
$\geq 100\%$ A+	78-79.9% C+
93-99.9% A	70-77.9% C
90-92.9% A-	68-69.9 % D+
88-89.9 % B+	63-67.9% D
83-87.9% B	60-62.9% D-
80-82.9% B-	≤ 59.9 F

Exams 40 % : There are 4 midterm exams. These exams will be distributed via Canvas as a PDF and students will upload their completed work to Canvas.

Homework 10 % : There will be a homework set assigned each week which will be due one week after it is assigned. Each assignment will be graded on neatness, completeness, correctness, and effort. All work must be shown and solutions must be in order to receive full credit.

Quizzes 15 % : Following each week of class, there will be a collaborative open book/notes quiz due every Friday. This is a collaborative quiz in which I will assign groups. You will work with your groups on the quiz during the class time and there will be a time window following Fridays class in which you can turn the quiz in.

Projects 10 % : There will be two projects throughout the quarter. Details will be given in Canvas.

Discussions 5 % : Each week there will be a discussion board in which you can interact with your classmates about the course content. These discussions serve as a way to interact with others over the material and serve as a place for participation and collaboration.

Final 20 % : The final will be comprehensive. Note that the final will replace the lowest midterm exam score.
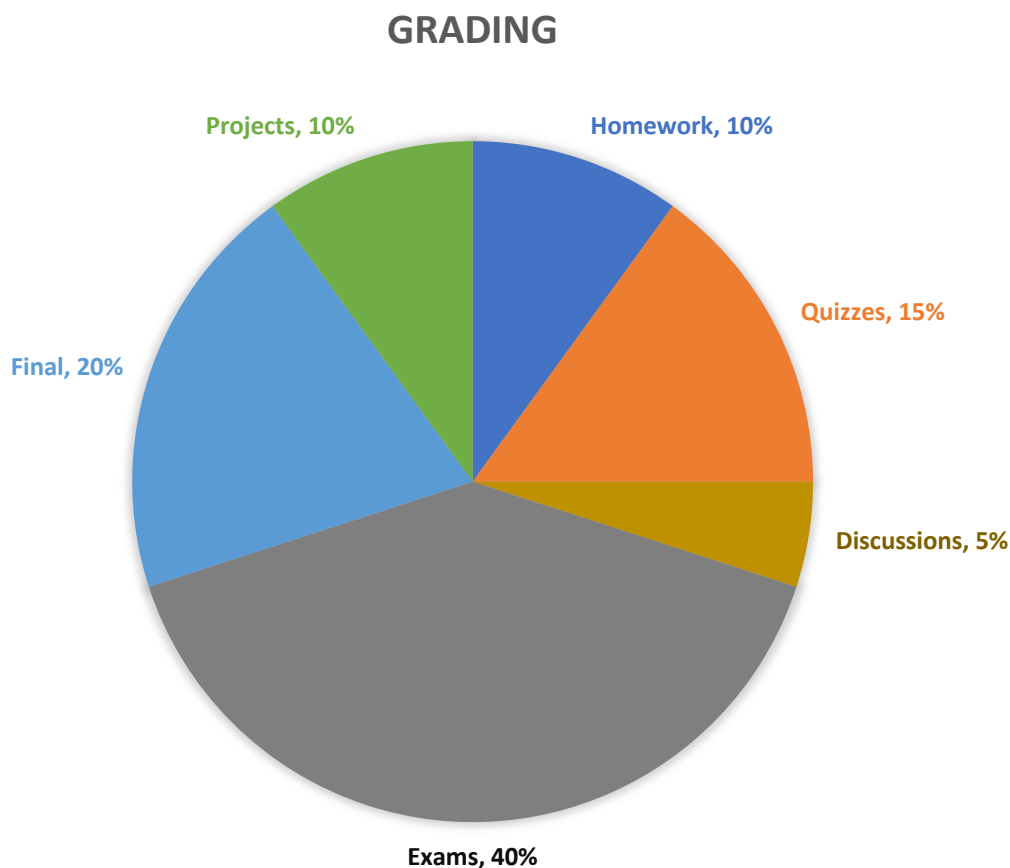
GRADING

Figure 1: Grade breakdown for the course as a percentage.

Extra Credit: There will be ample extra credit opportunities throughout the quarter!

Late Work: No late work will be accepted. Due dates will be clearly given on the assignments in Canvas. There will also not be any make up work. To compensate for illnesses or emergencies, two of the lowest

grades in either the homework or quiz category will be dropped.

Attendance: This class will be synchronously held via Zoom so attending means being present for the courses allotted time during the zoom sessions. As is the case with any class, being present is crucial and necessary for doing well in the course. Note that a student may be dropped from the course if participation is low. Specific reasons leading to dropping a student are given below.

You may be dropped from the course if:

- You miss 2 homework sets in a row.

- You do not interact with Canvas for a week.

- You miss 2 full weeks of synchronous meetings without contacting me prior to missing those meetings.

Note that if for any reason you feel like you may need to drop the course, it is your responsibility to do so.

Academic Integrity: Certain assignments require collaborating with others as well as using resources. However, most of the course work will be independent work. Whether or not you can work with others and use resources for classwork will be clearly stated in the assignments. If it is suspected that academic dishonesty is taking place on an assignment, the college will be notified and will result in a failing grade on the assignment or a failing grade in the class. For further information on academic integrity please refer to https://www.deanza.edu/policies/academic_integrity.html

Help and Support:

- The Math, Science and Technology Resource Center (MSTRC): Here you can access free online tutoring via Zoom. See, https://www.deanza.edu/studentsuccess/ for further details. Net tutor, which can be accessed via Canvas, is another place you can find free online tutoring.

- I encourage students to make use of office hours! This is another great place to get help on material related to the course.

- The discussion boards will be a great place to collaborate with classmates regarding the course content.

Disability Statement: If you have a disability related need for academic accommodations or services in this course, you will need to provide me with a Test Accommodation Verification Form (TAV form) from Disability Support Services (DSS) or the Educational Diagnostic Center (EDC). Students are expected to give a two week notice if they are in need of accommodations. For those students with disabilities, you can obtain a TAV form from their DSS counselor (408 864-8753 DSS main number) or EDC advisor (408 864-8839 EDC main number). The application process can be found here: https://www.deanza.edu/dsps/dss/applynow.html

Course Description: Fundamentals of differential calculus. (5 units)

Student Learning Outcomes:

- Analyze and synthesize the concepts of limits, continuity, and differentiation from a graphical, numerical, analytical and verbal approach, using correct notation and mathematical precision.

- Evaluate the behavior of graphs in the context of limits, continuity and differentiability.

- Recognize, diagnose, and decide on the appropriate method for solving applied real world problems in optimization, related rates and numerical approximation.

Tentative Course Schedule:

Week	Section
1	Some review Ch.1 Tangent Lines 2.1, Limits 2.2
2	Limit laws 2.3, Def of Limit 2.4 Continuity 2.5, Derivatives 2.7, 2.8
3	**Exam 1** Polynomial and exponential derivatives 3.1 Product and quotient rules 3.2
4	**Project 1 assigned** Trig derivatives 3.3 Linear approximation and differentials 3.10 Newton's Method 4.8
5	**Exam 2** Chain rule 3.4 Implicit differentiation 3.5
6	Logarithmic differentiation 3.6 Related rates 3.9
7	**Project 1 due and Project 2 assigned** Hyperbolic functions 3.11 Parametric equations 10.1, 10.2
8	**Exam 3** Infinite limits and horizontal asymptotes 2.6 L'Hôpital's Rule 4.4
9	Maxima and minima 4.1 Mean Value Theorem 4.2 Curve sketching 4.3 - 4.5
10	Thanksgiving Break
11	**Exam 4** **Project 2 Due** Optimization 4.7 Antiderivatives 4.9
12	Final Exam

Important Dates:

Date	
9/21	First day of fall quarter
10/3	Last day to add classes
10/ 4	Last day to drop classes without a W
11/11	Veterans Day holiday: No class
11/13	Last day to drop classes with a "W"
11/26-11/29	Thanksgiving holiday: No class
12/7-12/11	Finals Week

For a more comprehensive list of important dates see http://www.deanza.edu/calendar/.

Student Learning Outcome(s):

*Analyze and synthesize the concepts of limits, continuity, and differentiation from a graphical, numerical, analytical and verbal approach, using correct notation and mathematical precision.
*Evaluate the behavior of graphs in the context of limits, continuity and differentiability.
*Recognize, diagnose, and decide on the appropriate method for solving applied real world problems in optimization, related rates and numerical approximation.