

MATH 1A/1AH

SECTION 1

CRN 31484/36689

WINTER 2020

**Instructor:** Dr. Zack Judson

**Office:** E36B

**Office Hours:** TWThF 9:30-10:20

**Email:** [judsonzack@deanza.edu](mailto:judsonzack@deanza.edu) (Note: I will not answer Math questions over email)

**Prerequisite:** Math 43 or an equivalent course

### Required Materials

- 1) "Calculus Early Transcendentals, 8<sup>th</sup> Edition" by James Stewart
- 2) Calculator: TI83/84 graphing calculator or similar (**calculators will not be used on exams**)

### Accommodations

Those of you who need additional accommodations, due to disability, campus-related activities, or some other reason, please meet with me during the first two weeks of class to discuss your options.

### Grade

Your grade will be computed using the following grade distribution.

5%	Labs	10%	Quizzes
5%	Discussion	40%	Midterms (4)
10%	Homework	30%	Final

### Grading Scale

Due to the complexity of the material the grading scale we will use is as follows

A <sup>+</sup> : 90 – 100	B <sup>+</sup> : 80 – 84	C <sup>+</sup> : 67 – 69	D : 50 – 59	F : 0 – 49
A <sup>-</sup> : 85 – 89	B : 75 – 79	C : 60 – 66		
	B <sup>-</sup> : 70 – 74			

### Midterms

Three exams will be given with no make-ups. The lowest exam will count for 10% while the other two will count for 15% each. If an exam is missed under extreme circumstances and for a very valid reason, an equivalent of the final score will replace the missing exam score. If such extreme circumstances occur it is the students responsibility to inform me immediately and provide documentation of the circumstances.

### Final Exam

A two-hour comprehensive final exam will be given on Monday, March 23 from 7 to 9 am. If a student scores significantly higher or lower on the final than on the other exams, that will be taken into consideration before determining the final grade.

### Discussion

The only way to learn math is to practice math. For this reason, we will be having discussions on an approximately weekly basis. In discussion we will work in groups on additional problems. Your work will be graded on participation and effort.

## **Quizzes**

There will be two types of quizzes given throughout the quarter. The first quiz will be a prerequisite quiz which covers many of the things that you are supposed to know in order to be in this course and which will be used throughout this quarter. You will be given the entire class time for the prerequisite quiz. Approximately weekly, following the attached schedule we will have community quizzes. These quizzes will be 15 to 20 minutes long, but after the first ten minutes you may work with anyone and everyone in the class to complete your quiz. Each community quiz will be scored out of 20 points. The lowest quiz score will be dropped. There will be no make-ups for missed quizzes.

## **Labs**

A half dozen times throughout the quarter we will have lab assignments. The intention behind lab assignments is to encourage students to think more deeply about the material. These labs will be worked on in groups of three or four. There will be some initial time allotted to these lab assignments during class, but you will need to work on them outside of class to complete them. Although every student must turn in a copy of the lab, you will be graded as a group on the assignment. For further information regarding the lab assignments please read the Lab Grading Policies later in this document. No late lab assignments will be accepted. Your lowest lab score will be dropped.

## **Homework**

Homework will be due approximately weekly. The due dates are already listed on the schedule. You need to turn in your assignment as soon as you walk into class, even if you are late to class. The problems must be completed in the order they are assigned, skipping a line between problems. You may use up to two columns on your page (you may not use more than two). If you choose to use two columns you must complete the column on the left before moving on to the column on the right. All pages of the homework must be stapled together. Your name must be on your assignment. Four points of your homework grade are allotted to formatting. On the first assignment you will be penalized 1 point per formatting error. On the second assignment you will be penalized 2 points per formatting error. After the second assignment any formatting error will forfeit all 4 points that are assigned for formatting. Each homework will consist of 20 problems. Four of these problems will be graded for content. These will be graded out of 5 points each. You will not know which 4 problems will be graded. For the remaining 16 problems you will be awarded one point each provided that I believe you attempted the problem. In this way each assignment is worth 40 points. Some homeworks will list Additional Problems. These are required problems that are part of the assignments 20 problems. Each assignment will also list Honors Problems. If you are not taking the honors section of this course you are not required to do the Honors Problems. No late work will be accepted. Your lowest homework score will be dropped.

## **Honors**

If you are taking the honors section of this course you will be required to do the honors problems on the homework assignments. These problems will represent half of your homework grade. In lieu of your discussion grade you will also complete an honors project. The honors project will be similar to a lab assignment except that you will complete it individually.

Tentative Schedule  
Math 1A Winter Quarter 2020

	Monday	Tuesday	Wednesday	Thursday	Friday
January	Introductions Ch. 2.1 6	Review of Functions 7 Ch. 1	Families of Functions 8 Ch. 1	Building Functions 9 Ch. 1	Prerequisite Quiz 10 Hw 1 due
January	Limits Ch. 2.2 13	Lab 1 (part 1) Ch. 2.3 14	Lab 1 (part 2)  15	Limit Laws Ch. 2.3 16	Discussion 1  17
January	Martin Luther King Jr. Holiday 20	Continuity Quiz 1 Hw 2 due 21 Ch. 2.5	Continuity Ch. 2.5 22	Limits at $\infty$ Ch. 2.6 23 Lab 1 due	Discussion 2  27
January	Derivatives Quiz 2 Hw 3 due 27 Ch. 2.7	Derivatives Ch. 2.8 28	Derivatives Ch. 2.8 29	Basic Derivatives 30 Ch. 3.1	Lab 2 Quiz 3 31 Hw 4 due
February	Midterm 1  3	Product and Quotient Rules 4 Ch. 3.2	Trigonometric Derivatives 5 Ch. 3.3	Discussion 3 Lab 2 due 6	The Chain Rule Ch. 3.4 7 Hw 5 due
February	Discussion 4  10	Lab 3 Quiz 4 11	Applications Ch. 3.7 12 Hw 6 due	Linear Approximation 13 Ch. 3.10	Presidents' Holiday 14
February	Presidents' Holiday 17	(Ch. 3.5) Implicit Differentiation 18 Lab 3 due	(Ch. 3.6) Log Differentiation 19 Hw 7 due	Lab 4 Quiz 5 20	Discussion 5 Hw 6 due 21
February	Related Rates Ch. 3.9 24 Hw 8 due	Related Rates Ch. 3.9 25 Quiz 6	Discussion 6  26	Relative Extrema Ch. 4.1 27 Lab 4 due	Mean Value Theorem Ch. 4.2 28 Hw 9 due
March	Midterm 2  2	Discussion 7  3	Derivatives and Graphs 4 Ch. 4.3	Derivatives and Graphs Ch. 4.3 5 Hw 10 due	Lab 5 Quiz 7 6
March	Limits Revisited 9	L'Hospital's Rule 10 Ch. 4.4	Discussion 8  11	Optimization Ch. 4.7 12 Hw 11 due	Quiz 8 Lab 6 13 Lab 5 due
March	Anti-Derivatives Ch. 4.9 16	Discussion 9 Hw 12 due 17	Midterm 4  18	Discussion 10 Lab 6 due 19	Quiz 9 Hw 13 due 20 Exit Survey
March	<b>Final</b> <b>7:00-9:00am</b> 23	  24	  25	  26	  27

Important Dates: January 18: Last day to add a class  
 January 19: Last day to drop with no grade on record.  
 January 31: Last day to request Pass/No Pass grade.  
 February 28: Last day to drop with a "W".

## Lab Grading Policies

Nobody makes it into a Calculus class without being exceptionally bright. For this reason, you may at some time in the past, have decided that it is easier to work alone than to work with others. This is unfortunate for two reasons:

- 1) The further you go in Math (or any other discipline) the more difficult the material becomes. If you go far enough, no matter how smart you are, you will reach a point that you cannot proceed without help.
- 2) Presumably the end result of your education will be to obtain a job that you enjoy and that will maintain you in a style in which you enjoy. Almost certainly this job will require you to work with others.

The labs we will cover in this class serve two purposes, they allow us to dig deeper into the fertile soil of the Calculus and they provide us the opportunity to develop our co-operative skills. Most of you, at some point after you transfer will take a class where a single group project might be worth as much as one of your midterms. It can be difficult to rely on others for such a large part of your grade. To ease you into these dynamics, your labs represent a relatively small part of your grade, each lab accounting for about 1%. Part of your grade for each of these labs will depend on the other members of your group.

**General Grading:** Labs will be scored out of 100 points. Each lab member is required to turn in their own lab report. Failure to turn in a lab report will result in a 0. There will be no late labs accepted. The labs must follow the same formatting rules as the homework with the additional requirement that you must include your **team name** on the front page of your lab. Any formatting errors will result in a loss of four points per error. As I grade each section of the lab, I will randomly select different lab reports to assess. Every member of the lab group will receive the same score for a particular section as the one member whose report I assessed for that section. As a result all labs will be returned to the group rather than the individual members. It is in your best interest to meet with your group outside of class time to make sure that everyone understands and agrees upon conclusions.

**Group Size:** Groups must consist of three or four people. Groups must be declared on the day a lab is introduced. After the first lab you will have the opportunity to choose your own groups provided that everyone who is present on time on a lab day has the opportunity to join a group with at least 3 members. If this is not the case, I reserve the right to reform groups as needed. You may change lab groups with each lab, but you are not required to do so. All lab days are already on your calendar. If you are not there on a lab day, you may still do the lab as a group of 1, but you will be subject to a 20 point penalty. You may, of course, make arrangements with other members of the class to declare yourself as part of their group on the day groups are declared.

**Incompletes:** To avoid groups being penalized for a member who does not complete certain sections you will need to indicate whenever your lab is incomplete. You **MUST** write Incomplete at the top of the front page of your lab and indicate which sections you did not do. Your lab will only be graded out of the sections you completed. Failure to do this may result in a score of 0 for the individual who has an incomplete lab.

**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.