MATH 1A CRN 48737 SECTION 33

This course covers the fundamentals of differential calculus.

Instructor: **Dr Zack Judson**

Time: TTh 11:00-1:15 Room: G5

Drop In Hours: TTh 9:00-10:50 Room: G5

Email: judsonzack@fhda.edu

(Note: I will not answer Math questions over email)

Prerequisite: Precalculus or an equivalent course or placement

Text: "Calculus: Volume 1," Strang and Herman, OpenStax

Student Learning Outcomes

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

Grading Scale

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

A :90−100 B+: 80−84 C+: 67−69 D : 50−59 F : 0−49
A−: 85−89 B : 75−79 C : 60−66
B−: 70−74

All grades will be computed using multiple measures. Students will receive the highest possible grade they achieve through these measures.

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.

Assignments

Exams

Three exams will be given. Each exam will be worth 10% of your grade. If an exam is missed under extreme circumstances and for a very valid reason, an alternative will be found.

Final Exam

A two-hour comprehensive final exam will be given on Tuesday, June 24, from 11:30 to 1:30. The final will represent 25% to 35% of your grade. (see quizzes below)

Quizzes

Quizzes will represent up to 10% of your grade. However, all points that are missed on quizzes will be replaced by your final. For example, if you average a 60% across all quizzes and then score a 75% on the final, you will earn back 75% of the points you had missed on quizzes so that your final quiz score will be a 90%. In this way quizzes are designed to be a place where you can make mistakes and learn from them.

As with your midterms, you are expected to do your own work on quizzes. However, unlike midterms, quizzes will be given asynchronously. On the day a quiz is assigned, you can click on the quiz at any time. The quizzes are designed to be completed in 20 minutes. You will have to answer the questions and upload a pdf of your solutions.

The best way to create a pdf of your work is to do the work by hand. Then take a picture of your work. You can convert your picture to a pdf using any number of free apps. Please be sure you know how to create a pdf before you take your first quiz.

Due to the fact that all missed points are covered by the final, quizzes will only be graded if they are submitted as a single pdf through the CANVAS quiz.

In order to assess your affective learning, there will also be a weekly self-reflection. These self-reflection will be open on Thursday and Friday each week. This will provide you the opportunity to think about your experience with the material covered during the week. This will provide me with the ability to check and see if you have questions. For you, this means an easy 5 quiz points. For me, this means an opportunity to address any confusion you might be having.

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. For this reason, the labs often cover topics you haven't seen in the course. By the time each lab is assigned you will have learned all of the skills you need in order to complete the assignment.

These labs will be worked on in groups of three or four. You will need to work on them outside of class to complete them. Each student must turn in their own lab assignment covering the entire lab. However, the work you submit is not for your grade but for your lab group's grade. All submitted labs will be used to determine the grade for the group on the assignment. No late lab assignments will be accepted. Each Lab will be graded out of 100 points.

At least 3 days prior to the lab due date, we will have a lab check-in day. A rough draft of the lab must be submitted before midnight on the evening immediately preceding the Lab Check-In. Each lab group need only submit a single copy of the rough draft. I will be checking that everyone was involved in the rough draft on your discussion board. The rough draft will be worth 10 points and will be graded solely based upon attempting all parts of the exam and asking meaningful questions about those parts you do not know how to do up to that point.

In addition, each Lab will have a Lab discussion worth 10 points where you will document your interactions with your group. This discussion will be graded both for the work you share with the group and for your responses to the posts of other group members.

Labs will represent 10% of your grade. Your lowest aggregate (sum of rough draft, discussion and final draft) lab score will be dropped.

Group Work

In my experience, every calculus class understands the lecture right up until the point they have to work through a problem. To help facilitate this process, we will often break into groups and work on problems and get our hands dirty. This work will take place in small groups at the whiteboards. Groups will work through the problems one at a time rotating who is writing on the board. The person who is writing out a solution is not the one who is responsible for the content. The rest of the group is responsible for making sure the work is correct. You will be graded based on your active participation both while you are writing on the board and while others are doing the writing.

Group Work will account for 10% of your total grade.

Homework

As with all courses you are expected to put in at least 2 hours of work per unit per week outside of class. Some of this time will be spent on your labs and quizzes and preparing for exams. Other time will be spent learning and practicing the course material. The grade attached to this additional time is your homework. We will have two types of homework in this class. We will have the traditional problem sets, where you are practicing exercises sets on your own and we will also have homework lectures.

Homework Problem Sets.

The only way we can learn mathematics is by practicing mathematics. Each week you will be a problem set of 10 questions, many of these questions will have multiple parts. These problem sets will represent 5% of your grade.

Homework Lectures.

In order to make room for active learning during out time together we will be borrowing elements from the flipped classroom model. Before each class session there will be a collection of lecture videos you are expected to watch. The total time for each group of videos will be about one hour. To honor the time spent watching the videos there will be a short assessment for you to take while watching the videos. Since, the purpose of these assessments is to reflect the time spent watching the lectures, **alternate correct answers will not be accepted. Only the answer reflected in the videos will be awarded credit.** These lecture check-ins will represent 10% of your grade.

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

Office Hours:

T,TH	9:00 AM - 10:50 AM	G5