Fall 2025, MATH 1A, Q01, Calculus 1 and MATH 201A, Calculus 1 Support Syllabus

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Course Description:

This course covers the fundamentals of differential calculus. Specifically, the course includes the basic concepts of analytic geometry, limits, derivatives, and their applications. The topics covered will include graphs and derivatives of algebraic, trigonometric, exponential, and logarithmic functions. Applications, such as motion, differentials, related rates, graphing, and optimization, will be covered.

Student Learning Outcomes:

Upon successful completion of the course, students will be able to:

- 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.

Course Content:

- Introduction to limits, definition of limits, theorems on limits, one-sided limits, computation of limits using numerical, graphical, and algebraic approaches, and the delta-epsilon definition of limit.
- Continuity and differentiability of functions, determining if a function is continuous and differentiable at a real number.
- Limits involving infinity and asymptotes.
- Introduction to derivatives, and the limit definition of the derivative at a real number and as a function.
- Use of differentiation theorems, derivatives of algebraic, trigonometric, inverse trigonometric, exponential, logarithmic, and hyperbolic functions, the chain rule, implicit differentiation, differentiation of inverse functions, and higher order derivatives.
- Use of derivatives for applications including equation of tangent lines, related rates, differentials, and Newton's Method.
- Local/relative and global/absolute extrema of functions.
- Rolle's theorem and the Mean Value Theorem.
- The first derivative test, the second derivative test, and concavity.
- Graphing functions using first and second derivatives, concavity, and asymptotes.
- Applications of extrema, including optimization.

- Indeterminate forms, and L'Hopital's Rule.
- Antiderivatives.

Important Notes:

- **Communication**: You can talk to me in person during office hours, contact me via email (seganjelena@fhda.edu), or via Canvas message. You can expect a response within 24 hours on weekdays and within 48 hours on the weekend. If you don't get a reply back to your email, try Canvas message, and vice versa.
- **Engagement**: Since we are conducting the class in person, I will look for your engagement through participation during our meetings and through the submission of assignments. Be sure to submit all first-week and second-week assignments to get into the "rhythm" of the class.
- **Feedback**: Any feedback on your discussions, problem sets, and written parts of exams will be provided as annotations or assignment comments. If you need additional feedback regarding grading, please email/message me directly about that assessment. I will aim to grade all items within a few days of submission, but you can expect most assignments and assessments to be graded within 1 week of submission.

Textbook and Calculator:

Great news: your textbook for this class is available for **free** online!

https://math.libretexts.org/Courses/De_Anza_College/Calculus_I%3A_Differential_Calculus

You will need a scientific calculator, and occasionally a graphing calculator, for this class. This can be a physical or an online app, such as the one at https://www.desmos.com/.

Weekly Schedule:

- **Monday, Wednesday, Thursday** : We will have in-person meetings from 8:30 a.m. - 10:45 a.m. in S 57 classroom.

- **All days:** Read textbook, work on homework and problem sets, respond to discussion boards, and study!

Office Hours:

- Monday, Wednesday: 11 a.m. -12 p.m. in S 55, or by appointment (email me to schedule).

Homework

The best way to succeed in any math class is to do all of the assigned work correctly and in a timely manner, making sure you really understand what you are doing. Focus on how to think mathematically about problems, not just on following a procedure. Time spent on the homework and problem sets will directly benefit you on quizzes and exams.

You will have homework for each section we cover.

- *Don't squeeze a lot of work into a small amount of space. Leave some white space around the problem for brief comments.*
- *Do the homework problems in* ***order****, showing all work neatly, clearly and completely.*
- *Write your solutions out in full detail, as modeled in the textbook and in lectures. It's important to write up problem sets neatly, showing all work, and explaining the logic behind each step. You should also draw well-labeled and appropriately scaled diagrams and graphs when they are helpful in understanding your solution.*
- *Homework is due on Monday by 10:45a.m, in person or online.*

Weekly Discussions:

Each non-exam week, you will have a weekly discussion prompt that you will need to respond to. These are worth points, so be sure to complete them. When grading these posts, I will look for your engagement with the discussion topic through how well you articulate your thoughts (you won't be graded for spelling and grammar, though you should check them). In case of topics where you are asked to post an example of a type of problem, your response must be original. If you draw significant inspiration from elsewhere, you must cite your source (include the link); otherwise, it's plagiarism. Discussion entries will typically be due on Sundays at 11:59pm.

Quizzes:

We will have **four** 20-minute quizzes (see the calendar at the bottom of this page). These will usually be similar to your homework and problems we worked on in class. You will need to complete them on time to receive credit. *IMPORTANT: Generally speaking, there will be NO MAKEUPS for any of the quizzes, and your lowest quiz score will be dropped. If you're dealing with an unexpected issue, you're welcome to reach out to me. I will see what I can do to help.*

Exams:

We will have **two** midterm exams, and a cumulative final exam. See the tentative schedule for the dates. Exams must be taken at the scheduled time, so pay careful attention to their dates and times.
IMPORTANT: There will be NO MAKEUPS for any of the exams.

NOTE: In case of an unforeseen emergency or illness due to which you cannot take an exam, please get in touch with me immediately, and I can work with you to find a solution. If this happens for the final exam, that may result in an 'Incomplete', provided that you supply me with a sufficient proof.

Your final grade will be computed as follows:

Point Values of Assignments and Assessments		
Category		**Points**
Homework	11 @ 15 points each	165
Participation and Discussions		25
Quizzes	Top 3 @ 20 points each	60
Midterm Exams	2 @ 100 points each	200
Final Exam		150
TOTAL		**600**

Letter Grade based on Overall Percentage	
Overall percentage	**Your grade will be at least**
99% or greater	A+
92% to less than 99%	A
89% to less than 92%	A-
87% to less than 89%	B+
82% to less than 87%	B
79% to less than 82%	B-
75% to less than 79%	C+
70% to less than 75%	C
55% to less than 70%	D
less than 55%	F

Help:

1. Your classmates are a great resource. Ask for help and provide help to others either within your current groups or using the Discussion Board in Canvas (worth extra credit)!
2. Message me through Canvas with questions or attend office hours.
3. Ask questions during class.
4. Get help from De Anza's Math Student Success Center. See details at http://deanza.edu/studentsuccess/.
5. Use NetTutor for help through Canvas.
6. If you need any technical help with MyPortal, Canvas, etc., visit https://www.deanza.edu/quarter-guide/
7. On the link above, you will also find links to services with some specific to this time, such as for help with tech equipment, food and financial assistance, health services, resources for undocumented students, etc.

Academic Integrity:

All students are expected to exercise academic integrity throughout the term. Any instances of cheating or plagiarism will result in disciplinary action, including at minimum, 0 on the assignment or assessment, but may include recommendation for dismissal. You are encouraged to work together on homework but simply copying down from someone else's work is wrong! Cheating on a quiz or an exam is more serious. It will certainly result in getting a 0 on the assessment, but could result in getting an 'F' in the course or dismissal from the class. Also, each incident of cheating will be reported to the Dean of the Physical Science, Mathematics and Engineering Division and the Office of Student Development. Please see the De Anza College's page on Academic Integrity: https://www.deanza.edu/policies/academic_integrity.html. Check out this video produced by De Anza College on this topic: https://www.youtube.com/watch?v=4unoOe-I0eY.

Disability Notice:

If you feel that you may need an accommodation based on the impact of a disability, please contact me privately to discuss your specific needs. Also, please contact Disability Support Programs & Services through https://www.deanza.edu/dsps/ for information or questions about eligibility, services and accommodations for physical, psychological or learning disabilities.

Tips for Success:

Taking college classes comes with a set of challenges, such as staying motivated, speaking up in class, conflicts with work and other responsibilities, working with classmates, getting help, feeling a sense of community with the class, the lack of an ideal workspace, and technical issues, such as device malfunction or unreliable internet access. About half of all students report 'staying motivated' as their greatest challenge in learning.
Reflect on what helps you stay motivated in a class and implement that this quarter. I want to share some of my thoughts on this.

- In any math class, and especially this one, your goal should be to get **ownership** of the material. This means that not only you understand the concepts, and can demonstrate the skills, but also that you can explain them to someone who doesn't have them. The material covered in this class is essential for the next courses in the series. This is not a "learn and forget" class; rather, it's a "learn well so you can succeed going forward" class.
- Here are my recommendations for succeeding in this class:

    1. **Log into Canvas every day!** Do some work related to the class every day. Check for upcoming deadlines and make sure you are aware of them.
    2. **Stay on schedule**. Stick to the schedule on the calendar. Don't fall behind! Be disciplined about this to stay on top of the class. The quarter passes by faster than expected, especially if you're new to the quarter system – and it's almost impossible to catch up, so plan accordingly.
    3. **Invite productive struggle.** To succeed in any STEM class, you must **do your work diligently**. I am aware that there are many sources that can provide you the answers and even the worked solutions. However, **productive struggle** is essential in learning and retaining the material, and in gaining confidence in your problem-solving ability. You must sweat through the problems, especially the ones that challenge you.
    4. **Form a study group**. Exchange your contact information with at least 3 other people in the class community. This will come in handy if you need to miss a class, if you want to work with someone on an assignment, or while studying for an exam. This is an **essential college skill**, especially for STEM students.
    5. **Prepare for quizzes and exams as if they were closed-notes assessments.** Even though all quizzes and exams will be open-book, open-notes, prepare as if you were allowed only paper, pencil and calculator. Preparing this way for quizzes will help you retain the material for exams. Preparing this way for exams will help you retain this material for when you need it for the classes that come next in the sequence. If you are not prepared well for quizzes and exams, you will likely NOT be able to finish them!
    6. **Don't wait to ask for help!** Whether it's to your classmates or me, get your questions answered in a timely manner. If you're dealing with an unusual or an unexpected challenge, please let me know so I can work with you to keep the class manageable, if possible.

Tentative Schedule

	Monday	Wednesday	Thursday
Week 1	Sept 22 Orientations/Questions 2.1	Sept 24 2.2, 2.3	Sept 25 2.1, 2.2, 2.3
Week 2	Sept 29 2.4	Oct 1 2.5 Quiz 1	Oct 2 2.4, 2.5
Week 3	Oct 6 3.1, 3.2	Oct 8 3.3	Oct 9 3.1, 3.2, 3.3
Week 4	Oct 13 3.4, 3.5	Oct 15 Exam 1	Oct 16 3.4, 3.5
Week 5	Oct 20 3.6	Oct 22 3.7	Oct 23 3.6, 3.7
Week 6	Oct 27 3.8	Oct 29 Quiz 2 3.9	Oct 30 3.8, 3.9
Week 7	Nov 3 4.1	Nov 5 4.2	Nov 6 4.1, 4.2
Week 8	Nov 10 4.3	Nov 12 Quiz 3 4.4	Nov 13 4.3, 4.4
Week 9	Nov 17 4.5	Nov 19 Exam 2	Nov 20 4.5
Week 10	Nov 24 4.6	Nov 26 4.7 Quiz 4	Nov 27 No class, Thanksgiving
Week 11	Dec 1 4.8, 4.9	Dec 3 4.10	Dec 4 4.8, 4.9, 4.10
Week 12	Dec 8 No class	Dec 10 Final Exam, 7 AM – 9 AM	Dec 11 No class

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.

Office Hours:

S 55	M,W	11:00 AM - 12:00 PM
S 55	W	11:30 AM - 12:30 PM