W24 MATH D001C Calculus 05Y Bambhania - Syllabus

Class Modality:

This class meets in-person on Monday through Thursday, 9:30am - 10:20am in Room MLC 260, with a one-hour weekly asynchronous component.

Course Description:

This class is the third course in the Calculus sequence at De Anza. We will study the following topics:

- Infinite series
- Lines and planes in three dimensions
- Vectors in two and three dimensions
- Parametric equations of curves
- Derivatives and integrals of vector functions

Student Learning Outcomes:

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

- Analyze infinite sequences and series from the perspective of convergence, using correct notation and mathematical precision.
- Apply infinite sequences and series in approximating functions.
- Synthesize and apply vectors, polar coordinate system and parametric representations in solving problems in analytic geometry, including motion in space.

Course Objectives:

- Examine sequences and series
- Examine and apply the various convergence tests for infinite sequences and series.
- Use power series to represent functions, and use polynomials to approximate them.
- Examine the polar coordinate system, and graph, differentiate and integrate polar functions.
- Investigate vectors in two and three dimensions and perform vector operations.
- Examine vector functions and parametric curves, and graph, differentiate and integrate curves in parametric form; compute arc length.
- Determine the equations of lines and planes.

Expectations:

- **Communication**: I expect you to check your email and log into Canvas every day. I will send occasional reminders or make announcements this way, and I don't want you to miss them. Feel free to contact me via email (bambhaniadoli@fhda.edu) or via Canvas message outside of class with any issues related to the class. You do not have to wait until the next class meeting. 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 the vice versa.
- **Attendance and Engagement**: I expect you to attend each class and be fully engaged with the class throughout the quarter. I will look for your participation during class, during office hours, over email, and through the timely submission of assignments. Be sure to submit all first week and second week assignments to get into the "rhythm" of the class. Please note that if you're not attending class and/or not submitting the assignments during the first two weeks of class in both classes, and not communicating with us, we will assume that you are not interested in the taking the classes and will drop you! In addition to engagement with me, I also expect you to engage with your classmates. - be helpful and ask for help when you need it.
- **Feedback**: Any feedback on your problem sets, quizzes and exams will be provided as either annotation/comment in Canvas or on paper. If you need additional feedback regarding grading (especially automatically graded items such as homework), 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.

Covid Information:

Since this is an in-person class, please familiarize yourself with Covid-related protocols for De Anza College.

- Covid-19 Information: https://www.deanza.edu/healthservices/covid-19.html Links to an external site.

Please note:

- Masks covering the mouth and the nose are recommended but not required for this class.
- If you become infected with Covid during the quarter, you must fill out the Student Self-Reporting Form at https://www.deanza.edu/covid/student-form.html inform your instructor.

Textbook and Calculator:

Great news! Your textbook for this class is available for **free** online!
Calculus, Volume 2 Links to an external site. from OpenStax, ISBN 978-1-947172-14-2

Calculus, Volume 3 Links to an external site. from OpenStax, ISBN 978-1-947172-16-6

You also have an option to download the PDF from the link above if that's easier for you.

You are not required to have any special calculator in this class, though we will occasionally want a scientific calculator. While doing your homework and problem sets, you're welcome to use any online or handheld

calculator. During most quizzes and exams, no calculators will be required, but you may bring a scientific calculator if you like. Graphing and CAS calculators will not be allowed on quizzes and exams.

Prepared Lecture Notes:

Throughout the quarter, I will share prepared lecture notes with you electronically. Please print them, or open them on a tablet if you have the ability to annotate electronically. When you attend class, you are expected to take notes on these. You may take notes on your own blank paper, but that will require you to regularly reference the shared prepared lecture notes to ensure that your notes are complete. Keep all your notes organized in a binder. I strongly recommend that you do this. If you don't have access to a printer or a tablet, you may print them using the ePrintIt app on MyPortal.

Office Hours:

- Monday-Thurday in S-55 (Physical Sciences and Technology Village Room)
- Or, by appointment - on Zoom or in-person (email me to schedule)

Tutoring:

We have a couple of dedicated tutors for our class available for group tutoring. Details coming soon.

Online Homework and Problem Sets

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 and getting the right answer! Time spent on the homework and problem sets will directly benefit you on quizzes and exams.

Online Homework: You will have online homework for each section we cover. The homework uses the free software MyOpenMath, and will be graded for correctness. The links and due dates are within the Canvas Modules, but generally speaking, the Online Homework is due twice a week. You will have 5 late passes, each of which will give you a 24-hour extension on the homework for a particular section with 5% penalty. You may ask me questions on the online HW by using the 'Message Instructor' button.

Problem Sets: Each week, we will have a problem set that you will work on. These problems will be posted as a PDF in the Canvas modules. You are to work them out on paper neatly. These sets include problem-solving and critical-thinking exercises that rely on your conceptual understanding of the material and related skills. While problem sets will be graded for completeness, following the guidelines below. at least one problem very similar to something from the problem set will appear on the next quiz or exam.

Problem Sets Submission Guidelines:

- *Write out the problems neatly on **separate paper**, or on a blank tablet file. There is not enough room on the Problem Set PDF.*
- *You are encouraged to discuss the problems with your classmates, but you must write up your own solutions independently. **Never** copy anyone's work for any reason! Any instances of copying will lead to a grade of '0' on the affected Problem Set.*
- *Do the problems in **order**, showing all work neatly, clearly and completely.*
- *Label each problem clearly – use a **highlighter** to mark the number, or put a **box** around it so it's easy to find. You don't need to write the question, just fully-worked out solutions.*
- *Don't squeeze a lot of work into a small amount of space. Leave some white space around your solutions for brief comments.*
- *Write your solutions out in full detail, as modeled in the textbook and in lectures. You should also draw well-labeled and appropriately scaled diagrams and graphs when relevant.*
- *Submit the Problem Set on paper in class. Alternatively, you may submit it as a **single PDF document** on Canvas. Use a scanning app such as Genius Scan. Your scanned copy must be **legible** and have **correct orientation**.*
- *Problem sets are **due** on **Monday or Tuesdays (see calendar below)** at the **start of class**. You can have a 24-hour **extension** with 10% penalty.*

Participation:

You are expected to actively participate in class. I expect you to:

- Ask and answer questions during class.
- Participate actively in any group work during class.
- Outside of class, post and answer questions in 'Questions Discussion Board' (1 point extra credit for posting or answering a question - up to a maximum of 5 points).

Quizzes:

We will have **seven** 20-minute quizzes (see the calendar at the bottom of this page). They will be based on previous week's material. All of the quizzes are proctored, and in-person.

*NOTE: In general, there will be NO MAKEUPS for any of the quizzes for any reason, and your **lowest two** quiz scores will be dropped. As mentioned above under 'Covid Information', if you become infected with Covid during the quarter, you must fill out the Student Self-Reporting Form at https://www.deanza.edu/covid/student-form.html*

Links to an external site. and inform your instructor.

Exams:

We will have **three** midterm exams, and a cumulative final exam. All of the exams are proctored, in-person exams. See the calendar for the dates.

NOTE: Midterm exams cannot be made up for any reason. Your lowest midterm exam grade will be replaced by the final exam score proportionally if the final exam score is higher. In case of a missed midterm, we will replace that score with the final exam score. If there is an unforeseen emergency or illness due to which you cannot take an exam, including a need to quarantine due to a COVID infection, please do get in touch with me and let me know. As mentioned above under 'Covid Information', you must fill out the Student Self-Reporting Form at https://www.deanza.edu/covid/student-form.html

Links to an external site. and inform your instructor.

NOTE: In case of an unforeseen emergency or illness due to which you cannot take the final exam, inform me immediately. If you are unable to take the final exam during finals week, may result in an 'Incomplete' (provided that you supply me with a sufficient proof).

Evaluation:

Your final grade will be computed as follows:

Point Values of Assignments and Assessments

Category		Points
Homework	21 @ 5 points each	105
Problem Sets	11 @ 10 points each	110
Participation		20
Quizzes	Top 5 @ 20 points each	100
Exams	3 @ 70 points each	210
Final Exam		105
TOTAL		650

Letter Grade based on Overall Percentage

Overall percentage	Your grade will be at least
97% or greater	A+
92% to less than 97%	A
90% to less than 92%	A-
87% to less than 90%	B+
82% to less than 87%	B
80% to less than 82%	B-

75% to less than 80%	C+
70% to less than 75%	C
55% to less than 70%	D
less than 55%	F

Honors Cohort:

This class is offered as an Honors cohort for interested students in the Honors Program. If you are interested in taking this class through the Honors Program, please email me so I can give you the Honors section add code. If you do not know about De Anza's Honors Program, please visit https://www.deanza.edu/honors/ to learn about how it works.

If you take this class as an Honors cohort, you will be required to complete a substantial honors project. Failure to complete the project will result in a reduction of your grade by a full letter grade.

Help:

1. Your classmates are a great resource. Ask for help and provide help to others either within your current groups or using the Questions Discussion Board (worth extra credit)!
2. Message me through Canvas with questions or attend office hours. For online homework questions, message me by using 'Message Instructor' button in the problem.
3. Ask questions during class.
4. Get help from De Anza's Math Student Success Center. See details at http://deanza.edu/studentsuccess/

- Links to an external site..
- Use NetTutor for help through Canvas.
- If you need any technical help with MyPortal, Canvas, etc., visit https://www.deanza.edu/quarter-guide/#Learning

6. Links to an external site..
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 on an assessment 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

Links to an external site.. Check out this video produced by De Anza College on this topic: https://www.youtube.com/watch?v=4unoOe-I0eY

Links to an external site..

A note about Discord: We encourage you to ask and answer questions amongst yourselves to strengthen your understanding of topics in this class using any medium, including Canvas discussion boards and Discord. However, be careful that you don't compromise your academic integrity or entice others to compromise theirs! For example, never answer a classmate's question about a homework problem by providing a complete, fully worked out solution! There are at least two reasons for this: 1) It would create too much of a temptation to copy - not necessarily for the original question poster but other classmates; and 2) Your solution could be incorrect, in which case you would be hindering the class' understanding of the involved concepts and skills. It goes without saying that you should also never discuss anything during a quiz or an exam on Discord or any medium.

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/

Links to an external site. for information or questions about eligibility, services and accommodations for physical, psychological or learning disabilities.

Tips for Success in this Class:

In any math class, and especially this one, your goal should be to get **ownership** of the material. Parts of this class are conceptually important but challenging to grasp. Other parts are conceptually easier and really important for the next class. So be sure to focus on both conceptual understanding and skills development throughout the quarter.

Here are our recommendations for succeeding in the learning community in the online setting:

1. **Do some work for the class every day!** This includes homework, reviewing notes, working on problem sets, studying for exams, or even reading ahead.
2. **Stay on schedule**. Be disciplined about staying on top of the class. Don't allow yourself to fall behind! Always keep your notes up-to-date, clearing up anything confusing along the way. Writing aids memory so you are more likely to retain the material. The quarter passes by faster than expected – especially if you're new to the quarter system – and it's very hard to catch up!
3. **Be fully present in every class.** Allowing yourself to occasionally miss class or multi-task during class is a slippery slope. It can easily turn into a bad habit that will likely cost you the grade you want in this class.
4. **Come to the class prepared and ready to contribute!** Be sure to come to class with all the necessary materials, ready to participate and contribute.

5. **Invite productive struggle.** To succeed in any STEM class, you must **do your work diligently**. We are 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 the confidence in your problem-solving ability. You must sweat through the problems, especially the ones that challenge you.
6. **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.
7. **Turn everything in!** Every homework, every problem set. Don't allow yourself to skip anything!
8. **Prepare well for assessments.** Preparing well for quizzes will help you retain the material for exams. Preparing well for midterm exams will help you retain this material for the final exam and 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 feel pressured for time!
9. **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.
10. **Practice personal discipline**! Succeeding in a college class requires **personal discipline**. This can be especially tough when first starting out in college. It's quite easy to put things off until later, skip some course activities, distract yourself with social media and other apps while doing class activities, etc. A life skill that is good practice this quarter: **Be mindful of what you are giving your attention to.** Think carefully about your priorities, and give the most time and attention to your biggest priorities. When working on your homework, turn off all notifications on your devices, silence your phone and keep it out of reach. Calculus requires focus and it will often challenge you. Don't put off working on something because it's hard or unpleasant. Learning anything that's worthwhile requires a sustained effort! And that practice is what ultimately leads to true personal growth.

Course Calendar:

Math 1C Calculus - Tentative Calendar: Winter 2024

	Monday	Tuesday	Wednesday	Thusday
Week 1	8-Jan Orientation/Questions 5.1 (Vol II)	9-Jan 5.1	10-Jan 5.1, 5.2	11-Jan 5.2
Week 2	15-Jan MLK Jr HOLIDAY	16-Jan Problem Set 1 due **Quiz 1** 5.3	17-Jan 5.3	18-Jan 5.4
Week 3	22-Jan Problem Set 2 due **Quiz 2** 5.4, 5.5	23-Jan 5.5	24-Jan 5.5, 5.6	25-Jan 5.6
Week 4	29-Jan Questions 6.1	30-Jan Problem Set 3 due **Midterm Exam 1** **(covers 5.1-5.6)**	31-Jan 6.1	1-Feb 6.2
Week 5	5-Feb Problem Set 4 due **Quiz 3** 6.2	6-Feb 6.3	7-Feb 6.3	8-Feb 6.4
Week 6	12-Feb Problem Set 5 due **Quiz 4** 6.4	13-Feb 6.4, 1.3 (Vol III)	14-Feb 1.3, 1.4	15-Feb 1.4
Week 7	19-Feb Presidets' HOLIDAY	20-Feb Problem Set 6 due **Quiz 5** 2.1	21-Feb 2.1, 2.2	22-Feb 2.2, 2.3
Week 8	26-Feb Questions 2.3	27-Feb Problem Set 7 due **Midterm Exam 2** **(covers 6.1-6.4, 1.3-1.4)**	28-Feb 2.3, 2.4	29-Feb 2.4, 2.5
Week 9	4-Mar Problem Set 8 due **Quiz 6** 2.5	5-Mar 2.5	2-Jan 3.1	3-Jan 3.2
Week 10	11-Mar Problem Set 9 due **Quiz 7** 3.2	12-Mar 3.3	13-Mar 3.3	14-Mar 3.3
Week 11	18-Mar Questions 3.4	19-Mar Problem Set 10 due **Midterm Exam 3** **(covers 2.1-2.5, 3.1-3.3)**	20-Mar 3.4	21-Mar 3.4 Review for Final Exam
Finals Week	25-Mar NO CLASS MEETING	26-Mar Problem Set 11 due **FINAL EXAM** **9:15 a.m. - 11:15 p.m.**	27-Mar NO CLASS MEETING	28-Mar NO CLASS MEETING

Student Learning Outcome(s):

• Analyze infinite sequences and series from the perspective of convergence, using correct notation and mathematical precision.
• Apply infinite sequences and series in approximating functions.
• Synthesize and apply vectors, polar coordinate system and parametric representations in solving problems in analytic geometry, including motion in space.

Office Hours:

M,T,W,TH	01:30 PM	02:30 PM	In-Person	S-55