Math 1B – 17 – Calculus II - Course Syllabus

Class Modality:

This class meets in-person on **Mondays** and **Wednesdays**, **1:30 - 3:45 p.m.** in Room **MLC 260**.

Course Description:

This course covers the fundamentals of integral calculus. Specifically, the course explores indefinite and definite integrals, and their applications. The topics covered will include antiderivatives of all of the functions you learned in precalculus and their combinations. We will also cover applications, such as, motion, area, volume, arclength, surface area, work, center of mass, probability and differential equations.

Student Learning Outcomes:

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

- Analyze the definite integral from a graphical, numerical, analytical, and verbal approach, using correct notation and mathematical precision
- Formulate and use the Fundamental Theorem of Calculus
- Apply the definite integral in solving problems in analytical geometry and the sciences

---

Course Content:

- Analyze and explore aspects of the integral calculus
- Analyze and evaluate the definite integral as a limit of a Riemann sum and examine its properties
- Examine the Fundamental Theorem of Calculus
- Find definite, indefinite, and improper integrals using various techniques
- Apply the definite integral to applications
- Examine differential equations

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, 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. 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 me, I will assume that you are not interested in the taking the classes and may drop you!

- **Feedback**: Any feedback on your discussions, 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 on 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.

Protecting self and others from respiratory viruses:

Since this is an in-person class, should you become sick with a respiratory virus, please familiarize yourself with and follow the guidelines and protocols for De Anza College.

- You can find information and guidelines here: https://www.deanza.edu/covid/protocols.
- Please wear a mask to protect others if you're getting sick or recovering from Covid, the flu or another respiratory virus.
- Don't hesitate to put on a mask (there should be some in the classroom) for your safety at any time.

Textbook and Calculator:

Great news! Your textbook for this class is available for **free** online!
Calculus, Volume 2 from OpenStax. ISBN-13: 978-1-947172-14-2

You can view online or download the book from the site. You can use whichever formats you want. Web view is recommended -- the responsive design works seamlessly on any device.

You are not required to have any special calculator in this class. While doing your homework and problem sets, you're welcome to use any online (such as Desmos) or handheld calculator. During 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:

I have put together prepared lecture notes designed to help you keep your lecture contents organized. Here is the file: Math 1B - Prepared Lecture Notes.pdf Download Math 1B - Prepared Lecture Notes.pdf Please print the file, or open it on a tablet if you have the ability to annotate electronically. When you attend class, you are expected to take notes on these. Keep all your notes organized in a binder. I strongly recommend that you do this.

Office Hours:

- Monday and Wednesday 10-11am in PST Village (S-55) and on Zoom (https://fhda-edu.zoom.us/j/89884034112.)

- Tuesday and Thursday 12:30-1:00pm in MLC 2nd floor lounge area
- Friday 11:30-12:30pm on Zoom (https://fhda-edu.zoom.us/j/81339900072.)
- Or, by appointment (Send me a Canvas message or email bambhaniadoli@fhda.edu to set up)

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 developing ownership of the concepts and skills in the homework and problem sets will directly benefit you on quizzes and exams.

<u>Online Homework</u>: 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.

<u>Problem Sets</u>: Each week, we will have a problem set to 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.

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.*
- *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.*
- *You are encouraged to use resources such as classmates, tutors and AI, but you must **write up your own solutions independently**!*
- *Write out your solutions in full detail, as modeled in the textbook and in lectures. You should also draw well-labeled, appropriately scaled, and relevant diagrams and graphs.*
- *Submit the Problem Set on paper in class or 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 **Mondays** typically at the **start of class**. You can have a 24-hour **extension** with 10% penalty.*

Discussions:

There will be some discussion prompts that you will need to respond to spread throughout the quarter. These are worth points, so be sure to complete them.

Participation:

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

- Ask and answer questions during during class.

- Participate actively in any group work during class.
- Post and answer questions in 'Questions Discussion Board' (0.5 point extra credit for posting or answering a question) outside of class.

Quizzes:

We will have **five** 20-minute in-class quizzes. The quizzes will be based on previous week's material. They are all proctored, in-person quizzes. See the calendar for the dates.

*NOTE: There will be NO MAKEUPS for any of the quizzes, but your **lowest two** quiz score will be dropped to allow for a rare absence on a quiz day.*

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: There will be NO MAKEUPS for any of the exams, but your **lowest** midterm exam score will be replaced by the final exam score proportionally. If you miss a midterm exam, your grade will be replaced by the final exam score proportionally.*

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	Top 25 @ 4 points each	100
Problem Sets	Top 10 @ 7 points each	70
Discussions	5 @ 4 points each	20
Participation		20
Quizzes	Top 4 @ 20 points each	80
Exams	3 @ 80 points each	240

Final Exam	120
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. You may use the Questions Discussion Board (worth extra credit: 0.5 point per substantial entry)!
2. Message me through Canvas with questions or attend office hours.
3. For online homework questions, message me by using 'Message Instructor' button in the problem.

4. Ask questions during class.
5. Get help from De Anza's Math Student Success Center. See details at http://deanza.edu/studentsuccess/.
6. Use NetTutor for 24-hour chat-based help through Canvas.
7. For help with tech equipment, food and financial assistance, health services, resources for undocumented students, etc at https://www.deanza.edu/services/.

Academic Integrity:

Students are required to comply with all rules and regulations as outlined in the De Anza College Student Handbook http://www.deanza.edu/studenthandbook/index.html. (especially the section on academic integrity). 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, but simply copying down from someone else's work (human or not), or allowing someone copy your 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. Each incident of cheating on an assessment will be reported to the Dean of the Physical Science, Mathematics and Engineering Division and reported to the college as a student code of conduct violation. 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.

A note about Discord: I 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! 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.

Disability Notice:

De Anza College views disability as an important aspect of diversity, and is committed to providing equitable access to learning opportunities for all students.

Disability Support Services (DSS) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations If you have, or think you have, a disability in any area such as, mental health, attention, learning, chronic health, sensory, or physical, please contact DSS to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with DSS and have accommodations set by a DSS counselor, please be sure that I have received your accommodation letter from Clockwork early in the quarter to review how the accommodations will be applied in the course.

DSS Location: RSS Building, Suite 141 http://www.deanza.edu/DSS/ Phone: 408-864-8753 Email: DSS@deanza.edu

Tips for Success in this Class:

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 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, and 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 confusion along the way. Writing aids memory so you are more likely to retain the material. The quarter passes by faster than expected, and it can be very hard to catch up!
   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.
3. **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.
4. **Invite productive struggle.** You must approach any STEM with **diligence** and **honesty**. 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. Find the grit to work through especially challenging ones.
5. **Form a study group**. Exchange your contact information and develop companionship with at least 3 other people in the class community. This will help if you miss a class, you want to work with someone on an assignment, or while studying for quizzes and exams. This is an **essential college skill**, especially for STEM students.
6. **Turn everything in!** Every homework, every discussion, every problem set. Don't allow yourself to skip anything!
   Prepare well for assessments. Preparing well for quizzes will help you retain the material for exams. Create review notes or summaries throughout the quarter. Preparing well 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!
7. **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 us know so we can work with you to keep the class manageable, if possible.
8. **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 to 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, and silence them. 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 growth.

Course Calendar:

Math 1B Calculus (MW) - Tentative Calendar: Winter 2025

	Monday	Wednesday
Week 1	6-Jan Orientation/Questions 1.1	8-Jan 1.2, 1.3
Week 2	13-Jan Problem Set 1 due **Quiz 1** 1.3	15-Jan 1.4, 1.5
Week 3	20-Jan HOLIDAY: MLK Day	22-Jan Problem Set 2 due 1.5, 1.6, 1.7
Week 4	27-Jan Problem Set 3 due **Midterm Exam 1 (covers 1.1-1.7)** 2.1	29-Jan 2.2
Week 5	3-Feb Problem Set 4 due **Quiz 2** 2.3	5-Feb 2.4, 2.5
Week 6	10-Feb Problem Set 5 due **Quiz 3** 2.5	12-Feb 2.6, 3.1
Week 7	17-Feb HOLIDAY: Presidents' Day	19-Feb Problem Set 6 due 3.2, 3.3
Week 8	24-Feb Problem Set 7 due **Midterm Exam 2 (covers 2.1-3.2)** 3.3	26-Feb 3.4, 3.5
Week 9	2-Mar Problem Set 8 due **Quiz 4** 3.6	4-Mar 3.6, 3.7
Week 10	9-Mar Problem Set 9 due **Quiz 5** Probability	11-Mar 7.2, 4.1
Week 11	16-Mar Problem Set 10 due **Midterm Exam 3 (3.3-4.1)** 4.2	18-Mar 4.3, 4.4
Finals Week	23-Mar **Final Exam** **1:45 - 3:45 pm**	25-Mar

Student Learning Outcome(s):

• Analyze the definite integral from a graphical, numerical, analytical, and verbal approach, using correct notation and mathematical precision.
• Formulate and use the Fundamental Theorem of Calculus.
• Apply the definite integral in solving problems in analytical geometry and the sciences.

Office Hours:

M,W	10:00 AM	11:00 AM	In-Person	S-55
T,TH	12:30 PM	01:00 PM	In-Person	MLC 2nd floor lounge
F	11:30 AM	12:30 PM	Zoom	