Math 1D: Calculus – Fall 2022

Mondays, Tuesdays, Wednesdays and Thursdays 11:30 am – 12:20 pm in S-46

Instructor: Dr. Cheryl Jaeger Balm
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This is a HYBRID class which requires you to be on campus four days a week.

– Each week you will have 4 hours of class **in-person** and 1 hour online asynchronous.
– All midterm exams and the final exam will be **in-person**.

Tips for success (however YOU define it!):

- Expect to spend 6-10 hours a week outside of class studying and working on at-home assignments. *Schedule these hours just as you would work or class!*
- Form a study group, and make use of the tutoring center.
- Come to office hours, and start your assignments early so you can ask questions in office hours.
- Make an appointment to meet with me (virtually or in-person) if you are busy during regular office hours or want to talk one-on-one.

Office Hours
Tuesdays and Wednesdays, 11:00 – 11:30 am, in S-46
Mondays, Wednesdays and Thursdays, 12:30 – 1:20 pm, in S-44

Attendance: Students enrolled in this class are expected to be present **in-person** for all class meetings. If you miss a class, you are responsible for covering the material before you return to class. You should get notes from a classmate and read the corresponding section(s) of the textbook. You are also responsible for knowing about any changes to the syllabus and/or schedule that may be discussed in class. **Please stay home if you are not feeling well or awaiting results from a COVID test**, but otherwise you should plan to attend all class meetings.

Textbook: *Stewart, Calculus Early Transcendentals* (9th edition)

Canvas: All class assignments and announcements will be on **Canvas**, which you can access through MyPortal. It is strongly recommended that you also download the **Canvas app** if you have a smart phone. Canvas messages is the best way to email your instructor.

Once you have accessed **Canvas**, please go to Account → Notifications and adjust your **Notification Preferences** so that you have selected **"Notify me right away"** for Announcement, Submission Comment and Conversation Message. Other notification settings are up to you.

Calculators: No calculators are required for this class, but you will be permitted to use a ***scientific calculator without graphing capabilities*** during exams. In addition, a graphing calculator may be helpful during your homework, or you can use the free websites `wolframalpha.com`, `desmos.com` and `geogebra.org/3d`.

Cell phones and other devices: You may bring a laptop or tablet to class to access your eBook or to take notes. However, cell phones, tablets, laptops and other electronic devices must not become a distraction to you or your classmates. If I see or hear you using a device during class to access unrelated content, I may confiscate the device until the end of that class meeting. You will not be allowed to use a cell phone or tablet during any exams.

Homework: At the end of this syllabus there is a list of suggested homework problems for each section that we will cover in your textbook. This homework will NOT be collected or graded. However, solving these problems is essential to understanding the class material (and to passing your exams!). After each class, you are expected to work on all relevant assigned problems before the next class meeting. *Do not save all your homework for the weekends; you will fall behind!*

Podcast: You will create a 3 – 6 episode podcast for this class. Details are in the Podcast Project instructions. **Your podcast will account for 21% of your course grade (7% per regular episode).**

Quizzes: There will be 7 quizzes throughout the quarter. All quizzes will be take-home. They will be handed out at the end of class on Thursday and due at the *start of class* the following Monday. To best prepare for your exams, you should study for each quiz, and start the quiz with a 30-minute timer and without using your book, notes or classmates. Once you have done as much as your can in this setting, you know what you must study more before the next midterm, and you can complete the quiz using outside resources. **Remember, there is a difference between collaborating and cheating!** Your lowest quiz grade will be dropped. **Quizzes will account for 24% of your course grade (4% each).**

Midterm Exams: There will be 3 in-class, closed-book midterm exams. Each midterm will focus on a single chapter of your textbook. The midterm exam dates are **Thursday, Oct. 13** (Ch. 14), **Monday, Nov. 7** (Ch. 15) and **Wednesday, Dec. 7** (Ch. 16). If a midterm exam is missed for a valid reason and a make-up cannot be arranged, an equivalent of the final exam score will replace the missing exam score. No extra credit can be applied to a missed or make-up exam. **Each midterm exam will account for 15% of your course grade.**

Final Exam: Your final exam will be in-person **Monday, Dec. 12, 11:30 am – 1:30 pm**. It will be cumulative. **Your final exam will account for 10% of your course grade.**

Course Grades:

Podcast	6 Quizzes	3 Midterms	Final
21% (7% each)	24% (4% each)	45% (15% each)	10%

Grade	A	B	C	D
Overall percent	≥ 90	≥ 80	≥ 70	≥ 60

Disability Statement: De Anza College makes reasonable accommodations for people with documented disabilities. Please notify Disability Support Programs and Services (DSPS) if you have any physical, psychological or other disabilities, vision or hearing impairments or ADD/ADHD. More details can be found here `https://www.deanza.edu/dsps/`

Academic Integrity: Learning involves the pursuit of truth, which cannot be pursued by presenting someone else's work as your own. Each student must pursue their academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Any suspected instance of academic dishonesty on any assignment will be reported to the college and may result in a 0 on the assignment and/or a failing grade in the class. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to `https://www.deanza.edu/policies/academic_integrity.html`.

Student Learning Outcomes (aka what I hope you can do at the end of Math 1D):

1. Apply analytic, graphical and numerical methods to study multivariable and vector-valued functions and their derivatives, using correct notation and mathematical precision.
2. Use double, triple and line integrals in applications, including Green's Theorem, Stokes' Theorem and Divergence Theorem.
3. Synthesize the key concepts of differential, integral and multivariate calculus.

Tentative class schedule (subject to change):

Week	**Monday**	**Tuesday**	**Wednesday**	**Thursday**
Wk 1: Sept. 26-29	Multivariable functions & level curves (14.1)	Limits & continuity (14.2)	Partial derivatives (14.3)	Tangent planes (14.4A) **Quiz 1 due Monday**
Wk 2: Oct. 3-6	Differentials (14.4B)	Chain rule (14.5)	Directional derivatives (14.6A)	Directional deriv. cont. (14.6B) **Ch. 14 podcast episode due Sunday** **Quiz 2 due Monday**
Wk 3: Oct. 10-13	Extreme values (14.7)	Lagrangian multipliers (14.8)	Review	**EXAM 1**
Wk 4: Oct. 17-20	Quadric surfaces (12.6)	Double integrals (15.1)	Double integrals cont. (15.1 & 15.2)	Double integrals cont. (15.2) Ch. 14 bonus episode due Sunday (EC) **Quiz 3 due Monday**
Wk 5: Oct. 24-27	Double integrals in polar coordinates (15.3)	Mass & inertia (15.4A)	Probability (15.4B) & surface area (15.5)	Triple integrals (15.6) **Ch. 15 podcast episode due Sunday** **Quiz 4 due Monday**
Wk 6: Oct. 31 - Nov. 3	Cylindrical coordinates (15.7)	Spherical coordinates (15.8)	Jacobians (15.9)	Review
Wk 7: Nov. 7-10	**EXAM 2**	Vector fields (16.1)	Line integrals (16.2A)	Work (16.2B) Ch. 15 bonus episode due Sunday (EC) **Quiz 5 due Monday**

Week	**Monday**	**Tuesday**	**Wednesday**	**Thursday**
Wk 8: Nov. 14-17	Fundamental Theorem of Line Integrals (16.3A)	Conservative vector fields (16.3B)	More line integrals (16.2C)	Green's Theorem (16.4) **Quiz 6 due Monday**
Wk 9: Nov. 21-24	Curl & div (16.5)	Parametric surfaces (16.6A)	Optional review day	**NO CLASS TODAY Ch. 16 podcast episode due Sunday**
Wk 10: Nov. 28 - Dec. 1	Surface area again (16.6B)	Surface integrals (16.7A)	Flux (16.7B)	Stokes Theorem (16.8) Ch. 16 bonus episode due Sunday (EC) **Quiz 7 due Monday**
Wk 11: Dec. 5-8	Divergence Theorem (16.9)	Review	**EXAM 3**	Review **All podcast resubmissions due SATURDAY**
Wk 12: Dec. 12	**FINAL EXAM 11:30 - 1:30**			

Suggested homework problems:

Chapter 14

- **14.1:** #1, 3, 5, 7, 11, 15, 17, 33, 35, 36, 38, 45, 47, 49, 51, 61-66 all (21 problems)
  - *For #61-66, you may want to use GeoGebra to check your answers*
- **14.2:** #7-25 odd (10 problems)
- **14.3:** #3, 6, 9, 13-21 odd, 25, 27, 29, 37, 41, 43, 47-59 odd, 67, 68 (23 problems)
- **14.4 Part A:** #1-9 odd, 15, 17, 19, 25, 27 (10 problems)
- **14.4 Part B:** #31, 33, 35, 39, 41, 43, 47, 49 (8 problems)
- **14.5:** #3, 5, 7, 11, 13 ,15, 17, 25, 27, 29, 43 (11 problems)
- **14.6 Part A:** #9-19 odd (6 problems)
- **14.6 Part B:** #26, 27, 29, 31, 33, 39, 47, 49, 51 (9 problems)
- **14.7:** #1, 5, 9, 11, 19, 21, 33, 35, 37, 39, 59 (11 problems)
- **14.8:** #1, 5-13 odd, 27, 29, 35, 39 (10 problems)

Chapter 15

- **12.6:** #1, 3, 5, 9-13 all, 15, 17, 23-30 all (18 problems)
- **15.1:** #6, 15-23 odd, 27, 29, 31, 33, 38, 39-49 odd, 53, 54 (19 problems)
- **15.2:** #1-13 odd, 19, 23-31 odd, 45, 55, 57, 61, 63, 65, 71 (20 problems)
- **15.3:** #1-15 odd, 23-31 odd, 35, 37, 39, 41, 45 (18 problems)
- **15.4 Part A:** #3, 5, 9, 11, 19, 25 (6 problems)
  - *For #19, do not find I_0. For #25, do not find $\bar{\bar{x}}$ and $\bar{\bar{y}}$.*
- **15.4 Part B:** #29, 31 (2 problems)
- **15.5:** #1-13 odd (7 problems)
- **15.6:** #3-17 odd, 21, 43, 45, 55 (12 problems)
- **15.7:** #15, 19, 21, 23, 25, 31 (6 problems)
- **15.8:** #17-27 odd, 31(a) (7 problems)
  - *For #17, you do not need to sketch the solid.*
- **15.9:** #1, 7, 9, 11, 13, 17, 19, 21, 25, 27, 29 (11 problems)

Chapter 16

- **16.1:** #3, 5, 7, 13-22 all, 25, 27, 29, 31-34 all, 37, 39 (22 problems)
- **16.2 Part A:** #1, 3, 9, 11, 19, 21, 23, 31 (8 problems)
- **16.2 Part B:** #41, 43, 53 (3 problems)
- **16.3 Part A:** #1, 2 (2 problems)
- **16.3 Part B:** #3-29 odd, 35 (15 problems)
- **16.2 Part C:** #5, 7, 13, 15, 17, 32(a), 34(a) (7 problems)
- **16.4:** #1-15 odd (8 problems)
- **16.5:** #1, 3, 5, 7, 14, 15, 17, 19 (8 problems)
- **16.6 Part A:** #1, 13-18 all, 33, 35, 37 (10 problems)
- **16.6 Part B:** #41-49 odd (5 problems)
- **16.7 Part A:** #5-17 odd (7 problems)
- **16.7 Part B:** #21-31 odd (6 problems)
- **16.8:** #1-13 odd, 15(a), 17, 19 (10 problems)
- **16.9:** #1-13 odd (7 problems)