

Math 1D-61, Winter 2015 (01240)

Calculus (fourth quarter); TTh 6:30-8:45 pm; S-54

Text: Stewart, Calculus: Early Transcendentals, 7th

Office Hours: Before and after class -- TTh 6:00 - 6:30 pm and 8:45 - 9:15 pm or by appointment

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Syllabus: Partial derivatives, multiple integrals, vector calculus. Prerequisite: Mathematics 1C (with a grade of C or better) or equivalent.

Equipment: Graphing calculator (numerical but not symbolic).

Week (Monday) Topics (with reference to chapters and sections in Stewart)

1 (1/5)	Introduction; 12.6 (quadric surfaces); 14: 1-2 (functions of several variables, limits/continuity)
2 (1/12)	14: 3-4 (partial derivatives, tangent planes, differentials); Quiz #1; 14: 5 (chain rule)
3 (1/19)	14: 6-7 (directional derivative/gradient, extrema); Quiz #2; 14: 8 (Lagrange Multipliers)
4 (1/26)	*Test #1 (27 January);* 15: 1-3 (double integrals in rectangular coordinates)
5 (2/2)	15: 4-5 (double integrals in polar coordinates, applications); Quiz #3
6 (2/9)	15: 6, 16: 6 (surface area); Quiz #4; 15: 7 (triple integrals)
7 (2/16)	15: 8-9 (cylindrical and spherical coordinates); Quiz #5; 15.10, 16.6 (change of variables)
8 (2/23)	*Test #2 (24 February);* 16: 1 and 5 (vector fields, curl and divergence)
9 (3/2)	16: 2 and 7 (line and surface integrals); Quiz #6; 16: 3 (fundamental theorem for line integrals)
10 (3/9)	16: 4, 8, and 9 (Green's, Stokes's, and Gauss's theorems); Quiz #7; 16: 10 (review)
11 (3/16)	*Test #3 (17 March);* Review
12 (3/23)	**Final Examination, 24 March, 6:15 to 8:15 pm**

Course Requirements: The course will consist of a combination of teacher demonstrations with student participation in discussions, individual, and group work.

1. There will be seven Homework **Quizzes** during the quarter based upon the suggested problems. No make-ups will be given unless arranged in advance. Students should work problems in addition to those suggested.

[The lowest quiz score will be dropped to compute the course grade.]

2. There will be three in-class **Tests**. Note the dates; no make-ups will be given unless arranged in advance.

[If higher, one-half of the score on the final exam replaces the lowest test to compute the course grade.]

3. There will be a two-hour **Final Examination** on Tuesday, March 24, from 6:15 to 8:15 pm.

Any student missing the final exam will fail the course; no excuses are acceptable.

Grading:	Quizzes	(6 X possible 25 points each)	150
	Tests	(3 X possible 50 points each)	150
	Final Exam	(1 X possible 100 points)	<u>100</u>
			400 points

Course grades will reflect the following percentage range of total scores:

A = $90 \leq \% \leq 100$ [360–400] C = $60 \leq \% < 75$ [240–300] F = below 50% (below 200)

B = $75 \leq \% < 90$ [300–360] D = $50 \leq \% < 60$ [200–240]

Grades of B+, B-, and C+ will be used as the distribution of point totals warrants; A- will not be used.

Attendance: Regular attendance is expected. A student who misses any class during the first two weeks of the quarter may be dropped from the course. Inform the instructor, in advance, of any necessary absences; telephone the instructor and leave a message if an emergency arises. Note, however, that it is the **student's responsibility** to formally "drop" the course.

Protect your academic record by observing these deadlines:

19 January to drop with no record

30 January for P/NP option

27 February to drop with a "W"

Learning Outcomes for Math 1D include:

- Graphically and analytically synthesize and apply multivariable and vector-valued functions and their derivatives, using correct notation and mathematical precision.
- Use double, triple, and line integrals in applications, including Green's, Stokes's, and Gauss's theorems.
- Synthesize the key concepts of differential, integral, and multivariate calculus.

The key to success in any mathematics course is working homework. Listed here are "suggested problems" that will be used as a basis for the Quizzes. This is not meant to be a comprehensive selection of problems; you should work plenty of problems for practice. The text contains answers for the odd numbered problems. In addition, the Students' Solutions Manual, containing worked solutions to the odd problems, is on reserve in the Learning Center.

Please, also, utilize the Tutorial Center for assistance and group work.

Be sure to check the web site, <http://www.deanza.edu/faculty/hansen>, and its "Notes to Students" page for updates.

Suggested Problems Problems are referenced to Stewart, Calculus: Early Transcendentals (7th Edition).

- 12.6 3, 11, 17, 24, 33
- 14.1 7, 9, 11, 13, 15, 17, 27, 29, 39-42, 45, 49
- 14.2 3-4, 7, 9, 11, 13, 15, 21, 25, 33, 35, 37, 39
- 14.3 3, 5-8, 10, 11, 15, 21, 29, 37, 39, 43, 45, 49, 51, 53, 63, 67, 71, 73, 74
- 14.4 5, 11, 19, 21, 25, 29, 31, 33, 35, 43, 45 (in class), 46
- 14.5 3, 5, 11, 13, 14, 15, 23, 25, 27, 29, 33, 35, 37, 39, 45, 53, 58
- 14.6 3, 5, 7, 9, 13, 17, 18, 21, 25, 27, 29, 31, 39, 43, 49
- 14.7 3, 5, 7, 8, 15, 17, 19, 31, 35, 39, 43, 49
- 14.8 1, 5, 7, 13, 15, 21, 23, 27, 39
- 15.1 1, 3, 5, 9, 11, 13
- 15.2 1, 5, 7, 11, 19, 21, 23, 24, 27, 35, 37
- 15.3 1, 7, 13, 15, 17, 19, 23, 29, 35, 43, 51, 57
- 15.4 5, 9, 15, 19, 27, 29, 31, 33, 35
- 15.5 1, 3, 7, 11, 17, 27
- 15.6 1, 5, 7, 11, 13, 15
- 15.7 5, 11, 17, 21, 27, 31, 33, 41
- 15.8 19, 23, 27, 29
- 15.9 17, 19, 25, 29, 35
- 15.10 9, 11, 13, 15, 19, 23
- 16.1 5, 13, 11-18, 21, 25, 29-32, 35
- 16.2 3, 5, 7, 11, 15, 19, 21
- 16.3 3, 5, 17, 19, 23, 25-26, 29
- 16.4 1, 3, 5, 7, 9, 11, 13, 17, 19, 27, 30, 31
- 16.5 3, 5, 7, 9-11, 15, 17, 19, 21, 22, 25, 27
- 16.6 5, 13-18, 21, 23, 26, 33, 35, 39, 41, 47, 53
- 16.7 3, 5, 7, 11, 15, 21, 25, 27, 29, 31
- 16.8 3, 5, 7, 9, 13, 15
- 16.9 1, 3, 5, 7, 9, 11, 13, 17