Math 1D-21, Fall 2016 (24012)   Richard Hansen; S-52B; (408) 864-8577
Calculus (fourth quarter); TTh 4:00-6:15 pm; S-44   email: HansenRichard@fhda.edu
Text: Stewart, Calculus: Early Transcendentals; 7th   web page: http://www.deanza.edu/faculty/hansen
Office Hours: Before and After class -- TTh 3:30 - 4:00 pm and 6:15 - 6:45 pm or by appointment

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 -- see the restriction document on the website).

Week (Monday)   Topics (with reference to chapters and sections in Stewart, 7th edition)

1 (9/26)   Introduction; 12.6 (quadric surfaces); 14: 1-2 (functions of several variables, limits/continuity)

2 (10/3)   14: 3-4 (partial derivatives, tangent planes, differentials); Quiz #1

3 (10/10)   14: 5 (chain rule); 14: 6-7 (directional derivative/gradient, extrema); Quiz #2

4 (10/17)   14: 8 (Lagrange Multipliers) ; Quiz #3

5 (10/24)   *Test #1 (25 October);* 15: 1-4 (double integrals in rectangular coordinates, polar coordinates)

6 (10/31)   15: 5-6 (applications of double integrals, surface area); Quiz #4

7 (11/7)   15: 7-9 (triple integrals in rectangular, cylindrical, and spherical coordinates); Quiz #5

8 (11/14)   *Test #2 (15 November);* 15: 10, 16: 6 (change of variables, parametric surfaces)

9 (11/21)   Quiz #6; 16: 1, 5 (vector fields, curl and divergence); 16: 2, 3, 7 (line and surface integrals, fields)

10 (11/28) 16: 4, 8, and 9 (Green's, Stokes's, and Gauss's theorems); 16: 10 (review); Quiz #7

11 (12/5)   *Test #3 (6 December);* Review

12 (12/12) **Final Examination, 15 December, 4:00 to 6:00 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. [One-half of the score on the final exam, if higher, replaces the lowest test to compute the course grade.]

    3. There will be a two-hour **Final Examination** on Thursday, December 15, from 4:00 to 6:00 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)   100
                                                                           400   points

Course grades will reflect the following percentage range of total scores:
    A = $90 \le \% \le 100$ $[360-400]$ C = $60 \le \% < 75$ $[240-300)$ F = below 50% (below 200)
    B = $75 \le \% < 90$ $[300-360)$ D = $50 \le \% < 60$ $[200-240)$
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:
  8 October to drop with no record   14 October for P/NP option   18 November 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, 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