

Math 1B-61, Spring 2018 (01198)

Richard Hansen

Calculus (second quarter); MW 6:30-8:45 pm; E-33

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Text: Stewart, Calculus: Early Transcendentals; 8th

web page: <http://www.deanza.edu/faculty/hansen>

Office Hours: Before class -- MTWTh 5:30 - 6:20 pm in S-43 (MSTRC)

**Syllabus:** Fundamentals of integral calculus. Prerequisite: MATH 1A (with a grade of C or better), or appropriate score on Calculus Placement Test within the past calendar year.

**Equipment:** Graphing calculator, numerical only -- no algebraic calculators -- see more info on the website.

| Week(Monday) | Topics (with reference to chapters and sections in Stewart)                                    |
|--------------|--|
| 1 (4/9)      | Introduction; 4: 9 (antiderivatives); 5: 1-3 (areas and distances, definite integral, FTC)     |
| 2 (4/16)     | 5: 4-5 (indefinite integral, substitution); Quiz #1  |
| 3 (4/23)     | 6: 1-3 (areas between curves, volumes, cylindrical shells); Quiz #2                            |
| 4 (4/30)     | 6: 4-5 (work, average value of function); *Test #1 (2 May)*                                    |
| 5 (5/7)      | 7: 1-3 (parts, trigonometric integrals and substitution); Quiz #3                              |
| 6 (5/14)     | 7: 4-8, (partial fractions, strategies, tables, approximation, improper integrals); Quiz #4    |
| 7 (5/21)     | 8: 1-2 (arc length, surface area of revolution); Quiz #5                                       |
| 8 (5/28)     | Memorial Day Holiday; *Test #2 (30 May)*   |
| 9 (6/4)      | 8: 3-5 (applications, probability); Quiz #6  |
| 10 (6/11)    | 9: 1-4 (differential equations, direction fields, separable equations, growth models); Quiz #7 |
| 11 (6/18)    | *Test #3 (18 June);* 3: 11 (hyperbolic functions); App G: (natural logarithm); Review          |
| 12 (6/25)    | **Final Examination 27 June 6:15 - 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. The lowest quiz will be dropped in computing the course grade. Success in the course requires practice: at a minimum, students should work the problems that are suggested.

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 will replace the lowest test score to compute the course grade.

3. There will be a comprehensive two-hour **Final Examination**, Wednesday, June 27, from 6:15 to 8:15 pm. Any student missing the final exam will fail the course; no excuses are acceptable.

|                 |            |                                    |            |
|-----------------|------------|------------------------------------|------------|
| <b>Grading:</b> | Quizzes    | (best 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 final distribution of grades 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; email the instructor 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:

22 April to drop with no record

4 May for P/NP option

1 June to drop with a "W"

Be sure to check the class website, <http://www.deanza.edu/faculty/hansen>, and its "Notes to Students" page for updates on our progress through the course material.

The key to success in any mathematics course is doing homework, and the website has a "Suggested Homework Problems" page. Use these problems for practice. They will NOT be collected but will be the basis for the seven Quizzes in the course. The problems are not meant to be comprehensive; you should work additional problems.

The text contains answers for the odd-numbered problems, and problems with red numbers have hints available on the author's website. In addition, the Students' Solutions Manual, containing worked solutions to the odd problems, may be purchased in the Bookstore and is also on reserve in the Learning Center.

Please utilize the Tutorial Center (MSTRC), S-43, for assistance and group work.

**Suggested Homework Problems:**

- 4.9 1-25 (odd), 29, 35, 41, 51, 53, 55, 61
- 5.1 1, 3, 5, 7, 13, 17, 19, 21, 25, 27
- 5.2 1, 3, 5, 7, 11, 17, 21, 25, 33, 37, 43, 47, 51
- 5.3 1, 3, 5, 11, 17, 19-43 (odd), 45, 47, 55, 59, 69, 75
- 5.4 1-51 (odd), 54, 61, 63, 65, 69
- 5.5 1-73 (odd), 77, 79, 87
- 6.1 1-29 (odd), 33, 49, 53
- 6.2 1-29 (odd), 39, 41, 49, 59
- 6.3 1-19 (odd), 29, 31
- 6.4 1, 3, 5, 7, 13, 15, 17, 21, 23, 29
- 6.5 1-9 (odd), 13, 15, 19
- 7.1 1-41 (odd), 65
- 7.2 1, 3, 7, 11, 23, 27, 41
- 7.3 1-31 (odd)
- 7.4 1-19 (odd), 39-43 (odd)
- [7.5, 7.6] integration strategies, tables, and computer algebra systems
- 7.7 1, 5, 7, 9, 19, 29, 31
- 7.8 1-21 (odd), 22, 33, 49, 57, 63
- 8.1 1-23 (odd), 33
- 8.2 1-21 (odd), 27
- 8.3 21-35 (odd), 41
- [8.4] economics and biology applications
- 8.5 1-11 (odd)
- 9.1 1-15 (odd)
- 9.2 1, 3-6 (all), 7-11 (odd), 19-23 (odd)
- 9.3 1-21 (odd), 29-35 (odd), 39
- 9.4 population growth
- 3.11 23, 31-45 (odd)
- Appendix G 1-9 (odd)

**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.