

# Course Information Sheet

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**Course:** Math 157-01 - Calculus for Business and Social Sciences - 4 Credit/Contact Hours - Fall 2014

**IAI Code:** M1 900-B

**Delivery Mode:** Face-to-face

**Meeting Time:** MW 10:00am-11:40am

**Meeting Place:** Room 4270

**Instructor:** Steve Kifowit, Rm 2305, Ph. (708) 709-3954

**Email:** skifowit@prairiestate.edu

**Web:** <http://stevekifowit.com>

**Office Hours:** MW 9am-10am & 1pm-1:30pm, TTh 11am-12pm, or by appointment

**Text:** *Applied Calculus*, 5th edition (2014); Hughes-Hallett, et al.

**Course Description:** This is a one-semester calculus course for business and social sciences majors. Topics covered include equations of lines, limits, differentiation and integration of algebraic, exponential, and logarithmic functions. Throughout the course, emphasis is placed on the application of the basic concepts of calculus. This course does not count for credit toward a mathematics major or minor.

**Course Prerequisite:** Math 151 (College Algebra) with a C or better or equivalent.

## Course Goals/Objectives:

*General Education Objectives*---The mathematics component of general education focuses on quantitative reasoning to provide a base for developing a quantitatively literate college graduate. Every college graduate should be able to apply simple mathematical methods to the solution of real-world problems. A quantitatively literate college graduate should be able to:

- a.) interpret mathematical models such as formulas, graphs, tables and schematics, and draw inferences from them;
- b.) represent mathematical information symbolically, visually, numerically and verbally;
- c.) use arithmetic, algebraic, geometric and statistical methods to solve problems;
- d.) estimate and check answers to mathematical problems in order to determine reasonableness, identify alternatives and select optimal results; and
- e.) recognize the limitations of mathematical and statistical models.

*Specific Course Objectives*---In addition to meeting the general education objectives, every successful Math 157 student should be able to:

- 1.) find equations of lines and use linear functions in applications;
- 2.) find limits numerically, graphically, and algebraically;
- 3.) compute derivatives of algebraic, exponential, and logarithmic functions;
- 4.) interpret the derivative as an instantaneous rate of change;
- 5.) solve application problems involving derivatives;
- 6.) compute indefinite and definite integrals;
- 7.) solve application problems involving integrals; and
- 8.) determine mathematical models corresponding to problem situations.

**Attendance Policy:** Regular class attendance is an essential component of successful learning. Students are responsible for prompt attendance and participation in all class meetings. If you miss class, you will not be allowed to make up any tests, quizzes, or assignments that you may have missed. All material covered in class is the student's responsibility.

**Grading:** Your grade will be based on your performance on three 100-point tests, a 150-point final exam, approximately ten 10-point quizzes, and miscellaneous problems and projects (0-50 points). Very roughly, tests count for about 55% of your grade, the final exam counts for about 27%, and quizzes count for about 18%. The grading scale is as follows:

A --- 88% and above

B --- 77% - 87%  
C --- 66% - 76%  
D --- 55% - 65%  
F --- below 55%

You may estimate your current grade at any time during the semester by computing the following percentage:  $100\% * ( \text{Total points accumulated} ) / ( \text{Total points possible} )$ . Please feel free to discuss your grade with me at any time during the semester. Throughout the semester, grades will be posted online at <http://www.engrade.com/skifowit>.

**Homework:** Homework problems will be assigned on a daily basis. Your work will not normally be collected, but we will often discuss homework problems in class. Keep up to date on your homework! Homework problems often show up on tests and quizzes. Be sure to practice the conceptual problems!

**Tests/Exams:** Test problems will be similar to class examples, quiz problems, and homework problems. Some of the test problems may be multiple choice or writing problems, but you should mostly expect computational problems. Partial credit may be awarded on any type of problem, but only for correct work. Tests may have portions on which calculators are not allowed. You must work individually on all tests. No make-up tests will be given. At the end of the semester, your lowest test score will be replaced by two-thirds of your final exam score (if this helps you).

**Quizzes:** Be prepared for a ten-point quiz on each Wednesday (unless a test is scheduled). No make-up quizzes will be given. All quiz work is to be done on an individual basis unless otherwise stated. At the end of the semester, your lowest quiz score will be dropped.

**Final Exam:** The final exam is comprehensive and will be worth 150 points toward your final grade. See the lecture pace for the date of the final exam.

**Calculators:** The TI-83 Graphing Calculator (or equivalent) is required for this course. We may also make use of computer algebra systems such as Mathematica, Wolfram-Alpha, or Maxima.

**Disability Statement:** Any student needing to arrange reasonable accommodations for a documented disability (learning, physical, psychological, or other) should contact the Disability Services Office (Room 1192).

**Religious Observance Accommodation:** Prairie State College is required to excuse students who need to be absent from class, examinations, study, or work requirements because of their religious beliefs, and provide students with a make-up opportunity, unless to do so would unreasonably burden the institution. Students must notify their instructor well in advance of any absence for religious reasons. If you require special accommodations for observance of a religious holiday, please notify me during the first week of the term.

**Misc. information:**

- 1.) The last day to withdraw from the course is November 7. For refund information, refer to the fall schedule book. If you wish to withdraw from the course, it is your responsibility to do so. Any student who does not come to class, yet fails to withdraw, will be given the FW grade.
- 2.) You are expected to spend roughly 12 hours per week on coursework - 4 hours in class and 8 hours out of class. If you cannot make this commitment, you may want to reconsider taking this course.
- 3.) The grading scale will be strictly adhered to! Final percentages will be rounded to the nearest whole number.
- 4.) This is a fast-paced course! We will cover much material in little time. You are responsible for thoroughly reading the textbook and keeping up with the assigned material.

Course information, including tests, quizzes, and answer keys, can be found at <http://stevekifowit.com/classes/m157.htm>



# Lecture Pace

## Math 157-01 - Calculus for Business & Social Sciences

Week 1	Aug 18 & Aug 20	Course information; Sections 1.1, 1.2, 1.3, 1.4	Course information; Functions, change
Week 2	Aug 25 & Aug 27	Sections 1.5, 1.6, 1.7, 1.8, 1.9	Log & exponential functions, transformations
Week 3	Sep 3	Focus on Theory p. 132-136	Limits and continuity
Week 4	Sep 8 & Sep 10	Sections 2.1, 2.2, 2.3, 2.4, 2.5	First and second derivatives
Week 5	Sep 15 & Sep 17	Sections 3.1, 3.2; <b>Test 1</b>	Basic differentiation rules
Week 6	Sep 22 & Sep 24	Sections 3.3, 3.4	Chain, product, & quotient rules
Week 7	Sep 29 & Oct 1	Sections 4.1, 4.2, 4.3	Extreme values
Week 8	Oct 6 & Oct 8	Sections 4.4, 4.5	Applications of derivatives
Week 9	Oct 13 & Oct 15	Sections 4.6, 4.7; Review; <b>Test 2</b>	Applications of derivatives
Week 10	Oct 20 & Oct 22	Sections 5.1, 5.2, 5.3	Definite integral
Week 11	Oct 27 & Oct 29	Sections 5.4, 5.5, 5.6	Area, average value, Fundamental Thm of Calc
Week 12	Nov 3 & Nov 5	Sections 6.1, 6.2, 6.3	Antiderivatives
Week 13	Nov 10 & Nov 12	Section 6.4, 6.5	Applications of definite integrals
Week 14	Nov 17 & Nov 19	Section 6.6, 6.7; <b>Test 3</b>	Integration techniques
Week 15	Nov 24 & Nov 26	Sections 8.3, 8.5	Partial derivatives, 2nd partials test
Week 16	Dec 1 & Dec 3	Section 8.6; Review/Catch-up	Lagrange multipliers
*****	Wednesday, Dec 10	<b>Final Exam</b> --- 10am-11:50am	

\*\*\* November 7 is the last day to withdraw \*\*\*