

**Instructor**

Randy Scott  
Office: SC-122  
Phone: (714) 628-4947  
email: scott\_randy@sccollege.edu

**Office Hours, SC-122**

M 1215-1315  
T 1600-1650  
W 1115-1230  
Th 1530-1650

**Prerequisite**

Math 185, or equivalent, with a grade of C or better.

**Attendance**

Be in class, on time, each and every day. Attendance comprises a small part of your course grade and missing class will adversely affect your course grade. From page 21 of the 2011-2012 SCC Catalog: A student may be dropped for excessive absences when the total hours of absence exceed 10% of the total scheduled hours of class.

For Spring 2012, this means I will drop you for excessive absence if you miss more than 3 class meetings.

**Withdrawals**

If you decide to drop this class, it is *your responsibility* to follow the correct procedures. The last day to drop this class with no record of participation is February 5, 2012, and the last day to drop this class with a W grade is April 22, 2012. Again, it is *your responsibility* to be aware of and to follow the correct procedures.

**Behavioral Expectations**

You will behave in a manner that is conducive to the progress of this class. If you are disruptive in any way, I will inform you in a clear, unambiguous manner. As the professor of record for this class, I will determine the standard of behavior.

Your cell phone is to be turned off at the beginning of each class meeting. You are free to turn it on at any time after class has concluded.

**Accommodations for Disabilities**

Students with verifiable disabilities who want to request academic accommodations are responsible for notifying their instructor and Disabled Students Programs and Service (DSPP) as early as possible in the semester. To arrange for accommodations, contact DSPP at (714) 628-4860 or by TDD (714) 639-9742 or stop by the DSPP Center in E-105.

**Academic Honesty**

Students attending Santiago Canyon College are expected to be honest and forthright in their academic endeavors. To falsify the results of research, to steal the words or ideas of another or to cheat on an examination, corrupts the essential process by which knowledge is advanced. Academic dishonesty is seen as an intentional act of fraud, in which a student seeks to claim credit for the work or efforts of another without authorization, or uses unauthorized material or fabricated information in any academic exercise. We, as an institution, also consider academic dishonesty to include forgery of academic documents, intentionally impeding or damaging the academic work of others, assisting other students in acts of dishonesty or coercing students into acts of dishonesty.

In matters relating to academic honesty violations, the primary responsibility for disciplinary proceedings rests with the instructor and the academic division where the violation allegedly occurred.

**Math Study Hall (MaSH) Registration**

The MaSH is a service provided by SCC that gives students a chance to supplement the learning done in the classroom. There will always be a math faculty member, instructional aides, and student workers on duty to assist you when needed. There are also computers in the room on which students can access mathematical software or do work for their on-line math class. The MaSH is located in rooms U-78, 79, and 80 (entrance in U-80). Hours of operation for Spring 2012 are Monday thru Thursday 8:00 am to 7:30 pm, and Saturday 9:00 am to 3:00 pm.

To use the MaSH, you must register for Math 098. This is a 0.2 unit class that will cost \$5.20 (resident) for the entire semester. You can register for the MaSH when you register for classes or just go to admissions on the ground floor of the E building. Once registered, you can enter and exit the MaSH at any time during hours of operation. When you enter, you will slide your student ID card or just type in your student ID number at the MaSH sign in

computer (no SSN). When you leave, you will sign out the same way. Signing out is very important. You may lose the hours you put in if you do not sign in and sign out appropriately.

### Calculator Use

You will want a graphing calculator for this course. Any type of calculator is fine; I expect you to be able to demonstrate your understanding of the concepts and principles independent of any particular piece of technology. We will discuss appropriate use of the calculator in class.

### Exams

Exams are *tentatively* scheduled for February 23, April 5, and May 3, 2012. I reserve the right to change the date to reflect the progress we make in the class, but I promise to always give you at least a one week notice before an exam.

### Quizzes

A short quiz will be given on the average of once each week. Some quizzes will be at the beginning of the class time, some in the middle, and some at the end of the class time.

There are no make-up quizzes given for any reason. To compensate for unavoidable absences, I will drop your lowest quiz score at the end of the semester.

### Homework

Doing work outside of class time provides the essential practice needed for success in mathematics. *Plan to spend at least three hours outside of class for each hour in class.* These three hours may include reviewing your class notes, reading the textbook, working on the assigned problems, reviewing older homework assignments.

Homework assigned for each day is to be completed by the following class meeting. Homework will be collected on a random basis and scored. You will receive full credit if you attempt all the assigned problems.

Finally, late homework will not be accepted for any reason.

### Final Exam

A comprehensive final exam will be administered during the last regularly scheduled class meeting: Thursday, May 17, 2012.

### Grades

Your grade in this class is computed using a weighted average with the following category weights and letter grade assignments with  $p$  being your class percentage and  $l$  being the letter grade:

<b>Exams</b> 55%	If $p \geq 90$ , then	$l = A$
<b>Quizzes</b> 10%	If $80 \leq p < 90$ , then	$l = B$
<b>Homework</b> 10%	If $70 \leq p < 80$ , then	$l = C$
<b>Attendance</b> 5%	If $60 \leq p < 70$ , then	$l = D$
<b>Final Exam</b> 20%	If $\leq p < 60$ , then	$l = F$

For example, to find your exam category score, compute the average (arithmetic mean) of the percentage of each of your exam scores. To find your quizzes category score, compute the average (arithmetic mean) of the percentage of each of your quiz scores. Sum the products of all the category scores and the weight, and the result is your class percentage.

### Some Thoughts

I believe that each and everyone of you can be successful with mathematics. I believe that being able to understand and communicate mathematics is of critical importance for you, your children, and all the future generations of your family. If you work hard and maintain a positive, productive attitude, you will gain an understanding of mathematics that will insure your success for many years to come.

### Student Learning Outcomes

1. State and apply basic definitions, properties and theorems of multivariable Calculus
2. Apply vector operations in two and three dimensions and use vector methods to analyze plane and space curves, and curvilinear motion.
3. Apply standard techniques of multivariable calculus, both differential and integral to solve selected applied problems

Santiago Canyon College, Spring 2012, Mr. Scott

Math 280, Intermediate Calculus

Text: Stewart, James; *Calculus, Early Transcendentals, 6e*

### Ch. 12 Vectors and the Geometry of Space

Section	Assignment
12.1 Three Dimensional Coordinate Systems	1, 3-6, 8, 11-13, 15, 17, 18, 25, 27, 29, 30
12.2 Vectors	1, 2, 4, 5, 7, 9, 11, 14, 19, 20, 22, 23, 24-26, 28, 29, 30, 32, 33
12.3 The Dot Product	1, 5, 7, 9, 10, 15, 18-20, 23, 35, 37, 39, 40, 45-47
12.4 The Cross Product	3, 5, 7, 9, 12, 13, 15, 19-21, 23, 29, 32, 39, 40
12.5 Equations of Lines and Planes	1-5, 7-17 odd, 19, 22, 23, 25, 27-29, 31, 34, 37, 39, 41, 45, 49, 52, 55, 57, 61-63
12.6 Cylinders and Quadric Surfaces	1-4, 7, 9, 11, 13, 14, 16, 17-20, 21-28, 30, 33, 34, 36

### Ch. 13 Vector Functions

Section	Assignment
13.1 Vector Functions and Space Curves	1, 2, 5, 6, 9, 11, 17, 25, 26, 39, 40
13.2 Deriv's and Int's of Vector Functions	1, 3, 5, 9-19 odd, 23, 25, 29, 31, 33, 35, 37
13.3 Arc Length and Curvature	1, 3, 5, 9, 11, 13, 14, 15, 17, 19, 24, 25, 33, 35, 43, 45
13.4 Motion in Space: Velocity and Acceleration	1, 2, 5, 9-17 odd, 19, 23, 31, 33, 35

### Ch. 14 Partial Derivatives

Section	Assignment
14.1 Functions of Several Variables	1-3, 5, 7, 9, 15, 17, 21-29 odd, 30, 32, 34, 36, 37, 39, 41, 43, 55-60, 61, 64
14.2 Limits and Continuity	3, 5, 7, 9, 11, 15, 19, 29-35 odd, 39-41
14.3 Partial Derivatives	1, 3, 5-8, 10, 15-37 odd, 39, 41, 45, 47, 49, 50, 51, 53, 61, 65, 67, 70
14.4 Tangent Planes and Linear Approx's	1, 3, 5, 7, 11, 13, 15, 22, 25, 27, 31, 35
14.5 The Chain Rule	1-11 odd, 13, 15, 17, 19, 21-25 odd, 27, 29, 31, 33, 37, 39, 40
14.6 Directional Deriv's and the Gradient Vector	1, 2, 5, 7, 9, 11-17 odd, 21-25 odd, 31, 33, 33, 39-43 odd
14.7 Maximum and Minimum Values	1, 3, 5-17 odd, 23, 27, 31, 33, 39, 47
14.8 Lagrange Multipliers	1, 3, 5, 11, 13, 15-17, 41, 42

### Ch. 15 Multiple Integrals

Section	Assignment
15.1 Double Integrals over Rectangles	1, 2, 5, 9, 11-13, 14
15.2 Iterated Integrals	1, 3-21 odd, 23, 25, 27
15.3 Double Integrals over General Regions	1-17 odd, 19, 21, 25, 27, 39-49 odd
15.4 Double Integrals in Polar Coordinates	1-6, 7-9, 10, 13, 17, 19, 22, 25, 29, 31
15.5 Applications of Double Integrals	1, 3, 5, 7, 11, 13, 15, 25, 26
15.6 Triple Integrals	3-17 odd, 19, 27, 28, 29, 33, 38, 43
15.7 Triple Integrals in Cylindrical Coordinates	1-12, 15, 16, 17, 19, 21, 25, 27, 28
15.8 Triple Integrals in Spherical Coordinates	1-14, 17, 18, 19, 20, 21, 23, 27, 29, 35, 37, 39, 40
15.9 Change of Variables in Multiple Integrals	1-15 odd, 19, 21

### Ch. 16 Vector Calculus

Section	Assignment
16.1 Vector Fields	1, 5, 9, 11-14, 15-18, 21, 23, 25, 27
16.2 Line Integrals	3, 5, 7, 11, 17, 18, 19, 21, 27, 31, 37
16.3 The Fundamental Theorem for Line Integrals	1-9 odd, 11, 15, 17, 19, 23,
16.4 Green's Theorem	3, 7, 9, 13, 15, 17, 18

Continued on next page

16.5 Curl and Divergence	1, 5, 7, 9, 11, 13, 15
16.6 Parametric Surfaces and Their Areas	1, 3, 11, 13, 15, 17, 21, 23, 35, 37, 41, 43, 45
16.7 Surface Integrals	5, 9, 13, 19, 23, 25, 39, 43
16.8 Stokes' Theorem	3, 5, 7, 11, 15
16.9 The Divergence Theorem	3, 7, 9, 13, 15
16.10 Summary	

**Ch. 17 Second-Order Differential Equations**

Section	Assignment
17.1 Second-Order Linear Equations	1-31 odd
17.2 Nonhomogenous Linear Equations	1-27 odd
17.3 Applications of Second-Order Diffy Equ's	1, 2, 3, 7, 13, 14
17.4 Series Solutions	1-9 odd

Useful Websites:

<http://wolframalpha.com/>

<http://www.calculus.org/>

<http://www.math.montana.edu/frankw/ccp/multiworld/topic.htm>

<http://faculty.eicc.edu/bwood/ma220supplemental/ma220supplemental.html>