Course Description:
This course is the third semester of the Math 150-155-260 calculus sequence. Topics include vectors in two and three space, vector-valued functions, solid analytic geometry, functions of several variables, partial differentiation and multiple integration, vector fields, line integrals and conservative fields.

Required Text:
Calculus with Early Transcendental Functions, Larson, Hostetler and Edwards, 3rd Ed.

Course Objectives:
At the end of the course, students should be able to:
1. Define a vector-valued function; discuss the concept of the limit of such a function; select an appropriate technique and find the derivative and integral of a given vector-valued function; calculate special quantities such as arc length, slopes of tangent lines and normal lines; formulate and carry out the solution of applied problems involving vector–valued functions.
2. Discuss the function concept as it applies to functions of several variables; find domains and ranges of functions of several variables; analyze functions of several variables to ascertain where the functions are continuous and where they fail to be continuous; construct graphs of quadric surfaces.
3. Select an appropriate technique and apply it to find the partial derivative of a given function of several variables; interpret the meaning of the partial derivative evaluated at a given point on the graph of a function; use partial derivatives to find the gradient of a function of several variables; formulate and carry out the solution to applied problems using the gradient concept.
4. Analyze a given function of several variables and select an appropriate technique to evaluate a given double or triple integral of the function; for a given application problem, formulate an integral that will provide the solution, selecting the appropriate limits of integration and an appropriate integration technique, and solve the problem.
5. Set up triple integrals in rectangular, cylindrical, and spherical coordinates; choose the integral which is the least difficult to evaluate, and evaluate the integral.
6. Formulate the solution to applied problems that require the use of line integrals, and evaluate those integrals to solve the problem.

Grading Procedures:
There will be four 100-point quizzes, one 50-point homework grade, and one 200-point cumulative final exam. Thus, 650 points may be earned this semester. The grading scale is:
<table>
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<tr>
<th>Grade</th>
<th>Total Points</th>
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<tbody>
<tr>
<td>A</td>
<td>585-650</td>
</tr>
<tr>
<td>B</td>
<td>520-584</td>
</tr>
<tr>
<td>C</td>
<td>455-519</td>
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<tr>
<td>D</td>
<td>390-454</td>
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<tr>
<td>F</td>
<td>Below 390</td>
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**Homework:**
A practice set is assigned at every class meeting. Complete each practice set before the next class. I will be available in my office, room 3620, at 8:30am each Monday and Wednesday to answer any questions that you have about your practice sets. Practice sets will not be collected.

Eight homework sets will be assigned, collected and graded during the semester. These sets are due at the beginning of class on the dates noted on the Graded Homework Assignment Sheet. These sets will consist of even problems from the text and/or problems that are not in our text. For each assignment, the key will be posted online after the due date for the assignment. Each assignment will be worth approximately seven points. To receive full credit, you must copy the problem, show all steps neatly and completely and get the correct answer. Late work is not accepted. One of the graded homework sets will be dropped at the end of the semester. The completion of all practice sets and every homework set is important to your success in this class. Mathematics is a "learn by doing" subject. A good rule is to set aside eight to ten hours per week to do your homework. Do not allow yourself to fall behind in your work. Catching up before a test is an extremely difficult task.

**Quizzes:**
Please be aware of the following tentative quiz dates. Mark them in your calendar, and be sure that you don't schedule any conflicting event. Quizzes may be given early to students if the circumstances warrant. Please see me if you find that you need to take a quiz early. Make-up quizzes (quizzes given after the in-class quiz) are given only if the student provides the instructor with documentation that the instructor agrees shows the absence on quiz day was due to an unforeseeable circumstance that was beyond the control of the student. Since each test counts 100 points, a missed test counts as a zero and drops your total score by 100 points.

<table>
<thead>
<tr>
<th>Quiz</th>
<th>Day</th>
<th>Date</th>
<th>Chapter</th>
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<tbody>
<tr>
<td>1</td>
<td>Wed</td>
<td>9/15</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>Mon</td>
<td>10/18</td>
<td>11, 12.1-12.5</td>
</tr>
<tr>
<td>3</td>
<td>Wed</td>
<td>11/10</td>
<td>12.6-12.9, 13.1-13.4</td>
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<tr>
<td>4</td>
<td>Mon</td>
<td>12/6</td>
<td>13.6, 13.7, 14.1-14.3</td>
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**Final Exam:** Monday, December 13, 9:30am
Office Hours:
Regular Office Hours are:
Mondays, 8:30-8:55am, Room 3620
Wednesdays, 8:30-8:55am, Room 3620

Please take advantage of my regular office hours if you need help. I am also available at other times—drop by or schedule an appointment for help. Please do not hesitate to ask for help. You may reach my office by phone (757-2121, ext. 6255), and the voice mail system allows you to leave a message 24 hours a day.

Attendance Policy:
Attendance is an important element in your academic success. To be successful, you must attend class and complete homework assignments. Some students, for various reasons, may miss class. If you miss class, it is your responsibility to learn the material covered the day of the absence. Office hours may not be used to repeat lectures given on class days that you missed.

Academic Honesty:
I fully support MiraCosta College's belief that academic honesty is a cornerstone of the educational community. To that end, I expect academic honesty of my students. Students who bring unauthorized material to a quiz or copy from another's quiz will receive a zero on that quiz. Removal of reserve materials from the LRC is considered an act of academic dishonesty. Doing your homework in groups is encouraged, however copying someone else's homework or allowing someone else to copy your homework is considered an act of academic dishonesty. Certain quizzes may be given in the Math Learning Center. Do not discuss any aspect of these tests with anyone until after the class period when the quizzes are returned. Any such discussion will be considered an act of academic dishonesty and will result in a zero on that quiz to all participants in the discussion.

Study Aids:
1. Solutions to most homework problems and to the review problems at the end of each chapter are available for your reference in the MLC. You must attempt the problem before the MLC staff will allow you to see the solution manual.

2. The Student Solutions Manual may be purchased in the bookstore. It contains the detailed solutions of many of the problems in the text.

3. Keys to old quizzes are available on electronic reserve through my web page, www.miracosta.edu/home/ccongleton. Please note that these quizzes are based on the old text, not our current one. Use these for extra practice and guidance on the quiz format and level of difficulty.

4. Tutoring assistance is available in the Tutoring Center.
5. Student readers, tutors, instructional aides and mathematics faculty are available in the Mathematics Learning Center (MLC) to assist you with questions. Also, I will be on duty in the MLC on Tuesday evenings from 3:00pm-8:00pm.

6. Software packages are available in the MLC to assist you by providing extra practice. The package “Graphing Calculator” is an excellent 3d graphing package, and it is available for your use in the MLC (ask the instructor on duty- this software is only loaded on certain computers).

7. Houghton Mifflin has an interactive calculus web site to which students may subscribe for a small fee. Visit the web site for details. The address is http://hmco.tdlc.com

8. Visit www.miracosta.edu/home/ccongleton for web access to the syllabus, homework assignments, and various other class resources.

9. The keys to graded homework assignments are posted on the web after the due dates. You may access these through my web site.

NOTE: A student with a verified disability may be entitled to appropriate academic accommodations. Please contact your instructor and/or the Disabled Students Program and Services Office for further information.