Instructor: Veasna Chiek
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Website: http://websites.rcc.edu/chiek
Office: 101C Physical Science
Phone: 951.222.8328

Office Hours
Tuesday & Thursday: 12:25pm – 12:45pm & 4:10pm – 6:05pm
Friday: 9:25am – 9:55am

Class Meeting Times
Tuesday and Thursday: 6:30pm – 8:35pm in PS103

Introduction
I welcome you all to this class and I am excited to start off this semester on a positive note! So, what can you expect from this class or me? It will be very demanding, structured, and all students will be held accountable for their learning. I have low tolerance for students who do not do their work or attend class. Thus, there will be consequences for these actions. I do expect you to be professional and treat this class as if you would treat a job.

Course Description
Vectors in a plane and in space, vector valued functions, partial derivatives, multiple integrals, line and surface integrals, indeterminant forms, and elementary applications to the physical sciences. 72 hours lecture

Prerequisite
Mathematics 1B

Required textbooks and Materials
1. Multivariable Calculus by Stewart, 6th edition
2. Ruler and Calculator

IMPORTANT DATES

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<tr>
<td>Final Exam Date, Time and Room</td>
<td>12/15 Thursday 6:30pm – 9:00pm PS103</td>
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STUDENT LEARNING OUTCOMES

Upon successful completion of the course, students should be able to:

1. Write vector dot and cross products and apply dot and cross product to writing equations for lines and planes and surfaces in space.
2. Write Cartesian equations, in Spherical and cylindrical coordinates.
3. Differentiate and integrate vector valued functions.
4. Apply integration and differentiation to finding velocity and acceleration of bodies in space.
5. Find unit tangent and unit normal vectors and their application to velocity, acceleration and curvature.
7. Apply partial derivatives and language multipliers to solve the Optimization Problems
8. Compute double and triple integrals and apply double and triple integration to the solution of center of mass, area, and volume problems.
9. Use the Jacobian and transformation of coordinates to solve multiple integration problems
10. Graph vector fields
11. Compute line and surface integrals
12. Use Green’s Divergence and Stoke’s Theorems to solve various types of physical applications.

COURSE CONTENT

1. Vectors and the geometry of space
   Dot and cross products, lines, planes, and surfaces in space, cylindrical and spherical coordinates
2. Vector-valued functions
   Differentiation and integration, velocity and acceleration, tangent and normal vectors
3. Functions of several variables
   Limits and continuity, partial derivatives, differentials, directional derivatives and gradients, extrema application, Lagrange multipliers.
4. Multiple integration
   Double integrals, center of mass and centroids, first and second moments, triple integrals, applications of double and triple integrals, change of variables; Jacobians
5. Vector analysis
   Vector fields, line integrals, surface integrals, Green’s divergence and Stokes Theorems.
Grading
Your grade will be based on Homework, Quizzes, Chapter Exams, and a Final Exam. Homework will be 15% of your grade, Quizzes worth 10%, Chapter Exams worth 50% and the Final Exam worth 25% of the overall grade.

Grading Scale:

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Homework
Homework will usually be assigned daily and due the following class or sometimes due at the end of class. Due dates will be determined in class. Each assignment is to be labeled properly, written legibly in pencil, stapled and all work is to be shown and boxed to receive credit. Students who simply write the answers only will receive a zero. Thus, you are to write the question and the problem including pictures before you begin. Late work will not be accepted!

Quizzes
There will be frequent quizzes given throughout the semester. Each quiz will be taken in class and will be based on class discussions and problems assigned for homework. No make up quizzes!

Chapter Exams and Final Exam
There will be a 1 hour exam following the completion of each chapter. In addition, there will be a final exam. The dates of each chapter exam will be announced at a later time and each exam will be based on class discussions and problems assigned for homework. All students must take the final exam! I do not drop the lowest chapter exam score, but I may replace a low chapter exam score with your final exam score if and only if you receive a 70% or higher on the final exam and it is beneficial to your grade. No make up exam!

Classroom Policies
Attendance and homework is expected at every class meeting. Attendance will be taken daily and any student, who accumulates more than 4 hours of truancy, is habitually late, or leaves class early may be dropped from the course. In addition, any student who misses lecture time prior to the census date of 9/12 may also be dropped from the course. However, do not rely on the instructor to drop you from the course. If you choose to drop the class, then it is your responsibility to complete the appropriate procedures. A person that is not enrolled in the course is not allowed in the classroom during the class period, this includes children and friends. The use of a cell phone in any matter is prohibited inside the classroom. In addition, keep food and drinks outside the classroom.
Students are expected to observe The Standards of Student Conduct as listed in the Student Handbook. In addition, any student who causes a distracting in class may be asked to leave.

If you have a documented physical disability or learning disability requiring accommodation for this class, please see me or contact the office of Disabled Students Programs and Services at (951) 222-8060 or (951) 222-8642 on the City Campus.

**Plagiarism and Cheating**

Plagiarism is a form of cheating. Make sure that your work is original. Any time you use someone else’s work and do not give that person credit, it is plagiarism. If you are “suspected” of plagiarism, you will bear the burden of proof. You must be able to present rough drafts or related materials and discuss the topic intelligently. This is important because I must be able to gauge what you have learned. Copying the work of another person, whether homework problems or answers during a test, is considered plagiarism. Copying the work of another person, even though some cultures consider this sharing work, is considered plagiarism at RCC, an act of academic dishonesty. If you are uncertain about sharing vs. plagiarism be sure to ask for clarification. The District’s Board of Trustees issues polices governing academic integrity. Board Regulation 6080, section III.c.1 and 2 approved on January 25, 2005 states:

“For instance of academic dishonesty a faculty member may take any one of the following actions:

The faculty member may reduce the score on tests or assignments(s), reduce the grade in the course, fail the student in the course or recommend to appropriate administrative officer that the student be suspended from the course. If course suspension is recommended, the administrative office will review the information regarding the instance of academic dishonesty, notify the student, and will prescribe appropriate due process procedures.

The administrative officer will make note of the offense in the student’s educational records. A second instance of academic dishonesty may result in expulsion proceedings. Any tuition and applicable fees will not be refunded as a result of disciplinary action for academic misconduct.”

**Communication in Class**

I encourage you to ask questions in class. Thus, the pace of the class will depend on you. If a certain topic or problem is not clear, then raise your hand and ask a question. If you need additional help with this class, then you may go to the math learning center (MLK 306) and seek help! If you want to study on your own, you can go to [www.interactmath.com](http://www.interactmath.com) and select any appropriate textbook to work out of! This is an awesome resource that you can utilize right away. This class is very demanding and if you are up of the challenge, let the games begin! Please note that the syllabus may be amended by the instructor to cover situations that were not identified herewith.
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