Math 73 - Multivariable Calculus
Sec 202, Reg ID: 129137

Instructor: Parran Vanniasegaram

Class Time and Location: MW 2:00 - 4:25 pm, TBA

Office Hours: MTWTh 7:35 - 8:00 am, 10:35 - 11:25 am, MS-116

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Textbook: Calculus Early Transcendentals 9th Edition, by James Stewart

Calculator: You will need to purchase a calculator; it will be needed for some of the homework problems. Calculators will not be allowed on the exams.

Course Description: This is the third course in calculus for students majoring in mathematics, physical science, computer science, or engineering. In this course, the concepts of differential and integral calculus are extended to multivariable functions. The course content includes vectors in two and three dimensional space, vector-valued functions, differentials, gradients, multiple integrals, vector fields, line integrals, surface integrals, and vector calculus.

Time Commitment: As stated in the Evergreen Valley College course catalog, students are expected to spend at least two hours studying outside of class for each credit hour. That means you should be spending at least **four hours and fifty minutes** on each homework assignment (reviewing the notes, reading the textbook, doing the homework problems, watching videos related to the course material, etc.).

Student Learning Outcomes: Upon completion of this course, the student will be able to:
1. Perform vector operations, including vector addition, scalar multiplication, the dot product, and the cross product to find triple products, projections, and the equations of lines, curves, planes and surfaces in space.

2. Analyze multivariable functions and space curves including their graphs; find level curves and level surfaces; find velocity and acceleration pertaining to motion in space; find the arc length and curvature of a curve; and find the unit tangent, unit normal, and unit binormal vectors for a space curve.

3. Determine differentiability; find limits, partial derivatives, directional derivatives, gradient vectors, and differentials of multivariable functions; and find an equation of the tangent plane to a surface at a given point.

4. Find global extrema of a continuous multivariable function on a closed and bounded set; apply the second derivative test to find local extrema and saddle points; and apply the Lagrange multiplier method to solve constrained optimization problems.

5. Set up and evaluate double integrals in rectangular and polar coordinates and triple integrals in rectangular, cylindrical, and spherical coordinates; apply the change of variables theorem for multiple integrals; and apply multiple integration to find volumes, surface areas, centers of mass, moments of inertia, and probabilities using joint probability density functions.

6. Determine whether a vector field is conservative; find a potential function for a conservative vector field; find the divergence and curl of a vector field; evaluate line integrals using parametrized curves; evaluate surface integrals using parametrized surfaces; and apply the Fundamental Theorem for Line Integrals, Green's Theorem, Stokes' Theorem, and the Divergence Theorem to a variety of science and engineering examples.

Disabilities Support Program and Services: If you have a physical or learning disability that requires special accommodations, please see the Disabilities Support Program Counselor. Contact me within the first week of class to communicate your accommodation needs.

Attendance: You are expected to attend all classes, arrive on time, and stay for the entire class; I take attendance every single class. I reserve the right to drop/withdraw students who are absent more than **two** times during the semester. If you miss class, please send me an email explaining the reason.

Withdrawal/Drop Policy: It is the ultimate responsibility of the student to formally drop the class. You should not rely on the instructor to drop you from a class for non-attendance. You may drop by telephone using the STAR system (408-223-0300), go online at WebReg.sjeccd.org, or by completing the proper forms in the Office of Admissions and Records. To be eligible for a refund of fees and/or prevent a recorded grade of "F" or "W", you must drop the class on or before the following posted dates:

February 8 - Last day to drop without a "W" and apply for a refund.
April 22 - Last day to drop with a "W".

Student Conduct: A student who is disruptive will be asked to leave the class. A student who refuses to leave the room will be dropped from the class and will be reported for further action. Please read the course catalog for more information.

Cell Phone Use: There is no reason to have your cell phone out during class. If I see your cell phone, I will ask you to put it away.

Academic Dishonesty: Cheating is absolutely forbidden in my class. Students who submit the work of others as their own or cheat on exams or other assignments will receive a failing grade in the course and will be reported to college authorities. Please look at Page 233 of the course catalog for more information.

Early Alert: Evergreen Valley College is committed to improving student success and believes that all students can succeed in their academic work and achieve their educational goals. Thus, it has enacted an Early Alert Program allowing instructors early in the semester to notify students who are struggling in their classes who might be at-risk of not passing the course. Once the instructor reports that a student is at-risk of failing the course, the student will receive an email and a follow-up phone call encouraging the student to talk to his/her instructor, seek tutoring (if needed), and/or use other on-campus resources available to students.

Homework is collected every class and the first twenty-six homework assignments are worth four points each. The last few assignments will be collected, but not graded. Late homework is not accepted under any circumstances. Your lowest homework score will be dropped.

Quizzes: After the first week, there will be a quiz given right at the beginning of every single class (except for classes where there are exams). The first sixteen quizzes are each worth ten points. The remaining quizzes are ungraded. No makeup quizzes are allowed. Your lowest quiz score will be dropped.

Exams: There will be three exams and each is worth 100 points. No make-ups are allowed.

Final Exam: The final exam will be given on the last day of classes and it is worth 250 points; it covers the entire semester. There will be no review or study guide given for the final.

Extra Credit: There is no extra credit given in this class. If you are interested in improving your grade, please spend more time working on the homework assignments.

Grading: It can be inferred from the last few lines that there are 800 total points.

Here is my grading scale:

A	B	C	D	F
90% - 100%	80% - 90%	70% - 80%	60% - 70%	0% - 60%
720 - 800 pts	640 - 719 pts	560 - 639 pts	480 - 559 pts	0 - 479 pts