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COURSE SYLLABUS

COURSE: MAT 273 CALCULUS III

HOURS: Lecture: **3** Lab/Shop: **2** Work Exp/Clinical: **0** Credits: **4**

COURSE DESCRIPTION:

This course is designed to develop the topics of multivariate calculus. Emphasis is placed on multivariate functions, partial derivatives, multiple integration, solid analytical geometry, vector valued functions, and line and surface integrals. Upon completion, students should be able to select and use appropriate models and techniques for finding the solution to multivariate-related problems with and without technology.
Note: This course has been approved for transfer under the CAA as a general education course in Mathematics. This course has been approved for transfer under the ICAA as a general education course in Mathematics.

PREREQUISITE(S): MAT 272 with a grade of "C" or better

COREQUISITE(S): NONE

TEXTBOOK(S) & OTHER SPECIAL REQUIREMENTS:

Open Educational Resources (OER) are listed in the course Moodle.

STUDENT LEARNING OUTCOMES:

Upon successful completion of this course, the student will be able to:

1. Perform operations with vectors in two and three dimensional space and apply to analytic geometry.
2. Differentiate and integrate vector-valued functions and apply calculus to motion problems in two and three dimensional space.
3. Determine the limits, derivatives, gradients, and integrals of multivariate functions.
4. Solve problems in multiple integration using rectangular, cylindrical, and spherical coordinate systems.
5. Select and apply appropriate models and techniques to define and evaluate line and surface integrals; these techniques will include but are not limited to Green's, Divergence, and Stoke's theorems.
6. Demonstrate proficiency in using CAS technology to analyze, solve and interpret the various applications.

*****Please refer to the online version of the Richmond Community College Program & Course Catalog and the Student Handbook for current academic and general information.**