

MATH 237: Vector Calculus

pulcher et utilis

Course Description: Math 237 is devoted to the study of calculus in several dimensions. It is the third course in a calculus sequence intended for students who are interested in mathematics, the physical sciences, or computer science. We will discuss three-dimensional geometry, differentiation and integration of functions of several variables, and vector analysis. This material is some of the loveliest and most rewarding in the undergraduate curriculum. At the same time, it is demanding. Topics become more challenging on an absolute scale as the semester progresses, whilst each new idea presupposes mastery of what came before. The course is unforgiving of lapses in attention. Students are encouraged to ask questions, attend office hours, and form study groups.

Prerequisite: Grade of C or better in Math 236 or equivalent.

Text: *Calculus, JMU multivariate edition*, by H. Anton, Wiley Custom Services. Students may also find it useful to read *Div, Grad, Curl, and All That*, by H. M. Schey, and *Vector Calculus* by J. Marsden and A. Tromba.

Class Meetings: Section 1: MWF 9:05-9:55, and Tuesday 9:30-10:45 in Roop 105.

Section 2: MWF 10:10-11, and Tuesday 11:00-12:15 in Roop 105.

Professor: E. Θ Brown, PhD., (540) 568-8763, brownet@math.jmu.edu

Office Hours: 9-12 am Thursday and by appointment, in 122 Roop Hall. Selected Sunday afternoon hours may be scheduled if the class requests this.

Exams: The mid-term examinations will take place during class meeting on February 1, February 29, and April 4. The final will be held according to the Registrar's schedule. There will be no make-up exams, except in cases of documented emergencies as determined by the instructor.

Homework: Homework assignments will be given in class and posted on the course web site, <http://www.math.jmu.edu/~brownet/237>. Reading homework should be done before next class; written homework is due at the start of class, two class periods after it is assigned. Late homework is in general not accepted.

Grading: Semester grades will be based on class- and home- work, three exams, and the final. Classwork and homework together count for 100 points in the course grade, as do each of the mid-terms. The final is worth 150 points.

Honor Code: Students should observe the JMU academic conduct code. Violation of the honor code is in essence theft from other students, and will be treated with corresponding gravity. In this course, collaboration on homework is encouraged. All work on exams must be strictly individual.

Special Circumstances: Any student who requires special arrangements because of a physical, mental, psychiatric or religious condition should speak with the instructor during the first week of class. This conversation will remain confidential, except for necessary communication with Student Services. Please also see the instructor if relevant new circumstances arise during the term.