
MthSc 206-006: Calculus of Several Variables

FALL 2009

M-307 Martin, M/W/F 10:10 – 11:00am

M-307 Martin, Thurs 9:30 – 10:20am

Instructor	Chanseok Park (cspark@ces.clemson.edu) OFFICE: O-309 Martin Hall PHONE: (864)656-2730 OFFICE HOURS: M/W/F: 9:00 - 10:00am or by appointment						
Grader	TBA OFFICE: N.A. PHONE: (864)656-2730 OFFICE HOURS: N.A.						
Textbook	<i>Calculus</i> by James Stewart 6/e						
Prerequisite	MthSc 106/108 or equivalent. The expectation is that you have already been exposed to the basic calculus.						
Policy	<ul style="list-style-type: none">• Attendance Policy: Class attendance is mandatory. If you miss a class for some reason, it is your responsibility to get notes, <i>etc.</i> from someone in class. I will not repeat lectures during my office hours.• All drop/add procedures are your responsibility.• Disability access statement from the Office of Student Disability Services: <i>It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities. Students are encouraged to contact Student Disability Services to discuss their individual needs for accommodation.</i> For more information see student handbook.• Tardy Professor Policy: If the instructor has not arrived within 15 minutes of the scheduled class time, you may assume that class has been canceled.						
Material	<p>The course objectives are to develop an understanding of the concepts of calculus of several variables and their applications to practical problems from geometry, science, and engineering. Students will learn analytical methods and some numerical techniques thru computer software (maple). The following topics will be covered.</p> <ol style="list-style-type: none">(i) Vectors and the Geometry of Space: We introduce vectors and coordinate systems for three-dimensional system space. We will learn that vectors provide particularly simple descriptions of lines and planes in space.(ii) Vector Functions: The functions that we have studied so far are real-valued. We will study functions whose values are vectors. Such functions are needed to describe curves and surfaces in space. We will also use vector-valued functions to describe the motion of objects through space.(iii) Partial Derivatives: The argument of the functions we have dealt with is single-valued. But, in many practical applications, physical quantities often depend on two or more variables. So it is natural to turn our attention to functions with <i>several</i> arguments. We also will extend the basic ideas of differential calculus to such functions (partial derivatives).(iv) Multiple Integrals: We will extend the idea of a definite integral to double and triple integrals of functions of two or more variables. These ideas are then used to compute volumes, surface areas, masses, and centroids of more general regions than we were able to consider in Calculus II.(v) Vector Calculus: We will study the calculus of vector fields which are functions that assign vectors to points in space. This topic is of great interest in many applications. An example of a vector field is the collection of wind (or current) velocity vectors at any given time during a tornado, ocean currents, etc.						
Grading	<p>The final grade will be curved and calculated as follows:</p> <table><tr><td>HOMEWORKS:</td><td>10 %</td></tr><tr><td>MIDTERMS 1, 2, 3:</td><td>60% (20+20+20)</td></tr><tr><td>FINAL:</td><td>30 %</td></tr></table>	HOMEWORKS:	10 %	MIDTERMS 1, 2, 3:	60% (20+20+20)	FINAL:	30 %
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FINAL:	30 %						

GRADING SCALE: 90~100 (A), 80~90 (B), 60~80 (C), 40~60 (D).

Final exam can replace the lowest mid-term exam grade if it is better. For example, if a student misses one mid-term exam, then the final exam will count 50% of the total score.

The lowest one of your homework grades will be dropped. The more exact formula for the total homework grade is

$$\frac{\sum_{i=1}^n x_i - x_{\min}}{\sum_{i=1}^n f_i - f_{\min}} \times (10\%),$$

where f_i is the i th full homework score, x_i is the i th your homework score, x_{\min} is your lowest homework score, and f_{\min} is the minimum among the full scores.

Exams	MIDTERM 1: Sep. 25 (Fri)	(in-class)
	MIDTERM 2: Oct. 23 (Fri)	(in-class)
	MIDTERM 3: Nov. 23 (Mon)	(in-class)
	FINAL: Dec. 8	3:00 – 5:30pm

All the exams will be closed-book.

For the midterms, you will be allowed to bring in *one* 8.5×11 formula sheet made up by yourself. For the final (comprehensive), you will be allowed to bring in *two* 8.5×11 formula sheets made up by yourself.

A calculator will be permitted but cannot be shared with others.

No early or late exams will be allowed without a written and legitimate excuse.

Homeworks The students can collaborate on their homework problems, but they should submit their homeworks separately. Late homeworks will **not** be accepted. All the homeworks should be submitted in the class (not thru email). To get full credit, you must show all work on the homework problems, which must be handed in in the same order as they are assigned.

You have to keep all the graded homeworks in case of missing grades due to missing name or typo errors. *Always* PRINT YOUR NAME clearly.

Key Dates	Aug. 19 (Wed)	: Classes begin
	Aug. 25 (Tue)	: Last day to register
	Sep. 1 (Tue)	: Last day for students to drop without a W grade
	Oct. 2 (Fri)	: Last day for instructors to issue midterm grades
	Oct. 9 (Fri)	: Last day to drop without final grades
	Oct. 12 – 13 (M-Tu)	: Fall Break
	Nov. 25 – 27	: Thanksgiving holidays
	Dec. 7 – 11	: Final Exams
	Dec. 14 (Mon)	: Deadline to submit candidate grades (9:00am)
	Dec. 16 (Wed)	: Deadline to submit other grades (9:00am)
Dec. 17 (Th)	: Graduation	

- Note**
- <http://bb.clemson.edu/> (Black Board)
 - <http://www.clemson.edu/asc/> (academic support center – free tutoring)
 - <http://www.registrar.clemson.edu> (academic calendar, registration and grading)
 - <http://www.clemson.edu/academics/academic-integrity> (academic integrity)

The official statement on Academic Integrity

“As members of the Clemson University community, we have inherited Thomas Green Clemson’s vision of this institution as a *high seminary of learning*. Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form.”

”When in the opinion of a faculty member, there is evidence that a student has committed an act of academic dishonesty, the faculty member shall make a formal written charge of academic dishonesty including a description of the misconduct, to the Dean of the Graduate School. At the same time, the faculty member may, but is not required to, inform each involved student privately of the nature of the alleged charge.”