

Math 241- Spring 2005: Calculus of Several Variables

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1 General Information

- Section 57638, MTWF 12:20-1:10, Ayres 111 (Tu: Ayres 129)
- Office Hours: MWF 11:15-12:15, Ayres 207A- or by appointment (e-mail)
- Text: Stewart (2nd. ed.), Chapters 9 to 13
- Prerequisite: Calculus of 1 variable (M141 and M142)-working knowledge assumed.

2 Class policies

(i) Attendance: I will take attendance at every MWF class meeting; students missing more than 1/3 of them (total of 42) who do not withdraw from the course will get an F.

(ii) Tuesday class: in general, no new material will be introduced on Tuesdays. Instead, we'll have either a problem session, a 30-min quiz or a 50-min exam. Exception: 1/19

(iii) Calculators won't be needed for this course. Use of calculators will be allowed for the quizzes, but not the exams.

(iv) Reading of materials unrelated to the course (newspapers, texts for other classes) during lecture is not permitted.

(v) Important dates: drop w/o W: 1/21; drop w/ W: 2/22; drop w/ WP-WF: April 5; last class: April 27; final exam: May 2, 12:30

(vi) I won't be using Blackboard, but you should check the 'course log' link in the freire/M241 page often- I will post announcements (inc. homework problems and test dates) there.

(vii) On rare occasions, I may include in lecture a small amount of material not found in the text, or given in the text with a slightly different approach or emphasis. The lectures take precedence- students may be tested on any material covered in class.

3 Grading, Homework and Exams

QUIZZES: suggested homework problems for each section will be posted on my web page shortly after class. Homework will not be collected, but the quizzes will consist of homework problems. There will be one quiz for each course unit, consisting of 3-4 problems (30 min). Grading will be on a 0-4 scale (per problem.)

EXAMS: The first exam will cover unit IA, the second units IA and IB, the third unit IIA, the fourth IIA and IIB, the fifth III A and the final IIIA and IIIB. The grade in the second exam will replace that of the first, if higher; otherwise both will count. Likewise for the other exam pairs. The exams will consist of 7-8 problems (50 min), at a higher level than the quizzes. Grading will be on a 0-4 scale (per problem.)

DATES: Quizzes and exams (and the sections included) will be announced (on the web page) the week before the test, possibly as late as the Friday preceding a Tuesday test.

POLICIES:

(i) There will be no makeups of exams or quizzes. Students missing an exam will get a zero on it, unless a valid justification (illness, university activity) is given in advance, with appropriate documentation (in which case the other grade in the same exam pair will count twice.) Students missing more than two exams will get an F.

(ii) I do not ‘grade on a curve’: your grades will be independent of how the rest of the class performs. I will not compute statistics of quiz or exam grades. Graded exams may be inspected in class or during office hours, but will be kept in my office until the end of the course.

(iii) Other than the exams and quizzes, there will be no assignments for ‘extra credit’.

(iv) Grading scale: below 50-F; 55-69: C or C+; 70-84: B or B+; 85 or above: A. All exams (including the final) will have the same weight, and all quizzes will have the same weight.

4 Course Outline

The approximate number of MWF lectures planned for each unit is given in brackets. Sections marked designated as ‘reading assignment’ will not be covered in lecture- students are expected to read them independently at the appropriate time, as the material will be needed to understand the other sections (and to solve quiz/exam problems.)

9.1: reading assignment (before the end of IA)

Unit IA: vectors, dot product, vector product, linear geometry (sections 9.2 to 9.5) [5]

Exam 1 (IA)

Unit IB: curves and motion in \mathbb{R}^3 (sections 10.1 to 10.4) [5]

Exam 2 (IA, IB)

9.6, 9.7: reading assignment (before the end of IIA)

Unit IIA: continuity and derivatives in several variables; graphs, level sets, parametrized surfaces (10. 5 and 11.1 to 11.5) [6]

Exam 3 (IIA)

Unit IIB: gradient vector, maxima/minima, Lagrange multipliers (sections 11.6 to 11.8) [5]

Exam 4 (IIA, IIB)

Unit IIIA: multiple integrals (sections 12.1 to 12.9) [9]

Exam 5 (IIIA)

Unit IIIB: vector calculus [10]

Final exam: (IIIA, IIIB)