

Math 241- Fall 2006: Calculus III

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1 General Information

- Section 7, MTuWF 1:25-2:15, Ayres 101
- Office Hours: MW 2:30-3:00, Ayres 207A- or by appointment (e-mail)
- Text: Stewart (3rd. ed.)
- Prerequisite: M141 and M142 (Calculus I,II)-working knowledge assumed.

Remark: Stewart will be used mainly as a source of homework and examples. For the theory, I may not always follow it especially closely, and in every case *students are responsible for learning the material as introduced in the lectures, whether or not the topic is discussed in Stewart*. This means: (i) don't miss any lectures; (ii) take good notes. Almost every topic to be discussed *is* covered in Stewart, and it will be *YOUR JOB* to find it there.

2 Class policies

(i) Attendance: I will take attendance at every MWF class meeting; students missing more than 6 of them, or missing three consecutive MWF lectures (total of 39) will get an F in the course.

(ii) **Tuesday class:** in general, no 'mathematical theory' (as opposed to examples) will be introduced on Tuesdays. Instead, we'll have either a problem session, a 30-min quiz or a 50-min exam (dates given below.)

The quizzes will test if you can do the homework problems. The problem sessions in general will NOT deal with homework problems, but rather with examples of more complex problems (of the kind that may appear in an exam). Help with homework will be given during office hours.

(iii) Calculator policy: you may use a graphing calculator during quizzes or exams, but only a TI-83 or similar. Students wishing to use other calculators must check with me first- calculators with symbolic algebra capabilities will not be approved (and you must bring me the calculator's manual).

(iv) Reading of materials unrelated to the course (newspapers, texts for other classes) during lecture is not permitted. In general, you should become familiar with the math department's 'classroom behavior expectations' policy (see link from my web page). First violation: warning. Second violation: referral to the department's Associate Chair for UG, possibility of F in the course.

(v) Important dates: drop w/o W: 9/1; drop w/ W: 10/3; drop w/ WP-WF: 11/14; last class: 12/5. Final: 12/14, 5:00-7:00 p.m.

To withdraw with a WP/WF, you will need to bring me a form to sign. Students who miss the WP deadline and stop attending will receive an F in the course.

(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) there.

3 Grading, Homework and Exams

QUIZZES: suggested homework problems for each section will be posted on the course web site shortly after class. Homework will not be collected, but the quizzes will consist of homework problems (numbers changed) There will be 6 quizzes. QUIZ DATES: 9/5, 9/12, 10/10, 10/17, 11/7, 11/14.

EXAMS: There will be three 50 min. in-class exams, which may include problems at a higher level than the homework and/or conceptual questions. EXAM DATES: 9/19, 10/24, 11/21.

POLICIES:

(i) There will be no makeups of exams or quizzes. The lowest quiz grade and the lowest exam grade (other than the final) will be dropped, and if you miss an exam or quiz, this will be the grade you drop. Students missing a second exam for any reason other than a documented medical emergency will receive an F in the course.

(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) *Expected* grading scale: 55-69: C or C+; 70-84: B or B+; 85 or above: A. Weights: quiz average (five highest)=20%; exam average (two highest): 40% comprehensive final: 40%.

4 Course Outline

Differential calculus in several variables: limits/ partial derivatives/ differentiability/ Taylor approximations/ gradient and directional derivatives/ max-min problems/ Newton's method

Multiple integrals: double and triple integrals/ spherical and cylindrical coordinates/ surface area and surface integrals/ change of variables.

Calculus of vector fields: line integrals and potentials/ Curl and divergence/ theorems of Gauss, Green and Stokes/ Maxwell's equations