

Multivariable Calculus
Math 272, Spring 2013
9:00-9:50 a.m. daily, Bouillon 210

Instructor: Dr. Fassett
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Office Hours: MTWTh 2-2:50

Text: Calculus, Fifth Edition, by Hughes-Hallett.

Calculator: A graphing calculator is required for the course. I will be using the TI-84 Plus.

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

- Compute partial sums;
- Identify a geometric series and, if it converges, compute its sum;
- Apply various tests for convergence (integral, comparison, ratio);
- Determine the interval of convergence for a power series;
- Find the Taylor Polynomial of degree n and the Taylor Series representation for a function;
- Differentiate and integrate Taylor Series;
- Perform algebraic computations involving vectors
 - Magnitude;
 - Unit vector;
 - Dot Product;
 - Cross Product;
 - Vector projections;
- Utilize the Dot /Cross Product to
 - Answer question involving orthogonality;
 - Compute work;
 - Find equations of plane;
 - Compute areas and volumes;
- Describe and recognize graphs of functions of two variables;
- Determine limiting and continuity properties of functions;
- Compute partial derivatives, differentials, gradients, and directional derivatives;
- Find equations of tangent planes;
- Find extrema;
- Communicate verbally and in writing one's understanding of mathematical concepts to others.

Course Policies:

Attendance: Daily attendance is expected and considered necessary for success. Please bring the text and a calculator to each class meeting. You are responsible for any announcements made during class regarding homework, quizzes, and exams.

Homework: Daily homework will be assigned but not collected. As the assigned problems will form the basis for quizzes and exams, it is to your advantage (and responsibility) to keep up with homework.

Quizzes: There will be several quizzes worth 20 points each that may or may not be announced in advance. Your top five quiz scores will be counted toward your course grade.

Exams: There will be three 100-point exams announced in advance. No exam score will be dropped. If you miss an exam and have not made prior arrangements with me, a score of “0” will be recorded. Make-up exams will only be allowed in extreme cases.

Final Exam: There will be a comprehensive 150-point final exam.

Grading: In grading written solutions I will be looking for correct mathematical computations **and** precise communication of the computations.

Course Grade: Total points for the course will be based upon the following:

| | |
|-------------------------------------|-------------------|
| Top five quizzes | 100 points |
| Three in-class exams (100 pts each) | 300 points |
| Final Exam | <u>150 points</u> |
| Total | 550 points |

Course grades will be assigned based upon the following scale:

| | | |
|---------------|---------------|---------------|
| 100-93% = A | 79.9-77% = C+ | below 60% = F |
| 92.9-90% = A- | 76.9-73% = C | |
| 89.9-87% = B+ | 72.9-70% = C- | |
| 86.9-83% = B | 69.9-67% = D+ | |
| 82.9-80% = B- | 66.9-63% = D | |
| | 62.9-60% = D- | |

I reserve the right to adjust the above scale (in the student’s favor) if deemed appropriate.

Students with special needs or disabilities that may affect their ability to access information or material presented in this course are encouraged to contact the Director of Disability Support Services at 963-2171 (TTD 963-2143).