MAC2313-05 — Calculus III — Spring 2005

- Text: "Calculus – Early Transcendentals", Steward. (5nd edition).

- Professor: Dr. Steven Bellenot, Love 002-B, phone 644-7189, email: bellenot@math.fsu.edu

- Class schedule: 3:35-4:25 M, W and 3:35-4:50 T, R, in LOV 107.

- Office hours: MTWR 2:30-3:20; or by appointment.

- Course description: Calculus in more variables with vectors. Our reference will be chapters 12 through 16 of the text. Our assignments are on http://www.math.fsu.edu/∼bellenot/class/s05/cal3/

- Prerequisites: MAC2312 (Calculus II) with a grade of C- or better; or satisfactory completion of at least eight hours of equivalent calculus courses.

- Calculator: The use of the TI-89 graphing calculator is highly recommended.

- Communication: It is your responsibility to register for a (free) FSU computer account so that I can send you email, which you are expected to check regularly. If you prefer to read your email elsewhere then you can arrange to have messages forwarded, but you must still obtain an FSU account in the first instance. Please – no cell phones are allowed in class.

- Grading/Exams: Every other week there will be a 5 problem mini-test on Wednesday (Dates: Jan 26, Feb 9, 23, Mar 16, 30, Apr 13). Each mini-test will cover the corresponding period, plus some 'reminder' material from previous period. The final will be given Tue Apr 26 5:30pm-7:30pm, and will be comprehensive. Your grade will be based on how well you do on the 6 mini-tests (60%), the homework(15%), and the final(25%). Letter grades will be assigned according to the usual scale (A: 90 and above; B: 80 and above; C: 70 and above; D 60 and above; F below 60). Plus/minus letter grades may be assigned to high/low numberical grades. A grade of I will not be given to avoid a grade of F or to give additional study time. Failure to process a course drop will result in a course grade of F.

- Exam Policy: No makeup tests will be given. Late or unstapled assigments or projects will not be normally be accepted. A missed test may be excused if the student presents sufficient verifiable evidence of extenuation circumstances. If a test absence is excused, the the final exam will be used for the missing test grade. Similarly the next test score will be used for an excused missing homework. And unexcused absence from a test will be penalized. An unexcused missed assignment will result in a grade of zero. Absences from tests, and missing assignments due to family social events will not be excused. Acceptable medical excuses must state explicitly that the student should be excused from class. Students must take the final examination at the scheduled time. Students must bring FSU ID cards to all tests.

- Homework: The class web page has the complete (but tentative) schedule for the semester. Each non-test class period will have 5-6 homework problems. On Tuesday and Thursday students (in rotation) will present the 5-6 regular homework problems. On Mondays and non-test Wednesdays homework will be collected at the beginning of the period. Assignments with dog ears or paper clips will not be accepted. Staples are required for multi-page assignments. Please use only one side of each page.

- Project: There is an optional project for this class. The project details will be posted on the project web page later in the semester. This project is a group project for groups of 1-4 students. The project score will replace the lowest mini-test score.

- Help may be obtained at the Calculus Help Center (114 MCH). However, do not hesitate to come to my office hours, or to contact me via email. I check my email often, and give prompt replys to any emailed questions from my students. (Please – no html formated email, send text only.)

  Information concerning this class (assignments, an extended syllabus, etc.) will be regularly posted on the web, at http://www.math.fsu.edu/∼bellenot/class/s05/cal3/ You are expected to check this link and your email periodically.

- My best wishes for a good and productive semester!

Details

- How I grade problems: There are several steps to solving a Calculus 3 problem. One most understand the problem. One must select a method of solution which is not only correct but is efficient. One must execute the method and communicate its execution correctly. Finally the results must checked for reasonableness of your answer. Partial credit is awarded with these factors in mind relative to the difficulty of the problem. Adding $2 + 2$ and getting 5 in the course of a problem could result in a score of 0/10 if the problem was $2 + 2 =?$, to getting 10/10 if it was a silly mistake at the end of a two page problem solution.

  Incorrect answers that are unreasonable are not given much partial credit. For example, the answer $(y - 1) = 2x(x - 1)$ to the question what is the equation of the tangent line to $y = x^2$ at $x = 1$ is unreasonable because lines have linear equations. Even though the error is a simple one, it is an error that should have been caught in the "is this answer reasonable phase". What must you check so your answer is reasonable? This is one of the best reasons to attend class, it is not in the text.

  Mathematics provides for many short calculations but correct communication requires sticking to mathematical rules. In particular, equations RHS = LHS should only be used when the RHS and the LHS are equal. For example, the following use of L'Hopital's rule contains two =-signs and neither is used correctly.

  $$\lim_{x \to \infty} \frac{x}{e^x} = \frac{1}{e^x} = 0$$

  The answer is wrong because of the missing limit operator for the middle expression. This kind of mistake is often caused by laziness rather than lack of understanding, or is it? It doesn't communicate understanding and so it does not deserve full credit.

  There are many ways to solve most mathematical problems, but there is only so much time on a test. Choosing a correct but slow method may not cost you any points on the given problem but could rob you of time needed on other problems. For example the integral below can be done by several methods but you should pick substition over integration by parts.

  $$\int \frac{x}{1 + x^2} \, dx$$

  Finally you need to show all your steps. Some calculators (TI-89 for example) will compute the integral above for you – which is a good way to check you answer. But you have to show you can do the calculation too.

- Test Format: For a classroom test, begin each question (but not subsequent parts of the same question) on a fresh sheet of paper, use one side of the paper only, and have your solutions stapled together in order at the end of the examination (do NOT use dog ears). Similarly for the assignments. (I will bring a stapler to every test, and for the assignment you can borrow the stapler in 208 Love.) Needless to say, in either case, your name must appear legibly on Page 1.

- Honor code: A copy of the University Academic Honor Code can be found in the current Student Handbook. You are bound by this in all of your academic work. It is based on the premise that each student has the responsibility 1) to uphold the highest standards of academic integrity in the student's own work, 2) to refuse to tolerate violations of academic integrity in the University community, and 3) to foster a high sense of integrity and social responsibility on the part of the University community. You have successfully completed many mathematics courses and know that on a "test" you may not give or receive any help from a person or written material except as specifically designed acceptable. Out of class you are encouraged to work together on assignments but plagiarizing of the work of others or study manuals is academically dishonest.

- ADA statement: Students with disabilities needing academic accommodations should: 1) register with and provide documentation to the Student Disability Resource Center (SDRC); 2) bring a letter to the instructor from SDRC indicating you need academic accommodations. This should be done within the first week of class. This and other class materials are available in alternative format upon request.