MAC2313-01 — Calculus III — Fall 2004

- Professor: Dr. Steven Bellenot, Love 002-B, phone 644-7189, email: bellenot@math.fsu.edu
- Class schedule: 8:00–8:50 M, W and 8:00–9:15 T, R, in HTL 214.
- Office hours: M 9-11 TR 9:30-10:45; or by appointment.
- Course description: Calculus in more variables with vectors. Our reference will be chapters 12 through 16 of the text.
- 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: Sep 8, 22, Oct 6, 20, Nov 3, 17). Each mini-test will cover the corresponding period, plus some ‘reminder’ material from previous period. The final will be given Tue Dec 7 10:00am–12:00noon, 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 numerical 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 assignments or projects will not be normally 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. 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 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 five regular homework problems. On Mondays and non-test Wednesdays homework will be collected at the beginning of the period.
- 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 very often, and you can expect prompt answers to any questions you might have.

Information concerning this class (assignments, an extended syllabus, etc.) will be regularly posted on the web, at http://www.math.fsu.edu/~bellenot/class/f04/cal3/ You are expected to check this link and your email periodically.

- My best wishes for a very good and very productive semester!

There is more on the other side
Details

- How I grade problems: There are several steps to solving a Calculus 3 problem. One must 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 \(\text{RHS} = \text{LHS}\) 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 substitution 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 assignment. (Not owning
a stapler is no excuse: 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 designated 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.