**Fall Semester 2004**

| **Bryan Smith** | Thompson 321-E | 879-3562 | bryans@ups.edu |
|---|---|---|---|
| **Office Hours** | Thompson 321-E | 9:00 - 11:00 A.M. | Th |
| | | 11:00 - 11:50 A.M. | W, F |
| | | 3:00 - 4:20 P.M. | W |
| MATH 122-A | Thompson 316 | 8:00 - 8:50 A.M. | M,W,F |
| | Thompson 316 | 8:30 - 9:20 A.M. | T |
| MATH 122-B | Thompson 316 | 9:00 - 9:50 A.M. | M,W,F |
| | Thompson 316 | 9:30 - 10:20 A.M. | T |

Any changes to office hours will be noted on my website. I am also happy to make appointments for meetings at other times.

## TEXTBOOK, CALCULATOR

**Textbook** *Calculus, 3rd Edition,* Strauss, Bradley and Smith, ©2002, Prentice-Hall. Inc.

**Calculator** TI-86 or equivalent. If you already have a different calculator, see http://math.ups.edu/info/calculators.html for more information about calculator requirements. Science/Math majors will be writing technical material for this and upper-division classes and might consider buying a technical word processor for this purpose.

**COURSE CONTENT** We will cover chapters 5–8 of our text as well as more detail about sequences and series. By studying this material, you will learn much about the Integral Calculus: definite integrals, antiderivatives, the Fundamental Theorems of Calculus, and connections, extensions and applications of these ideas (including differential equations, function approximation, sequences and infinite series). See my web page for a detailed (and fairly accurate) calendar.

The only prerequisite for this course is that you understand the fundamental ideas of the Differential Calculus. This material is covered in chapters 1-4 and sections 5.1 and 5.2 of our text. Although you already understand the basic concepts of function, limit, continuity and derivative, we will review these concepts rapidly at the beginning of the semester and during the first three weeks as the occasion warrants.

**READING** Developing an ability to read and understand a (relatively) technical piece of writing is a primary goal of this course. To this end, section-by-section reading assignments will be made in the following fashion.

Assignments and their due dates will be posted on my web page well in advance of when they will be collected. They will be due at 6:30 A.M. and are to be submitted by e-mail. When submitting your answers, your e-mail (must) have a certain structure in order for me to be able to filter it out of my other mail. Specifically,

- The SUBJECT: field must tell me which of my classes (122A, 122B) and the chapter and section of the text of the assignment.
- The first line of your answer must begin with your name.

Acceptable subject lines include: '*122A, 5.1*', '*Calculus 122B, Section 5.1*', and '*My class is Calculus 122A and this is my response to the reading assignment for Section 5.1*'.

You get credit for a question if your answer is essentially correct. At the end of the semester twice the fraction of your correct answers will be added to your grade as "extra credit".

**PROJECTS** You will be working on a take-home project almost every week in which there is not an examination. I try to write projects that are interesting, educational, and challenging so they will rarely be 'straightforward' and will occasionally include problems that are open-ended in the sense that there is no one best solution. I will drop your lowest project score.

I expect your results to be written using complete sentences which guide a reader through your work (see below for more specific comments on writing style). I encourage you to work on the projects in small groups. However, if you do work with others, you must do your own write-up of the results. This is non-negotiable! Collaborating on how to write the solution will result in zero credit. The top of the first page of the write-up must also include the names of those with whom you worked and the last page must include the citations of any other sources you used in your research. It is best to think of these projects as officially assigned papers in which you completely explain your analyses of the problems and fully document and cite all sources used. When I read your submissions I will mark them according to the Rubric attached to the end of this information sheet.

**Writing Style**  At the very least your projects should be

- Fully footnoted and documented. Specifically,
  1. All collaborators in problem-solving are named on the first page.
  2. All reference works used are footnoted or cited in-line.
- Written without any help in presentation or style (although you may work in groups during the problem-solving stage)
- In ink or written on a word processor  **with the names of any collaborators cited on the cover page**. (If you do not work with anyone be sure to mention that fact on the first page)
- Written using complete, accurately punctuated sentences
- Presented in the first person and with a clear, easy-to-follow expository style
- Targeted at an audience consisting of students not in this class but with an equivalent mathematical background.

Since many of you are either science or mathematics majors, you might consider using a word processor to write your papers. Reasonable technical word processors that also have symbolic manipulation packages include: *Scientific Notebook* , *Mathematica*, *MathCad*, and *MatLab*.

**HOMEWORK** If you don't practice mathematics (i.e., do homework) you will not learn it very well. I will assign (on the course web page), collect, and evaluate homework problems from the textbook on which I expect you to spend considerable time and effort. Tuesday will be reserved for questions.

**EXAMINATIONS** There will be an examination approximately every three weeks and your lowest score will be dropped. No makeup examinations will be given – a missed exam will be your dropped score. Students representing the University (music, athletics, forensics, et cetera) on an examination day may re-schedule their exam but must talk with me **before** the actual exam.

The examination schedule is

**Exam 1** September 14, 2004

**Exam 2** October 5, 2004

**Exam 3** November 2, 2004

**Exam 4** November 23, 2004

**Exam 5** Simultaneous with Final Exam

Examinations are written so approximately half of each exam is "straightforward" and the remainder involves more challenging problems. The expectation is that, as well-prepared students, you will work the "straightforward" problems without hesitation and find the others more challenging.

**FINAL EXAM** The final examinations will be comprehensive and will be held in our room.

**Math 122-A; Monday December 13, 2004; 12:00 - 2:00 P.M.**

**Math 122-B; Tuesday December 14, 2004; 8:00 - 10:00 A.M.**

The Final Examination will not be rescheduled. Please note the time of your final and do **not** plan to leave town before its scheduled time. Previously purchased airline tickets are not a valid reason for re-scheduling a final examination.

**GRADING** The different aspects of the course will be weighted according to the following:

| Homework | 5% |
|---|---|
| Quizzes | 40% |
| Examinations | 40% |
| Reading (Extra Credit) | +2% |
| Final Examination | 15% |

**ATTENDANCE POLICY** I expect you will come to class every day. I don't take attendance, but in a class of this size it is not hard to notice when someone is not here.

Attending class helps enormously in learning calculus. Class time is often used to (1) explain material from the textbook, (2) introduce material or work on problems not found in the textbook, (3) give hints on assignments, and (4) go over assigned problems. [Exam problems are sometimes remarkably similar to assigned problems and examples worked in class.]

If you have to miss any of your classes for any reason, I will appreciate your letting me know why you will be missing, in advance if possible.

**Homework (Due Wednesday at 6:30 A.M.)** Find my university web page and look at the calendar and list of homework problems.

(http://math.ups.edu/~bryans/index.html)

Also, send an e-mail message to me at **bryans@ups.edu** indicating you have access to the internet and understand Beverly Smith (bsmith@ups.edu) does not appreciate receiving Bryan Smith's e-mail messages.

| Points | Logic and Mathematics |
|--------|------------------------|
| 5 | Arguments are correct, complete and without extraneous or misleading material. |
| 4 | Arguments have only one of: a few minor errors, omissions or inappropriate material. |
| 2 | Arguments have at least two of: errors, omissions and inappropriate material. |
| 0 | Arguments are more seriously flawed. |

| Points | Use of Terminology and Notation |
|--------|----------------------------------|
| 2 | All technical terms, concepts and notation are used correctly. |
| 1 | There are minor problems with terminology and or concepts. |
| 0 | There are major problems with terminology or concepts. |

| Points | Written Presentation |
|--------|----------------------|
| 3 | Follows citation requirements and all other writing guidelines. |
| 2 | Follows almost all of the guidelines with only one or two minor lapses. |
| 1 | Has more than one or two minor lapses in following the guidelines |
| 0 | Has a major lapse in following the guidelines. |

## Writing Guidelines

It is best to think of these formal projects as officially assigned papers in which you completely explain and justify your analyses of the problems. I expect your papers to be

- Fully footnoted and documented. Specifically,

  1. All collaborators (or lack of same) in problem-solving are cited on the cover page and any ideas of theirs used in your paper are footnoted or cited in-line.

  2. All reference works used are footnoted or cited in-line.

- Written without any help in presentation or style (although you may work in groups during the problem-solving stage).

- In ink or written on a word processor.

- Written using complete, accurately punctuated sentences.

- Presented in the first person plural and with a clear, easy-to-follow expository style.

- Targeted at an audience consisting of students not in this class but with an equivalent mathematical background.