Math 16.05, Calculus II, Fall 2000

Class meets: MTWF 11:30-12:20 312 Hodges

Instructor: Professor Diamond
410J Armstrong Hall
293-2011 ext 2347
diamond@math.wvu.edu

Office Hours: MWF 1:30-2:30, and by appointment.

Feel free to use e-mail as well as phone to ask questions or to make appointments. You are welcome to drop in or contact me by phone or e-mail for an appointment.

Text: Calculus, 3rd edition, Stewart

Chapters:

6.1-6.4, 6.6, 6.8 (6.5 and 6.7 will be briefly treated)
7.1-7.7, 7.9
8.1-8.4
9.1-9.5
10.1-10.11

Exams, Quizzes, and Grading:

There will be a 15 minute quiz each week on Tuesday. The quizzes will be averaged (dropping one score) to produce an overall quiz average.

There will be four one-period exams and a comprehensive final exam. Exams will be announced about one week before they are given.

Calculators: Calculators will not be allowed on quizzes, exams, or the final.

Homework: Problems from the text will be selected for you to work on your own. Homework will not be collected or graded.

Class Grading:

Your grades on each exam, the final, and the quiz average (dropping the lowest quiz) will be converted to a percentage. The grade on the final is counted as two exams and the quiz average is counted as one exam. You then have seven exams-worth of grades:

The four exam grades: T1, T2, T3, T4
The quiz average: Q
The final counted twice: Z, Z

Of these seven grades, the lowest will be dropped and the remaining six averaged to obtain an overall average for the course. Your grade will then be given as follows, based on your overall average:

A 85% and above
B 75% and above
C 65% and above
D 50% and above
Make-up exams & quizzes:

Following University policy, make-up exams will be given if you must miss an exam for an authorized University activity, or another reason approved by your dean. In other cases, make-up exams and quizzes will be given at the discretion of the instructor, no more than once for any student, and taking into account the nature of the excuse and the timeliness of the request.

Brief discussion of the course:

Math 16 is a standard second-semester calculus course, primarily aimed at students in mathematics and mathematically intensive science and engineering disciplines. Chapter 6 treats the calculus of exponential and logarithmic functions, functions you have already met in previous mathematics courses. Chapter 7 is the traditional heart of Math 16, where you learn detailed techniques for integrating various types of functions (“methods of integration”). With the advent of software for the numerical and symbolic computation of integrals, this material is not covered in quite the detail it once was, but a number of topics are still essential for the analysis of integrals, analysis which cannot be done automatically by computers. Chapter 8 introduces additional applications of integration that arise again in Math 17. These applications could have been introduced in Chapter 5, but the author waited until Chapter 8 because the integrals involved are more sophisticated, and use the techniques of Chapter 7. Chapter 9 introduces the calculus of polar coordinates, which are occasionally useful in science and engineering and which arise again in Math 17. Parametric equations are also treated again in Math 17, this time in three dimensions. Chapter 10 is infinite sequences and series. These are somewhat more advanced topics, and represent a general format in which functions can be computed and problems can be solved which otherwise have no representation in terms of a (closed) formula.

Studying suggestions:

Read each section that we cover; try to read once before we cover a topic and then after. Ask questions if you don’t understand what is written. Study with friends. Study the explanations and the example problems. Think about how you would summarize the results of each section. In the unlikely event that you don’t understand what I do in class, the book is carefully written and you can learn from there. To spend three hours of studying for each hour of class would not be unreasonable. Do not “study” by just looking at the patterns of the example problems and then going right to the homework problems without understanding why things are done the way they are. You will not learn anything this way, and although you might get a passing grade, this will catch up to you as you progress in mathematics.