

SYLLABUS

Math 16600: Analytic Geometry and Calculus II (Class No: 19058)

Meets: MWF 9:00–10:15p in SL 137

Final Exam: Saturday, December 10, 3:30–5:30p

Instructor: Carl Cowen

Office: LD 224P

Phone: 278-8846

Office Hours: M 3:00-4:00p, Tu 4:00-5:00p, W 1:00-2:00p, or by appointment

E-mail: ccowen@math.iupui.edu

URL: <http://www.math.iupui.edu/~ccowen/Math166.html>

**EACH STUDENT WILL CHOOSE BETWEEN THIS SYLLABUS
AND DR. NILES' SYLLABUS NOVEMBER 11 ****

General Information and Goals

Calculus is one of the outstanding intellectual achievements of the human mind in addition to being the foundation of many applications of mathematics to physics, chemistry, biology, statistics, economics, and many other natural and social sciences. The roots of calculus go back to Eudoxus, Archimedes and other Greek thinkers more than 2000 years ago, but the calculus as we know it began with the work of Isaac Newton, Gottfried Leibnitz, and other mathematicians of the 17th century with many improvements in understanding, development of applications, and refinements and extensions of the theory in the 18th and 19th century. Much more recently, beginning in the second half of the 20th century, machines have been developed that, with human guidance, can solve calculus problems. In this course, we will keep all of these threads in mind as we learn about calculus and try to connect it to areas that are of interest to each of you.

Math 16600 here at IUPUI forms part of the mathematical foundation for many majors in Science and Engineering but is taken by many other students as well. The course is open to all students who have the appropriate mathematical background in beginning calculus, equivalent to a grade of “C–” or better in Math 16500. The course will cover Chapters 7 to 12 (except 10) of the

Text: *Calculus*, 6th edition(2007), by James Stewart

My goals for you in this course are

Short term goal: That you master the ideas and computations of the course, both theoretical and applied.

Long term goal: That you recognize the uses or ideas of calculus as you see them in your professional or your personal life and that you know or can quickly relearn the computations that are important to you throughout your life.

Attendance, Homework, and Quizzes

To quote from my colleague, Professor Morton: “Attendance is required to do well in this class. Based on experience, we can say with a fair degree of certainty, that if you do not come to class, you will not pass the course. Learning mathematics requires steady and persistent effort. Coming to class and making an effort to focus on the material being discussed is half the battle. The other half is practicing the concepts by doing the homework.” Math 16600 moves very quickly, so it is especially challenging to master the material because the ideas pass by so quickly and there is little time to digest. Missing a single class is missing a third of a week of material!

It is important to read the text, both before and after coming to class. Reading before will prepare you for the discussion in class and reading after will help solidify your understanding. Reading mathematics books is a skill that will take time to master, but will pay off in your later study both in other math classes, but also in any classes that depend on reading detail. One of the biggest differences between reading mathematics and other kinds of reading is that to be successful in reading mathematics, you must read slowly and pay attention to the details you are reading. If you have trouble with material from the textbook, please ask me about it in class or office hours.

Homework will be assigned and collected regularly with grading mostly to check the work you are doing but with a few problems graded more carefully. Make-up/late homework will **not** be graded for credit.

Quizzes based on the homework will be announced in advance and will be the done the last ten minutes or so of the class. No make-up/late quizzes will be graded for credit; the two lowest quiz grades will be dropped, with missed quizzes counted as zeros.

The developing schedule for the course will be announced in class, but will also be on the website for the class, updated regularly.

Test, Exam, and Grading Policies

In addition to the course-wide, departmental, Final Exam on December 10, there will be 3 tests during the semester, of which one, Test 2, will be a “mastery test” (see below). Each test will contribute about 20% of the grade, the homework and quizzes, together, will contribute about 15% of the grade, and the Final Exam grade will constitute the the remaining about 25% of the course grade.

Tests 1 and 3 will be ordinary tests with 100 points possible and partial credit will be granted for answers that are mostly, but not completely correct. The grading scale on each of these tests is not fixed in advance, but will be announced in class after each test. Test 3 will be mid-November, before Thanksgiving, and will cover Chapter 12.

Test 2, late October, on computation of basic derivatives and integrals (Chapters 3, 5, and 7), covers the most basic and fundamental skills and will be a mastery test. By “mastery test” I mean that the test will cover material that must be mastered for success in the course. For this test, no partial credit will be given – each answer is completely correct, or it will receive no credit. BUT, the test may be repeated at arranged times until 5pm on December 13th or until a score of 90 or more is achieved. The test will have 20 questions. A perfect score is 110 points, but for each incorrect answer, 10 points will be deducted. That is, on the first day the test is given, you will receive 110 points if you get

all 20 questions correct, 100 points if you miss 1 question, 90 points if you miss 2 questions, 30 points if you get only 12 correct, and -30 points if you get only 6 correct. After the first day, 100 points will be the maximum score, given for no wrong or 1 wrong, and otherwise the scoring will be the same. I expect everyone will get 90 points or more on this test after taking it no more than three or four times because it will contain no “hard” questions.

****** Students choosing to be graded by Dr. Niles’ syllabus will have Test 2 rescored as 5 points per problem, out of 100, and no retakes.

The Department of Mathematical Sciences enforces course-wide policies for the Final Exam in Math 16600. These same policies will apply for all tests and quizzes in the course. These policies include:

- No calculators, cell phones, pagers, *ipods*, or other electronic devices are permitted to be on during the tests.
- No notes, books, or other of your papers may be used during the tests.
- The only items permitted on your desk during the test are the test paper, scratch paper provided by the instructor, and pen, pencil, and eraser.
- No talking will be permitted in the test room until *all* the tests have been turned in.
- If a student **MUST** miss a scheduled test or exam, the student should supply a legitimate reason and evidence for the reason to the instructor at least a week before the test or exam so that an alternate test can be scheduled. An alternate exam date for the Final will be scheduled before December 8. For unexpected emergencies, the student should notify the instructor as soon as possible and provide evidence of the emergency in order for an alternative test or exam to be scheduled.

Four sample finals are on the Department’s webpage:

www.math.iupui.edu/courses/materials/16600/Practice_Final_Version_1.pdf

General Academic Policies

There are a number of campus-wide policies governing the conduct of courses at IUPUI. These can be found at http://registrar.iupui.edu/course_policies.html

The work you submit for homework, quizzes, tests, and the final exam must be your own. For homework you will probably find it beneficial to consult with other students about the material and this kind of conversation and collaboration is encouraged. At the end of the consultation, however, each participant is expected to prepare their own summary of the discussion and their own solutions to the problems. More information about student conduct can be found at <http://registrar.iupui.edu/misconduct.html>

More information concerning adaptive services for learning or other disabilities at IUPUI can be found at

<http://life.iupui.edu/aes/>

NOTE: If you expect to use the services of the AES Office in this course, you should re-do the paperwork with me – I have no information of this sort from Dr. Niles.

The policies for this class will be those derived from IUPUI’s policies on academic conduct and adaptive services.

Approximate Course Outline

<i>Date</i>	<i>Chapter</i>	<i>Topics</i>
	Chap 7 Chap 8	Transcendental functions, L'Hôpital's Rules Techniques of Integration, Approx. Integ., Improper Integrals
Mid Oct	Chaps 7, 8	Test 1
Mid Oct	Chap 9	Applications of Integration
Oct 16		Last day to withdraw with automatic "W"
Oct 31	Chaps 3, 5, 7	Test 2
Oct, Nov	Chap 12	Sequences and Series
Nov 15		Last day to withdraw with permission of advisor and instructor
Nov 23-25		Thanksgiving (no class!!!)
Nov 30	Chap 12	Test 3
Nov, Dec	Chap 11 Review	
Dec 10		Departmental Final Exam
Dec 13		5pm Last day to retake Test 2