

1. **Lectures:** MWF CB 102, 8:00 - 8:50, by John Lewis

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or by appointment
- Sections 001 and 004 by Weifeng Zhi
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Section 001 meets on Tuesday - Thursday in CB 213 from 8:00 - 9:15 am

Section 004 meets on on Tuesday - Thursday in CB 239 from 11:00 to 12:15 pm.

2. **Prerequisite:** C or better in Calculus 1.

3. **Course Book** The book we shall use for this course is entitled *Calculus - Early Transcendentals - by James Stewart*. During the semester we will cover parts of the following chapters:

- Chapter 6 Integrals
- Chapter 7 Techniques of Integration
- Chapter 8 Further Applications of Integration
- Chapter 9 Differential Equations
- Chapter 10 Parametric Equations and Polar Coordinates
- Chapter 11 Infinite Sequences and Series

In Chapter 6 we will learn how to find areas between curves, volumes by slicing, and volumes by shells. Chapter 7 deals with integration techniques: integration by parts, partial fractions, and by trigonometric substitution. We shall also cover numerical approximation of integrals and improper integrals. In Chapter 8 we consider applications of integration to arc length, hydrostatic pressure, and center of mass. Chapter 9 is concerned with solving first order differential equations by separation of variables. Applications are given to population growth. Chapter 10 deals with parametric equations and polar coordinates with applications to areas and arclength. In Chapter 11 we study convergence tests for series: integral, comparison, ratio, root, absolute and alternating tests. In this chapter we also study Taylor series and properties of power series.

Homework problems will be assigned after each testing period. Homework assigned before test 1 is at the end of this syllabus. The homework consists of two types: (a) possible homework quiz questions, (b) additional problems. As regards (a) and (b), each Tuesday a homework quiz of 10-15 minutes (beginning January 27) will be given in recitation, except during the week after we have a test. The quiz will consist of several problems from (a) (your assigned homework). If you have already done the problem, you may copy it from your homework onto

the quiz sheet. The quiz will be graded by the recitation instructor and returned by at least the following Tuesday. Homework from (b) may be used for tests and also by the recitation instructor for examples. In general the recitation instructor will work some but not all of your assigned homework in class. The recitation instructor may also collect homework, or ask members of the class to put some of the problems in (a) or (b) on the blackboard. Some recitations he/she may choose to explain problems on the blackboard while other recitations he/she may ask students to work in groups and visit each group individually. Part of each student's grade will be based on his/her performance in recitation (class participation, attendance, scores on homework, quizzes, etc). Also, attendance will be taken in lecture and points awarded accordingly (see Grades).

4. **Tests:** There will be three examinations during the semester and a final examination. All tests will be in class as follows:

- (a) First Test: Wednesday February 11, in class.
- (b) Second Test: Wednesday March 11, in class.
- (c) Third Test: Wednesday April 15, in class.
- (d) Final Test: Tuesday May 5, 10:30 - 12:30 pm.

5. **Grades:** Points for your grades will be based on :

- Hour Tests = 300
- Final Test = 125
- Recitation Grade = 50
- Attendance in Lecture = 25

At the end of the semester each students points will be added and his/her percentage of the total points will be calculated. You are guaranteed that if your percentage is the university standard, then you will get at least that grade:

- 90 - 100 percent = A
- 80 - 89 percent = B
- 70 - 79 percent = C
- 60 - 69 percent = D
- 0 - 59 percent = E.

However there may also be a slight curve given after the percentages are figured. Also, extra credit problems are often given on tests.

6. **Cheating:** You know what cheating is, DON'T. The work on the three tests and final must be independent. The University's minimum penalty for cheating is failure in the course. Cheating in mathematics is easy to detect and easy to prove. More to the point, your integrity is far more important than a good Calculus 2 grade.

7. **Calculators:** Graphing calculators such as the TI-82, 86 are not absolutely necessary but are strongly recommended for this course. Calculators which have a keyboard and are capable of doing symbolic manipulation are not allowed on exams.

8. **MA 194:** You should sign up for MA 194 sections 001 or 004 (your section number should be the same as for MA 114). Please check the section numbers carefully on your course enrollment sheet. MA 194 is worth one hour of pass-fail credit.

9. Important Dates

- Monday, January 19 Martin Luther King Birthday, no school
- March 16 - 21 Spring Break, no school
- Friday, April 3 Last day to drop without a grade.
- Friday, May 1 Last day of classes during the semester.

10. **Online Support** A copy of this syllabus along with future review sheets for tests may be found under MA 114 at <http://www.ms.uky.edu/~john/index.html>

11. Questions or Complaints about MA 114

- First see myself or the recitation instructor
- Second see the mathematics department ombudsman
- Third see the university ombudsman

Homework

Review of Inverse Trig. Functions (recitation handout, not for HW quiz questions) 1,3,7,11,23,25,43,45,59,63
 Section 5.5 (page 406) (possible HW quiz questions) 7,19,23,29,37,51,57,61
 Section 5.5 (page 406) (additional problems) 1,5,9,15,21,25,33,39
 Section 6.1 (page 420) (possible HW quiz questions) 7,13,19,21,27
 Section 6.1 (page 420) (additional problems) 9,11,15,23,25
 Section 6.2 (page 430) (possible HW quiz questions) 3,5,11,15,31,35,51,59
 Section 6.2 (page 430) (additional problems) 7,13,19,23,27,33,53,57,61
 Section 6.3 (page 436) (possible HW quiz questions) 3,5,9,17,21,25
 Section 6.3 (page 436) (additional problems) 7,13,19,23,31
 Section 7.1 (page 457) (possible HW quiz questions) 5,7,11,13,17,23,25,33
 Section 7.1 (page 457) (additional problems) 3,9,15,21,27,29,37
 Section 7.2 (page 465) (possible HW quiz questions) 3,7,11,17,23,31,37,41,45
 Section 7.2 (page 465) (additional problems) 5,9,15,19,25,29,35,45,49
 Section 7.3 (page 472) (possible HW quiz questions) 3,5,11,15,25,29
 Section 7.3 (page 472) (additional problems) 5,9,13,17,23,27
 Section 7.4 (page 481) (possible HW quiz questions) 1,5,9,11,19,25,29,31
 Section 7.4 (page 481) (additional problems) 3,7,13,17,21,27,35,39
 Section 7.5 (page 488) (possible HW quiz questions) 5,9,11,15,21,25,29,33,43
 Section 7.5 (page 488) (additional problems) 3,13,17,23,27,37,41,45,51,57,67,73
 Section 7.7 (page 505) (possible HW quiz questions) 3,5,17,21
 Section 7.7 (page 505) (additional problems) 7,15,19,29
 Section 7.8 (page 515) (possible HW quiz questions) 5,9,13,17,21,27,49,57
 Section 7.8 (page 515) (additional problems) 11,15,19,23,31,35,51,53,59
 Section 8.1 (page 530) (possible HW quiz questions) 3,7,11,17,31
 Section 8.1 (page 530) (additional problems) 5,9,13,15,33
 Section 8.3 (page 548) (possible HW quiz questions) 5,7,13,27,31
 Section 8.3 (page 548) (additional problems) 3,7,11,15,25,33,35