

Math 345 Sections 0025 and 0030 – Autumn 2011  
Foundations of Higher Mathematics

**Instructor:**

Nathan Broaddus

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**Office Hours:** MTuWTh 1:30–2:18PM in MW 650

**Meeting times and locations:**

Section 0025 MTuWTh 12:30PM–1:18PM in UH 0090

Section 0030 MTuWTh 2:30PM–3:18PM in CC 0358

**Course webpage:**

<http://www.math.osu.edu/~broaddus/345>

**Textbook:**

Neil Falkner, *The Fundamentals of Higher Mathematics*, Autumn 2011 edition.

**About this course:**

Welcome to Math 345! This course is likely to be a radical departure from the math classes you have had in the past. Whereas previous math courses may have emphasized problem solving, calculation techniques, and correct answers, in Math 345 we will begin to learn the language and philosophy of mathematics. Here we will develop your ability to *read* and *write* logical statements and eventually combine them into proofs.

**What you should get out of this course:**

During the course of this quarter you should develop the your ability to do the following:

1. manipulate statements using basic logic
2. recognize, understand and memorize precise definitions for mathematical terms such as *function*, *one-to-one*, *bijection*, *divide*, *prime*
3. write clear, complete mathematical statements and proofs
4. edit your writing for clarity
5. read and understand mathematical writing
6. know how to apply various techniques of proofs such as *proof by induction*, *proof by counterexample*, *proof by contradiction*

**Grading:**

Your grade will be computed using the follows weights:

- 40% Final exam – 11:30am Mon. Dec. 5 (Section 0025) or 1:30pm Wed. Dec. 7 (Section 0030)
- 20% Midterm 1 – Thursday October 20
- 20% Midterm 2 – Thursday November 17
- 20% Homework and Quizzes

Your grades will be recorded on Carmen and your final grade will be curved in consultation with the other sections of this course. Consequently, it is impossible to give *a priori* a precise course-total-to-letter-grade correspondence.

**Homework:**

Homework will be announced on the website (<http://www.math.osu.edu/~broaddus/345>) and is **due at the beginning of class. No late homework will be accepted!** If you cannot make it to class be sure to make arrangements for a classmate to hand in your homework for you. Your lowest six homework grades will be dropped. It is your responsibility to check the website daily to make sure that you do not miss a homework assignment.

**Working Together:**

You are encouraged to work together on homework assignments. In fact it is a very good idea to find someone a classmate to work with on a regular basis. However, you should write up your homework solutions separately.

**Help:**

If you are having trouble in the class you can

1. ask lots of questions in class (this is my favorite option)
2. come to my office hours (MTuWTh 1:30-2:18 in MW650)
3. visit the Mathematics and Statistics Learning Center in CH 129
4. make an appointment with me for another time

Don't let yourself fall behind. This class moves very quickly.

**Calculators and other electronic devices:**

Calculators, smart phones, computers, tablets and other electronic computation devices are not allowed during quizzes and exams. You are encouraged to do further research on your homework online, but you should not consult online solution sets for this course for homework that you have not handed in or hope to have graded in the future.