MODEL THEORY
MATH 762

Fall 2016
MW 3:55p.m.–5:10 p.m. in LeConte 303B
Instructor: George F. McNulty
302 LeConte

Office Hours: MW 1–3:30pm TTh 11:45 am–1 pm

Text: *Elementary Model Theory*
By George McNulty

Recommended Supplementary Texts:
A Shorter Model Theory
By Wilfrid Hodges

Model Theory
By Chen Chung Chang and H. Jerome Keisler

1. WHAT WE WILL COVER

We will cover the whole of our text. It is available at

`http://people.math.sc.edu/mcnulty`

2. THE WORK AND WHAT YOU SHOULD EXPECT TO GET OUT OF THIS COURSE

Once the introductory phase of the course is completed, there will be a series of problem sets that each student is expected to complete. Mastering the problem sets should give each student a detailed familiarity with the main concepts and theorems of model theory and how these concepts and theorems might be applied. So working through the problems sets is really the heart of the course. Most of the problems require some reflection and can usually not be resolved in just one sitting.

In addition to mastering the concepts and theorems at the heart of the course, your work should provide you with enhanced skills at formulating proofs, in improved ability in mathematical exposition, and the basis upon which to devise applications of the concepts and methods of model theory to other parts of mathematics.

3. GRADES

The grades in this course will be based on each student's work on the problem sets. Roughly speaking, an A will be assigned to students whose problems sets eventually reveal a mastery of the central concepts and theorems of model theory; a B will be assigned to students whose work reveals a grasp of the basic concepts and a reasonable competence, short of mastery, in putting this grasp into play to solve problems.

4. THE FINAL

As the material is ill-suited to a sit down three hour writing effort, in place of a final examination we will instead have a party at my house. Everyone (and their partners) is invited. The party does have a little exit exam. . . .

I plan to offer a MATH 768E in the spring 2017 semester. The topic of that course will be a subfield of mathematical logic—*equational logic*—which has close connections to algebra in general. MATH 762 and MATH 768E would form a course sequence upon which a Ph.D. Comprehensive Exam could be based.

Please feel free to drop by and ask for more details. My offcie is 302 LeConte.