Graduate Committee

Course Syllabus

Spring, 2013

Time: TTh 11:00–12:15

Course Number: Math 713

Course Title: Mathematical Logic II

Instructor: Chris Laskowski

Office: 3312, Phone: 5-5336, email: mcl@math.umd.edu

webpage: www.math.umd.edu/~mcl/713.html

Course Outline:

This is the second semester of a self-contained introduction to Mathematical Logic at the graduate level. Topics include:

- Examples of decidable theories
  (a) Model completeness and quantifier elimination
  (b) Presburger arithmetic
  (c) Algebraically closed fields
- Incompleteness and undecidability
  (a) Effective procedures and computability
  (b) Recursive functions
  (c) Gdel’s incompleteness theorems
  (d) Undecidable problems
- Recursion theory
  (a) Partial recursive functions
  (b) Turing reducibility
  (c) Degrees of unsolvability
  (d) Arithmetic hierarchy

Course work:

- Approximately 10 homework sets
- Midterm on Wednesday, April 3
- Final on Saturday, May 11, 8:00-10:00am.

Recommended references:

- Notes by Prof. David Kueker (on class webpage).
- Chang and Keisler, Model theory (mostly Chapter 3).
- Boolos and Jeffrey, Computability and Logic.