Course Announcement

Mathematical Logic and Set Theory

Math 220B, Winter Quarter 2016
MWF 1:00 pm–1:50 pm, MS 5148

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Office hours. W 2:00 pm–2:50 pm.

Description. *Mathematical logic* is a group of interrelated mathematical subjects which came about as an outgrowth of the advances in the foundations of mathematics made in the late 19th and early 20th century. Since its birth during the study of the philosophical underpinnings of mathematics, the subject has grown both in breadth and depth, and has forged connections to many other parts of mathematics and computer science. Nowadays, mathematical logic is often divided into the four fields of *set theory, model theory, recursion theory* (or *computability theory*) and *proof theory.* The topics in this course are part of the common background of mathematicians active in any one of these areas.

In Math 220A we introduced the syntax and semantics of first order logic, proved Gödel's Completeness Theorem, and took a first few steps in model theory. In Math 220B we will concentrate on Gödel's Incompleteness Theorems and computability theory.

Prerequisites. Math 220A or familiarity with its content.

Course text. No text book is required, but the following book is a good companion:

J. Shoenfield, *Mathematical Logic,* A K Peters/CRC Press, 2001.

Grading. The final grade will be based on homework (50%), and a final exam (50%).