Syllabus for Math 414 (Spring 2019)

Except for the first item below, the rest of the material comes from the textbook for this course: *Logic and Structure* by Dirk van Dalen, fifth edition (fourth will do), Universitext, 2013, Springer.

- Section 1.2 on Sets and Maps from the notes handed out on January 14.

  It is also a good idea to read the historical remarks preceding this Section, and to read the Preface and Introductory Chapter 1 of van Dalen's book.
- Chapter 2 in van Dalen's book: Propositional Logic, including its semantics based on truth tables, the proof system of natural deduction, and its completeness.
- Chapter 3 in van Dalen's book: Predicate Logic, also called *First-Order Logic* and abbreviated as *FOL*, its semantics and its proof system of natural deduction.
- Parts of Chapter 4 in van Dalen's book, including at least Gödel's completeness theorem and some of its consequences.