CSC 438F/2404F   Computability and Logic   Fall, 2016

Prerequisites for 438: See Calendar
Exclusions for 438: MAT309H, PHL344H
Lectures: MW 4 in SS 2106
Tutorials: F 12 in SS 2106
Tutor: Lalla Mouatadid

Instructor: Stephen Cook, SF 2303C, 416 978-5183, sacook@cs.toronto.edu
Office hours: MW 5:15 - 6:00, or drop in, or by appointment.
QUESTIONS VIA EMAIL ARE WELCOME.

Course Web Page: `www.cs.toronto.edu/~sacook/csc438h/`

pdf files for course notes and problem sets will be available on the web page.

Text: None
Course Notes: Available on web page

Topics: Syntax and semantics of the propositional and predicate calculus, completeness of Gentzen proof systems, formal theories, nonstandard models, and the Godel Incompleteness Theorems. Recursive and primitive recursive functions, Church's thesis, unsolvable problems, recursively enumerable sets.

References:

S Buss: Chapters I and II: An introduction to proof theory, in **Handbook of Proof Theory**, S Buss Ed., Elsevier, 1998, pp1-147. (grad) AVAILABLE from course web page.
H.B. Enderton, **A Mathematical Introduction to Logic** (undergrad)
E. Mendelson, **Introduction to Mathematical Logic**, 3rd edition (undergrad/ grad)
M.Davis, R. Sigal, and E. Weyuker, **Computability, Complexity, and Languages: Fundamentals of Theoretical Computer Science** (undergrad/grad)
Michael Sipser, **Introduction to the Theory of Computation** (undergrad/grad)

Marking Scheme: 4 assignments each worth 10% (Due at beginning of tutorial Sept 30, Oct 21, Nov 18, Monday Lecture Dec 5. 1 closed-book term test worth 20%, in tutorial Oct 28
final exam worth 40%

Assignments are due at the *beginning* of tutorial, since solutions will be discussed during the tutorial.

The work you submit must be your own. You may discuss problems with each other; however, you should prepare written solutions alone. Copying assignments is a serious academic offence and will be dealt with accordingly.