**Department of Mathematics & Statistics**
**Concordia University**

> **MATH 640B**
> Topics in Logic
> *Winter 2015*

| | |
|---|---|
| **Instructor:** | Dr. N. Hardy, Office: LB 921-11 (SGW), Phone: 848-2424, Ext. 3233 |
| | Email: nadia.hardy@concordia.ca |

**Office Hours:**     TBA

**Class schedule:**     Wednesdays, 6:00 to 8:15 pm, LB 921-4.

**Notes:**     Attendance is mandatory; students who miss 2 or more classes will lose 10% of their final grade.

All pertinent information regarding this course will be posted in Moodle.

**Topics:**     *For all students*: Proving techniques, truth tables and rules of argumentation. Mathematical writing. Examples from several areas of mathematics: e.g., Peano's arithmetic; Euclid's Elements; Introduction to axiomatic settheory.Cardinality and introduction to ordinality. Induction, strong induction and transfinite induction. Computability and complextity. Incompleteness. Goedel's theorems. P vs. NP.

*For MTM (Math Ed) students:*Review of mathematics education research on students' difficulties with writing and understanding proofs.

**Assessment:**     Homework assignments: 30%
Midterm exam: 30%
Final exam: 40 %
Assessment is adjusted to students programs. PhD students will have extra work in homework assignments and exams. MTM students will have some mathematics questions in homework assignments and exams replaced by questions concerning the education component (see Topics above).

**Academic integrity:** http://provost.concordia.ca/academicintegrity/