FORMAL METHODS

Winter 2011

(last revised: 31 jan 2011)

COURSE

LING 461

1085 Docteur-Penfield
rm. 002

TIME:
MWF 9h35–10h25

INSTRUCTOR

Brendan S. Gillon

1085 Docteur-Penfield
rm. 119

OFFICE HOURS:
by appointment, and
WF 10h35–11h25

tel. no.: 514 398 4868

AIM OF THE COURSE:
The aim of the course is to prepare students so that they can understand the mathematics used in the literature in syntax, but especially in semantics, and acquire a degree of mathematical maturity. Stress is put on understanding fundamental concepts and doing informal proofs. Topics covered are: sets and operations on them, family of sets and operations on them, mathematical induction, relations and functions, partial orders and lattices.

COURSE MATERIAL: posted on webct

EVALUATION: 10 problem sets (20%);
1 Midterm Exam (35%);
1 Final Exam (45%).

PROCEDURES:

- NO LATE PROBLEM SETS WILL BE ACCEPTED. Each problem set must be turned in at the beginning of the class on its due date.
- NO MAKE-UP EXAMINATIONS WILL BE GIVEN to anyone who does not have a certified medical excuse.
- NO ANSWER TO ANY GRADED PROBLEM OR EXAMINATION QUESTION WILL BE RE-ASSESSED, unless:
    1. the answer is written in ink;
    2. it has not been written over; and
    3. the answer is clearly marked as such.
- Assignments and examins be written either in ENGLISH or in FRENCH.

McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the code of student conduct and disciplinary procedures. (See www.mcgill.ca/integrity for more information.)

L'Université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquence à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires. (Pour de plus amples renseignements, veuillez consulter le site www.mcgill.ca/integrity.)

SYLLABUS

WEEK 1 (3 Jan):		no class
	introduction	ch. 1
	sets	ch. 1
		ch. 0, pp. 3–6
		Appendix, pp. 1–11
WEEK 2 (10 Jan):	set operations	ch. 2
	ordered sets	ch. 3
	families of sets	ch. 4.1–4.2
WEEK 3 (17 Jan):	families of sets	ch. 4.3
	families of sets	ch. 4.4
	induction	ch. 4.5
WEEK 4 (24 Jan):	relations	ch. 5.1–5.2
	relations	ch. 5.3.1
	relations	ch. 5.3.2
WEEK 5 (31 Jan):	relations	ch. 5.3.3
	relations	ch. 5.3.3
	functions	ch. 6.1–6.2
WEEK 6 (7 Feb):	functions	ch. 6.3
	functions	ch. 6.4.1
	functions	ch. 6.4.1
WEEK 7 (14 Feb):	functions	ch. 6.4.2
	functions	ch. 6.5
	review	
WEEK 8 (21 Feb):	READING WEEK	no classes

WEEK 9 (28 Feb):	relations	ch. 7.1 – 7.3.1
Monday, 18h00 – 20h00	**midterm**	MAASS 10
	relations	ch. 7.3.2 – 7.3.4
	relations	ch. 7.4
WEEK 10 (7 Mar):	relations	ch. 7.5
	relations	ch. 7.6.1
	relations	ch. 7.6.2 – 7.6.3
WEEK 11 (14 Mar):	relations	ch. 7.6.4 – 7.6.5
	orders	ch. 8.1 – 8.3.1
	orders	ch. 8.3.2 – 8.3.3
WEEK 12 (21 Mar):	orders	ch. 8.3.4.1 – 8.3.4.2
	orders	ch. 8.3.4.3 – 8.3.4.4
	orders	ch. 8.3.5
WEEK 13 (28 Mar):	orders	ch. 8.3.6
	semi-lattices	ch. 9.1 – 9.2.2
	semi-lattices	ch. 9.2.3 – 9.2.2
WEEK 14 (4 Apr):	semi-lattices	ch. 9.2.4
	semi-lattices	ch. 9.2.5
	review	