SEMANTICS 2

Winter 2020

(last revised: January 5, 2020)

	INSTRUCTOR	COURSE
NAME:	Brendan S. Gillon	LING 460
LOCATION:	1085 Docteur-Penfield rm. 119	1085 Docteur-Penfield rm. 002
TIME:	OFFICE HOURS Mn Wd: 9h35–10h25 and by appointment	CLASS HOURS: Mn Wd Fr: 8h35–9h25
CONTACT:	tel. no.: 514 398 4868	

COURSE MATERIAL:

- REQUIRED: *Natural Language Semantics : formation and valuation*, by Brendan S. Gillon, MIT Press. The book is available for purchase, either in cash or with a cheque, at *The Word* (469 Milton street; http://wordbookstore.ca/; 514 845 5640; wordbook@securenet.net).

  A hard copy of the textbook sells for $US 80 ($CDN 106, GST not included). At *The Word*, it sells for $CDN 107, which includes GST. MIT Press provides access to an electronic edition of the book for 4 months for $US 32 ($CDN 42.50, GST not included).

- SUPPLEMENTARY: Carpenter, Bob 1997 *Type logical semantics*. Cambridge, Massachusetts: The MIT Press.

AIMS OF THE COURSE and METHOD OF EVALUATION:

The aim of the course (LING 460: Semantics 2) is to introduce students to the two most fundamental tools in semantic theory, namely, the Lambek calculus and the Lambda calculus, a thorough understanding of which is necessary for advanced work in semantic theory. The Lambek calculus, due to Jim Lambek, late professor emeritus of McGill University's Department of

Mathematics and Statistics, is a generalization of the propositional calculus and it has applications in a variety of domains in mathematics, and perhaps surprisingly, in linguistics too, where it provides the mathematics of syntactic categories. In other words, the propositional calculus can be adapted to be used to formalize the syntactic categories of natural language expressions. The Lambda calculus is a notation developed by Alonzo Church to represent all functions in mathematics. It is widely used by natural language semanticists to express the values which can be associated with the expressions of a natural language. It turns out that there is a deep and elegant connection between the Lambek calculus and the Lambda calculus, which natural language semanticists find very useful to exploit. This connection is known as the Curry-Howard isomorphism. Making all this clear as well as showing how these tools apply in an enlightening way to a variety of natural language expressions, including those involving coordination, quantificational expressions and comparative expressions, is what the course aims to do.

The course presupposes LING 360, though a diligent student with knowledge of introductory logic (e.g., what is covered in PHIL 210) should be able to keep up and is welcome to enroll. Success in the course requires that one is at ease with, and not at all a whiz at, elementary logic and that one has the self discipline to work regularly at studying the material. Assessment is based on problem sets and class participation only. I anticipate giving ten problem sets. (All written work may be submitted either in English or in French.)

SCHEDULE:

WEEK 1 (06 Jan):	set theory review	Gillon ch. 2
WEEK 2 (13 Jan):	set theory review	Gillon ch. 2
WEEK 3 (20 Jan):	classical quantificational logic	Gillon ch. 11
WEEK 4 (27 Jan):	classical quantificational logic	Gillon chs. 11
WEEK 5 (03 Feb):	enriched quantificational logic	Gillon ch. 12
WEEK 6 (10 Feb):	deduction: classical propositional logic	Gillon ch. 7
WEEK 7 (17 Feb):	deduction: classical propositional logic	Gillon ch. 7
WEEK 8 (24 Feb):	Lambek Calculus	Gillon ch. 13.1–2
WEEK 9 (02 Mar):	READING WEEK	
WEEK 10 (09 Mar):	Lambda calculus	Gillon ch. 13.3
WEEK 11 (16 Mar):	minimal English clauses	Gillon ch. 10
WEEK 12 (23 Mar):	simple English noun phrases	Gillon ch. 14
WEEK 13 (30 Mar):	simple English noun phrases	Gillon ch. 14
WEEK 14 (6 Apr):	catch up	
WEEK 15 (13 Apr):	conclusion	Gillon ch. 15

STATEMENT FROM THE ADMINISTRATION:

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