

SEMANTICS 2  
Winter 2021  
(last revised: January 4, 2021)

	INSTRUCTOR	COURSE
NAME:	Brendan S. Gillon	LING 460
LOCATION:	online	online
TIME:	OFFICE HOURS by appointment	CLASS HOURS: Mn Wd Fr: 8h35–9h25

REQUIRED COURSE MATERIAL:

*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](mailto: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).

PROCEDURES AND METHOD OF ASSESSMENT:

- The class will meet three times a week for 50 minutes each on zoom live. Students are expected to attend each class. If you cannot attend a class, please let me know. You may miss three classes without penalty. Thereafter, you will be penalized 2 % of your grade for each class missed without a legitimate excuse.
- The schedule indicates what material will be covered each week. The schedule may be slightly modified, should it become evident that more time must be spent on the topic to ensure comprehension.
- Assessment will be based on problem sets only. There will be ten, all equally weighted. A problem set will be posted, once the topic to

which it pertains has been covered. Normally, one will have one week to complete a problem set. Any problem set may be submitted either in English or in French.

#### AIMS OF THE COURSE

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.

## SCHEDULE:

WEEK 1 (07 Jan):	set theory review	Gillon ch. 2
WEEK 2 (11 Jan):	set theory review	Gillon ch. 2
WEEK 3 (18 Jan):	classical quantificational logic	Gillon ch. 11
WEEK 4 (25 Jan):	classical quantificational logic	Gillon ch. 11
WEEK 5 (01 Feb):	enriched quantificational logic	Gillon ch. 12
WEEK 6 (08 Feb):	deduction: classical propositional logic	Gillon ch. 7
WEEK 7 (15 Feb):	deduction: classical propositional logic	Gillon ch. 7
WEEK 8 (22 Feb):	Lambek Calculus	Gillon ch. 13.1–2
WEEK 9 (01 Mar):	READING WEEK	
WEEK 10 (08 Mar):	Lambda calculus	Gillon ch. 13.3
WEEK 11 (15 Mar):	minimal English clauses	Gillon ch. 10
WEEK 12 (22 Mar):	simple English noun phrases	Gillon ch. 14
WEEK 13 (29 Mar):	simple English noun phrases	Gillon ch. 14
WEEK 14 (05 Apr):	catch up	
WEEK 15 (12 Apr):	conclusion	Gillon ch. 15

## STATEMENT FROM THE ADMINISTRATION:

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](http://www.mcgill.ca/integrity) for more information.)

L'Université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent 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](http://www.mcgill.ca/integrity).)