# Introduction to Formal Semantics

*Instructor*: Guillermo Del Pinal
*Office*: GA/C04: 142
*Office Hours*: TBA
*Email*: "ged2102@columbia.edu"

## Course Description

The goal of this course is to introduce students to the field of Natural Language Semantics. This course can be used as a preparation for further research for those who want to specialize in Semantics and related fields such as Philosophy of Language and the Cognitive Neuroscience of Language. To achieve basic literacy in semantics, the course will cover the tools and concepts of logic and mathematics currently used in formal semantic research, e.g., basic set theory and the lambda calculus. To learn how to apply these tools, the course will examine particular natural language constructions such as nominal modification and quantification. We will also discuss foundational and empirical issues regarding the semantic structure of lexical items and the nature of the combinatorial operations which determine the meaning of phrases.

## Course Materials

The main textbook for the course will be Heim and Kratzer's *Semantics in Generative Grammar* ('Heim & Kratzer'). All other readings are will be available on the course website.

## Grading Policy

The grade will be determined on the basis of one essay (80%) and class participation (20%). All problem sets will count as part of the class participation score. The topics for the essays should be consulted with me beforehand.

## Topics and Readings

**Week 1: Truth-Conditional Semantics: The Basic Idea**

- Heim & Kratzer: Chpt. 1

**Week 2: Truth-Conditional Semantics: The Lambda Calculus**

- Heim & Kratzer: Chpt. 2
- Carpenter, *Type-Logical Semantics*, Chpt. 2

**Week 3: Truth-Conditional Semantics: Higher-order Logic**

- Carpenter, *Type-Logical Semantics*, Chpt. 3

**Week 4: Semantics and Syntax**

- Heim & Kratzer: Chpt. 3
- Collins (2003), "Horwich's Schemata Meet *Syntactic Structures*" in *Mind* vol 112(447): 399-432.
- Pylkkanen (2013), "Grounding the cognitive neuroscience of semantics in linguistic theory" in *Language and Cognitive Processes* vol. 26:9: 1317-1337

**Week 5: Predicates**

- Heim & Kratzer: Chpt. 4
- Recanati (2010). "Compositionality, Flexibility, and Context-Dependency" in *Truth-Conditional Pragmatics*.
- Rothschild and Segal (2009). "Indexical Predicates" in *Mind & Language* vol. 24 (4): 467–493.

**Week 6: Modifiers**

- Heim & Kratzer: Chpt. 4
- Partee (1995). "Lexical semantics and Compositionality", in *Invitation to Cognitive Science*, 2nd edition. Gleitman, L. and Liberman, M. (eds). MIT Press, Cambridge. pp. 311-360
- Recanati (2010). "Adjectives: a case study" in *Truth-Conditional Pragmatics*

**Week 7: Definite Descriptions**

- Heim & Kratzer: Chpt. 4
- Abbott (2011). *Reference* (Oxford University Press), Chpt. 6.

**Week 8: Definite Descriptions**

- Rothschild (2007). "Presuppositions and Scope" in *The Journal of Philosophy* vol. 104 (2): 71-106
- Coppock and Beaver (2015). "Definiteness and determinacy" in *Linguistics & Philosophy* 38: 377-435.

**Week 9: Relative Clauses, Variables and Variable Binding**

- Heim & Kratzer: Chpt. 5

**Week 10: Quantifiers: Introduction**

- Heim & Kratzer: Chpt. 6-8

**Week 11: Quantifiers: their lexical semantics**

- Pietroski et al (2009). "The meaning of *most*: semantics, numerosity, and psychology". In *Mind & Language* vol. 24(5): 554-585.
- Hackl (2009). "On the grammar and processing of proportional quantifiers: *most* vs *more than half*" in *Natural Language Semantics* vol. 17: 63-98.
- Lindz et al. (2011). "Interface transparency and the psychosemantics of *most*" in *Natural Language Semantics* vol. 19: 227-256

**Week 12: Quantifiers: their lexical semantics**

- Kotek et al. (2015). "Experimental investigations of ambiguity: the case of *most*" in *Natural language semantics* vol. 23: 119-156
- Solt (2016). "On measurement and quantification: the case of *most* and *more than half*" in *Language* vol. 92: 65-100.