

Phil 795L – Seminar: Neo-Logicism

Fall 2007. Thursdays 4:00-6:30pm in Herter 204? (Or Bartlett 374?)

Prof. Kevin Klement (Please call me “Kevin”.)

Course description:

An in-depth examination of the recent attempts to revive the position in the philosophy of mathematics known as *logicism*: the theory that arithmetical truths are a species of logical or analytical truth, or that pure mathematics (or arithmetic at least) reduces to logic in one form or another. Requirements: weekly reading assignments, presentation and term paper. Prerequisites: Graduate student with strong background in formal logic, or consent of instructor

Contact info:

My office is 353 Bartlett Hall. My office phone is 545-5784. My office hours are Tuesdays 2:30pm-3:30pm, Thursdays 11am-12pm and by appointment. I'm often in my office many other times. Feel free to drop by any time. You may also e-mail me at klement@philos.umass.edu or call me at home at 665-9559. Our course web page is <http://courses.umass.edu/phil795/>

Texts:

Short readings will be made available for photocopy in the metal cabinet on the 3rd floor of Bartlett, or will be distributed by e-mail, or are available online. Owning a copy of Frege's *Foundations of Arithmetic* or the portions thereof in *The Frege Reader* might be worthwhile, however.

Course requirements:

Your final grade will be based on the following requirements, (1) in-class participation (15%), (2) one class presentation (15%), (3) weekly assignments (25%), and (4) a final term paper (45%).

Weekly Assignments: You are expected to carefully read the selected texts for each session before the seminar meeting and come prepared to discuss them. To help facilitate this, each week you are expected to write a 1-3 page essay in which you (1) summarize the reading, and (2) identify any criticisms or points of discussion (including points in need of clarification) involving the reading. These essays are due at the start of class on the day on which we will be discussing the relevant readings. You will be graded on 1-5 scale, with 1 representing a barely acceptable essay, 2 representing a deeply problematic essay, that misrepresents the views of the philosopher or philosophers in question or commits other abuses of philosophical method, 3 representing an essay that is slightly lacking in some area, but generally acceptable, 4 representing a good essay that performs the desired tasks as expected, and 5 representing an essay with substantial and original insight. (You should never expect to receive anything above 4. A student receiving a 4 on every assignment should still expect a good grade for this portion. I will only award a 5 to an essay that *surpasses* my expectations.) In determining your grade, I will take into account only your 10 highest scores of 12 possible essays. This means you may either drop your two lowest scores, or simply not write two essays (or combine the two options). You need not prepare an assignment for the week you will be presenting.

Presentation: Early in the semester, each student will choose (or be assigned) one week in which he or she is expected to give a presentation on the readings for that week (approx. 20 minutes), to be given at the beginning of the seminar meeting, and should also be prepared to lead the discussion for that class period. The presentation should (1) summarize the main points of the readings, though at his or her discretion the presenter may focus on certain issues he or she finds most interesting, (2) identify any questions or concerns the presenter has with understanding or interpreting the material, which he or she would like to discuss in class, (3) critically discuss one or more philosophical issues raised in the readings, as a starting point for seminar discussion.

Term Paper: Each student is prepared to write a 15-25 page term paper that aims to contribute something original to the discussion of any of the texts or logical/philosophical issues discussed in the course. The paper should constitute critical and original discussion of the philosophical issues concerning logicism and/or neo-logicism. The amount of outside research done for the paper is left to your discretion, but a careful search of the relevant secondary material is strongly recommended. It is due either at the end of finals week (December 22nd), or by the first day of Spring Semester (if you take an incomplete).

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READING SCHEDULE
(tentative and likely to change)

Sept. 6 — Course Introduction

Sept. 13 — Frege, *The Foundations of Arithmetic*, Introduction, §§1-4, 45-69, 87-91, 104-09. [This can all also be found in *The Frege Reader*.]

Sept. 20 — Zalta, “Frege’s Logic, Theorem, and Foundations for Arithmetic” in *The Stanford Encyclopedia of Philosophy*. (<http://plato.stanford.edu/entries/frege-logic/>)

Sept. 27 — Russell, “The Regressive Method of Discovering the Premises of Mathematics,” *Essays in Analysis* pp. 272-83; “Mathematical Logic As Based on the Theory of Types,” in *Logic and Knowledge*, pp. 59-102.

Oct. 4 — Hodes, “Logicism and the Ontological Commitments of Arithmetic,” *Journal of Philosophy* 81 (1984), pp. 123-49.

Oct. 11 — Wright, “Number Theory and Logic,” chap. 4 of *Frege’s Conception of Numbers As Objects*.

Oct. 18 — Boolos, “Saving Frege From Contradiction,” in *Logic, Logic and Logic*, pp. 171-82 [originally published in *Proceedings of the Aristotelian Society* 1987]; “Is Hume’s Principle Analytic?” in *Logic, Logic and Logic*, pp. 301-14. [Originally published in Heck, ed. *Logic, Language and Thought*, OUP 1997.]

Oct. 25 — Heck, “On the Consistency of Second-Order Contextual Definitions,” *Noûs* 26 (1992), pp. 491-4; Dummett, “Neo-Fregeans: In Bad Company?” in *The Philosophy of Mathematics Today*, ed. M. Schirn, OUP, 1998, pp. 368-88; Wright, “Reply to Dummett”, *ibid.*, pp. 389-406.

Nov. 1 — Wright, “Is Hume’s Principle Analytic?” in *The Reason’s Proper Study*, pp. 307-334; [First published in *Notre Dame Journal of Formal Logic* 40 (1999), pp. 6-30.] ; Hale and Wright, “Implicit Definition and the A Priori,” *RPS*, pp. 117-151. [First published in *New Essays on the A Priori*, ed. Boghossian and Peacocke, 2000.]

Nov. 8 — Shapiro, “Prolegomenon to Any Future Neo-Logicist Set Theory: Abstraction and Indefinite Extensibility”, *British Journal for the Philosophy of Science* 54 (2003), pp. 59-91; Burgess, *Fixing Frege* (Princeton UP 2005), sec. 3.7 “Second-Order Logic Reconsidered,” pp. 201-214.

Nov. 15 — Rayo, “Logicism Reconsidered,” in *Oxford Handbook of the Philosophy of Mathematics and Logic*, ed. Shapiro, 2005, pp. 203-35; Linsky and Zalta, “What Is Neo-Logicism?” *Bulletin of Symbolic Logic* 13 (2006), pp. 60-99 .

Nov. 22. — Thanksgiving. No class.

Nov. 29 — OPEN (TBA)

Dec. 6. — OPEN (TBA)

Dec. 13. — OPEN (TBA)

Possible “Open” Topics:

- More historical stuff
- Field/Wright/others debate on mathematical realism more generally
- Work (especially Hale’s) on neo-logicist real number theory
- Completely distinct forms of (neo?-)logicism: e.g., Bostock, Cocchiarella, etc.
- Lots more on Hume’s law, abstraction, including Hale and Wright’s recent “To Bury Caesar”
- Further work on New V, and other revisions of Frege’s system, including predicative ones (Wehmeier, etc.)
- Relationship of set theory and logic
- More on the topic: “What is Logic?”