

Texts: *Coursepack* prepared especially for this course for this semester

Ernest Nagel and James R. Newman, *Gödel's Proof* Revised Edition,
(New York and London: New York University Press, 2001)

Bertrand Russell, *Introduction to Mathematical Philosophy* (New York, Dover
Publications, Inc., 1993; reprint of 1919 original)

To order the *Coursepack*, visit www.UniversityReaders.com. Click on “Students Buy Now” and follow the prompts. Doing so will not only let you order a hardcopy of the coursepack but to download a PDF file of the first 20% of the contents. Be sure to be able to save the download and have access to Adobe Acrobat or Adobe Reader software. For an overview of the order process, go to www.UniversityReaders.com/demo.

Course Content Goals: The core philosophical question for this course is whether mathematical truths are invented or discovered. That question divides into two further questions: What sort of knowledge is mathematical knowledge? What sort of objects are mathematical objects? We may identify two major positions on these issues. Realists hold that mathematical objects exist independently of human beings, that we may discover truths about them as we may discover truths about the objects in the physical world, and that we have particular cognitive capacities to make these discoveries. Constructivists hold that mathematical objects are constructed by human beings. Our knowledge of them is comparable to our other knowledge about the content of our minds. Plato is the philosophical ancestor of realists, while Kant is the philosophical ancestor of constructivists. We shall consider the views of both. Our principal concern is with the three main positions on these questions posed in the 20th century: logicism (Mathematics is logic, a form of realism), formalism (Mathematics is the science of formal systems, a form of constructivism), and intuitionism (Mathematics is the science of intuitive constructions, again a form of constructivism). Insofar as possible, we shall look at the impact of developments in the foundations of mathematics on approaching these questions and assessing these positions. Our goals are to become clear about the answers Plato, Kant, and certain philosophically inclined mathematicians have given to these questions, how they have attempted to justify these answers, and how they may deal with objections to their positions. **Students satisfy the course goals to the extent that they demonstrate on written work this understanding.**

General Education Requirement Goals: This course is included in Group B, Social science or natural science/mathematics of Stage 3: Focused Exposure of Hunter's General Education Requirement, and may be applied to satisfy that requirement. (It is my understanding that those students majoring in mathematics who wish to use this course to satisfy the requirement should sign up for the course as PHILO 376. Those majoring in philosophy should sign up for MATH 376. Those with other majors or who are not concerned with the requirement may choose either.) This course may also be used to satisfy partially the requirement to take at least two writing

intensive courses. The writing requirement involves a term project consisting of a very short initial step (150-200 words), , six short themes of approximately two pages each, and one larger paper, approximately 7-10 pages, the term paper. The short papers are preliminary studies for the term paper and may be incorporated into it.

Method of Course Evaluation or Outcomes Assessment: The initial step of the term composition counts 10 points. Each these counts 15 points. The final step counts 100 points. Late papers will be penalized at the rate of 10% for each business day late. Students not able to turn in their papers on the date due should contact me either by phone or e-mail to discuss the problem, preferably before the due date. There will be a full period mid-term in-class examination on Wednesday, October 22, 2008, and an in-class final examination during the final exam period on December 17, 2008. The mid-term and final examinations each count 100 points. Hence students can earn a maximum of 400 points in the course. At the end of the semester, a student's seven grades will be added together and the score translated from numbers to letters according to the scale 90-100% A, 80-89% B, 70-79% C, 60-69% D, below 60% F. Plus and minus grades will be given according to Hunter College guidelines.

Hunter College's Statement on Academic Dishonesty: Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

Hunter College's Statement on Disabilities: "In compliance with the American Disabilities Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical and/or Learning) consult the Office of AccessABILITY located in Room E 1124 to secure the necessary academic accommodations. For further information, please call (212-772-4857)/TTY (212-650-3230)."