UNIVERSITEIT VAN AMSTERDAM
INSTITUTE FOR LOGIC, LANGUAGE AND COMPUTATION

Philosophy of Mathematics

2004/2005; 2nd Semester
dr Benedikt Löwe

Syllabus.

Grading scheme. There will be three small homework sets (roughly one in February, one in March, one in April) and a final exam. In addition to that, every student has to do two short in-class presentations. Each of the homework sets will be worth 30 points, the presentations will be worth 45 points each and the final exam will be worth 90 points, for a total of 270 points.
A total of 170 points will be sufficient to pass the course. Grades will be given based on the distribution of points in the class ("grading on a curve").
Homework sets and the questions on the final exam will be graded on a scale of **excellent** (15-13) / **good** (12-10) / **OK** (9-7) / **not OK** (6-0) basis.
Each of the homework sets will have one "discuss" and one "paraphrase" question. The answer to a "discuss" question must be less than one page and will be graded based on correctness and style of writing. The answer to a "paraphrase" question must be as short as possible without leaving out anything important and will be graded based on style of writing, correctness (including grammar and spelling), conciseness (the shorter the better) and completeness.
You will get 35 points for each of the presentations with up to 10 bonus points for each presentation for particularly good performance.

Textbook. The course will follow the book "Thinking about mathematics. The philosophy of mathematics" by Stewart Shapiro (Oxford University Press 2000).

Course schedule. The following schedule is preliminary and may change slightly. All page numbers refer to Shapiro's book. All course participants are supposed to have read the relevant pages from the book before class. In the **Presentations & Discussion** sessions, 45 minutes of the session will consist of the student presentations, the rest is discussion. If there is more than one student assigned for a date, it is up to the students to plan and organize these 45 minutes. The presenters are supposed to read some of the references that Shapiro lists under "Further Reading" at the end of the chapters.

- **February 9. Lecture.** *Technicalities. The fundamental questions of philosophy of science and mathematics (p.3-20).*
- **February 16. Lecture.** *Some basic positions of ontology and epistemology (p.21-45).*
- **February 23. Presentations & Discussion.** *Plato (p.49-63).*
- **March 2. CANCELLED.**
- **March 9. Presentations & Discussion.** *Aristotle (p.63-72).*
- **March 16. Presentations & Discussion.** *Kant and Mill (p.73-103).*
- **March 23. Presentations & Discussion.** *Logicism (p.107-139).*

- **March 30. EXAM WEEK.** *There will be no midterm for this course but no class either.*
- **April 6. Presentations & Discussion.** *Formalism I: Frege and the early Hilbert (p.140-157).*
- **April 13. Presentations & Discussion.** *Formalism II: Hilbert's Programme and its collapse (p.158-171).*
- **April 20. Presentations & Discussion.** *Intuitionism (p.172-197).*
- **April 27. Presentations & Discussion.** *Platonism: Gödel and Quine (p.201-220).*
- **May 4. Presentations & Discussion.** *Maddy: Set-theoretic realism and set-theoretic naturalism. (p.220-225 and relevant chapters from Maddy's book "Naturalism in Mathematics" that will be handed out in class).*
- **May 11. Presentations & Discussion.** *Nominalism (p.226-243).*
- **May 18. Presentations & Discussion.** *Structuralism (p.257-289).*
- **May 25. EXAM WEEK.** *Written final two-hour exam with six questions. Exact scheduling will be announced.*