

PHIL 511: *Seminar on the Philosophy of Mathematics* Autumn 2010
MICHAEL HALLETT *E-mail:* michael.hallett@mcgill.ca Office: Leacock 936.
Wednesdays: 11:35–13:25 LEA 927
Course web site: **WebCT**

COURSE DESCRIPTION

Summary of Subject Matter. This seminar will be on the development of Hilbert's Programme of the 1920s, on its aims and its background. As part of the background, we will take some time to look at Hilbert's work on geometry, the differences in approach to the foundations of mathematics exhibited by Hilbert and Frege (and also Russell), and thus the logical and 'definitional' programmes of the latter. These will be compared to Hilbert's approach. We will then look at the way that Hilbert's programme of the 1920s emerged from this, partly as a natural development, and partly as a response to the logical problems raised by the paradoxes and the philosophical problems raised mainly by Weyl. We will then consider the details of the programme itself, as set out in major papers of Hilbert's from the 1920s, as well as important contributions from Hilbert's assistant on foundational matters, Paul Bernays, concentrating on the philosophical expositions of the programme, not least the appeals in these to various important Kantian elements. We will also look at the impact of Gödel's results on Hilbert's programme; as part of this, we will document a change in Hilbert's own perspective clearly visible at the beginning of the 1930s.

Aim. Part of the aim behind this choice of material is to introduce students to some of the major developments in the philosophy of mathematics at the hands of Frege, Hilbert and Gödel, the three people most responsible for the contemporary shape of the subject.

Requirements. Students must be comfortable with logic and formal techniques; having completed PHIL 310 (Intermediate Logic) or the equivalent, is an *absolute* requirement, and students will preferably have done at least one other course in Analytic Philosophy. The course will be a balance between technical material and philosophical analysis of it.

Reading Matter. The reading material will be assigned as the course progresses, according to the Reading List which will be made available on WebCT. However, the principal reading material will be papers by Hilbert and Bernays mainly from the 1920s and the early 1930s. *NB. All the works read will be made available from the WebCT site.*

Marking and Assessment Students will be expected to read the texts assigned for the week, and be prepared to initiate and/or pursue the discussion if assigned to do so. Students will be required to write a standard term paper for a seminar of around 5000 words, due on the final day of the semester. **NB. Please keep copies of work submitted.** *Extensions to deadlines set will be granted only in very exceptional circumstances, usually only for medical reasons and with a medical note (or for other, similar emergencies, appropriately documented).*

Policy for Late Work Late papers will be penalised at the rate of a third of a grade per day overdue. (Thus a paper adjudged to be worth a B+ will be assigned a B if it's one day late, a B– if late two days, and so on.)

Academic Integrity *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 for more information).*