MATH 338 – History and Philosophy of Mathematics

Course Outline (2017)

Instructor: Tom Fox, Burnside Hall 1243, fox@math.mcgill.ca

Office Hours: Tuesday 11:00-14:00 (provisional) or by appointment

Textbook: None. Notes and readings will be posted on line. References are listed below.

Method of evaluation: Two quizzes in class (40%) and a final exam (60%)

Overview: An introduction to the history of mathematical thinking from ancient times through the twentieth century. Topics include

- Mathematics in Egypt and Mesopotamia
- Greek mathematics from Thales to Aristotle
- Euclid's *Elements*
- Archimedes to Apollonius
- Mathematics in the Islamic world, India, and China
- The Renaissance in Europe: New numbers and analytic geometry
- Newton, Leibniz, Euler, and the infinitesimal calculus
- Non-Euclidean geometry
- Transfinite numbers and set theory
- The epistemological crisis

Additional information:

[1.] In accordance with McGill's Charter of Student Rights, students in this course have the right to submit in English or in French any written work that is to be graded. In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change. 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/students/srr/honest/ for more information).

References:

History:

Mathematical Thought from Ancient to Modern Times. M. Kline

The Heritage of Thales. W. S. Anglin, J. Lambek

A History of Mathematics, an Introduction. V. J. Katz

***Elements of the History of Mathematics*. N. Bourbaki**

Philosophy:

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Philosophy of Mathematics: An Introduction. <a href="'http://www.amazon.com/David-Bostock/e/B001HM