Phil 311   *Philosophy of Mathematics*   Fall 2022

Tuesdays and Thursdays: 11:35am–12:55pm,   Sherbrooke 688 Rm. 1085

DIRK SCHLIMM   Office: Leacock 916.   Email: dirk.schlimm@mcgill.ca

Summary. Mathematics has exerted a particular attraction to philosophers throughout history. For example, tradition has it that the phrase "Let no one ignorant of geometry enter" marked the entrance to Plato's Academy, Kant famously argued that "5+7=12" is a synthetic proposition that is knowable a priori, and Frege worried how we can determine whether Julius Caesar is a number or not. And even after more than 2000 years of philosophical reflections on the nature of mathematical truths, the status of mathematical objects, the sources of mathematical knowledge, the applicability of mathematics in science, and the methodology of mathematical practice, these topics still continue to puzzle philosophers.

This course provides an historically informed introduction to philosophy of mathematics. It is intended to present an overview of prominent issues and arguments, to motivate the students to appreciate this fascinating subject matter, and enable them to discuss contemporary research in philosophy of mathematics. To this end, philosophical reflections on mathematics and particular episodes in the history of mathematics will be presented and discussed side by side. Simple examples from mathematical practice (mainly geometry, arithmetic, and algebra) serve as illustrations for the subject matter the philosophical reflections are about, and, at the same time, they serve as proving ground for the adequateness of the philosophical claims about mathematics.

Prerequisites. Intro to Deductive Logic (Phil 210) or permission by the instructor. No particular background in mathematics above high-school level is required.

Readings. Will be made available on myCourses.

Requirements & grading. Students are expected to attend and participate in class, do the assigned readings, complete weekly homework assignments, take three in-class quizzes, write a critical summary of a recent research article, and write a final paper. The final grade depends on homework assignments (10%), three in-class quizzes (worth 5%, 10% and 10%; i. e., 25% in total), one critical summary of a contemporary research article (25%), and a term paper (40%). Every student can take up to two "late days" for handing in the homework assignments or papers during the semester. Otherwise, late homework will only be accepted if a request is made *before* the due date.