Course Announcement
Model Theory (PMATH 433/733)
Winter 2025   MWF 2:30–3:30 HH1101   Instructor: Rahim Moosa

This is a **new** course, being offered for the first time. Unlike the previous course with the same number, this course is now only about model theory, and assumes prior exposure to the fundamentals of mathematical logic.

It is a first course in model theory aimed at advanced undergraduate and graduate students, and it serves as a follow-up to the new PMATH 432/632 (Mathematical Logic). There is a focus on algebraic examples and on geometric stability theory. Topics will include: Definable sets, quantifier elimination, algebraically closed fields, real closed fields, omitting types and prime models, interpretation and imaginaries, types, saturation, strongly minimal sets and the Zilber trichotomy, forking and independence.

I will teach a graduate level topics course in model theory in Fall 2025 that will build on this course.

Pre-requisites. (Equivalent of) PMATH 432, or consent of instructor.

Reference Textbook. I will use David Marker's "Model Theory: An Introduction" (Graduate Texts in Mathematics 217, 2002) as a reference, but the lectures will be self-contained.

Assessment. There will be assignments roughly every two weeks worth about 25%, and a final exam worth 75%.