

**Fall 2026, MATH80510 Topics in Mathematica
Logic:**

Model theory of Valued Fields

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In this course we will study model theoretic properties of valued fields. The main goal is to cover some classical material: Ax-Kochen/Ershov principle, model theory of p -adics, algebraically closed valued fields.

If the time permits, we will also consider more advanced topics such as tropical geometry, Denef's work on the rationality of Poincaré series.

Prerequisites: Basic knowledge of model theory and algebra at the standard graduate level. Prior exposure to valuations is helpful but not required.