

Introduction to Mathematical Predicate Logic – Spring 2024

Course contacts

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Meeting times:

We meet at least 1 hour a week face-to-face, for an average of 2 hours a week during the semester. The scheduled meeting time is Wednesday at 2, with Friday at 2 as backup. The time slot may be moved in case of a conflict with other classes. The default meeting place is CU 384.

Course content

Description:

3 credit hours. We study propositional and predicate logic from the two books mentioned below. We stress the differences between syntax, semantics, and abbreviated notations. We present the completeness theorems. We assign projects most weeks. This may include removing errors.

Objectives:

Learn precise and correct reasoning about precise and correct reasoning. Develop the ability to independently investigate questions of precision about mathematical logic and its applications. This includes the ability to create relevant questions.

Material:

- The book by Dirk van Dalen *Logic and Structure*, fourth edition, Springer 2004 or later.
- The book by H.-D. Ebbinghaus, J. Flum, and W. Thomas *Mathematical Logic*, second edition, Springer 1994.

Course assessment

Homework, 25%:

We have assignments most weeks.

Three exams, including the final, 75%:

Research experience:

We ask research-level questions of precision about mathematical logic and its presentation in educational texts. The techniques we develop apply to advanced or research-level texts.