

Logic exercise class

2026 Fall

Lecturer: Zalán Molnár

Code of the course: BMA-LOTD17-101 ,BMA-FILD-302.07, BBN-FIL18-302.03

Aim of the course: This exercise class accompanies the Logic lecture. They together provide an introduction to mathematical logic. During the exercise class we solve and practice all the relevant techniques in detail covered from the lecture. Attending the exercise class on its own may not provide sufficient context, as we focus on selected concepts and problems from the lectures. The aim of the exercise class is to provide a deeper understanding of the topics covered in the lectures and to explore their underlying motivations.

Although there are no formal prerequisites, certain level of maturity of abstract thinking is expected.

Content of the course: The seminar covers various exercises from the topics:

- **Class 1-4.** Basics of Propositional logic: syntax and semantics, proof theory.
- **Class 5-13.** Basics of First-order logic: syntax and semantics, basic model and proof theory. Completeness and Compactness theorem, Löweheim-Skolem theorems. Limits of first-order logic.

Grading criteria: homework assignments

References

[1] László Csirmaz, Zalán Gyenis *Mathematical logic. Exercises and solutions*. Springer. 2022.