CCNM17-106 Logic and Logical Semantics

Aim of the course

Aim of the course: The course offers an introduction to symbolic logic and its semantics. Introduces a gentle introduction to the basic concepts and methods of both traditional and modern logic.

Learning outcome, competences

knowledge:

- theoretical development of symbolic logic

attitude:

- sensitivity to the methodological questions

skills:

- creative thinking
- comprehensive methodological knowledge

Content of the course

Topics of the course

- Propositional logic: Symbolic language and syntactical notions; Propositional calculus and derivability; Truth values and bivalence; Truth tables; Interpretation, Model and Inference
- First order logic: Predicate logic; Quantification and variables; Quantificational calculus; Interpretation and the Universe of discourse; First order models
- Metalogical properties: Semantic soundness and completeness; First order theories; Gödel's incompleteness theorems, Church's theorem and Tarski's results on truth function
- Non-classical logics: Value gaps and multivalent logics; Higher order logics; Modal logics
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Learning activities, learning methods:

Lectures and interactive discussions

Evaluation of outcomes

Learning requirements, mode of evaluation, criteria of evaluation:

requirements:

- Active presence.
- Reliable basic knowledge in the domain of symbolic logic

mode of evaluation: examination and practical course mark

criteria of evaluation:

- Knowledge on basic concepts

Reading list

Compulsory reading list

- Copi, I. M., Cohen, C., & McMahon, K. (2010). Introduction to logic (14th Ed.). Gloucester, UK: Pearson Education Limited.

Recommended reading list

- L. T. F. Gamut, Logic, Language, and Meaning. Volume I: Introduction to Logic. University of Chicago Press, 1991.