Logik

Sommer

(in German: Logik)

Module-ID: FIN-INF-110492

Abbreviation	Credit Points	Semester	Term	Duration	Language	Level
Logic	5	Sommer	starting at 2.	1 Semester	english	Bachelor

Link:	LSF
Limited accessability:	
Responsibility:	Martin Glauer
Lecturer:	Martin Glauer
Classes:	• Lecture *Logic* • Exercise *Logic*
Applicability in curriculum:	- B.Sc. INF (bilingual): Mathematik / Logik - B.Sc. INF (bilingual): Aufbaumodule (SPO 2027)

Intended learning outcomes:
Students can

- explain the terms relevant to logic and their definitions,
- read logical syntax (in particular logical formulae and arguments)
- describe situations using logical formulae,
- translate logical formulae into German and vice versa,
- recognize and produce normal forms,
- write down situations as model-theoretical structures,
- distinguish between formal representation and meaning (real world/application),
- check arguments for logical conclusions,
- construct proofs independently,

- use algorithms to evaluate and transform logical expressions and arguments.

Content:

- Fields of application for logic in computer science,
- Logical syntax (concept of formula and concept of argument for propositional logic and predicate logic),
- Formal representation of knowledge,
- Logical semantics of two- and three-valued propositional logic and predicate logic,
- Domain-specific languages and abstraction to general logical languages,
- Concept of inference and logical inference,
- Rule systems (e.g. for formulas and proofs), - Basic algorithms for logical problems (SAT solving, Horn formula algorithm, transfer to normal forms) rule systems (e.g. for formulas and proofs),
- basic algorithms for logical problems (SAT solving, Horn formula algorithm, transfer to normal forms)

Workload:
Attendance time: 14 x 4 hours = 56 hours Independent follow-up work on the lecture: 94 hours

Pre-examination requirements:	Type of examination:	Teaching method / lecture hours per week (SWS):
2/3 of the exercises voted	120 minute written exam	• Lecture (2 SWS) • Exercise (2 SWS)

Prerequisites according to examination regulations:	Recommended prerequisites:
none	

Media:	Literature:
	- J. Barwise, J. Etchemendy: Language, Proof and Logic.

Comments:

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