

ECTS Code			
Title	Computational Logic		
Instructor	L. State		
Type (Compulsory, Elective, Optional)	Compulsory		
Structure	The number of weeks		
	Lectures	2	hours/week
	Seminars	1	hours/week
	Laboratory	0	hours/week
Period (semester 1-6)	2		
ECTS Credits	6		

Content:

- Propositional Calculus: Syntax, Semantics, Rules of Inference, Formal Proofs; Deduction Theorem;
- Deductive systems; Soundness and Completeness of Propositional Logic;
- Natural Deduction System (Gentzen);
- First-Order Languages: Syntax and Semantics; Clausal Form for Predicate Calculus Formulas;
- SLD-Resolution

References:

1. State, L., *Introducere în programarea logica*, Editura Fundatiei Romania de Maine, 2004.
2. State, L. *Elemente de logica matematica și demonstrarea automata a teoremelor*; T.U.B., 1988.
3. Holldobler, S., *Computational Logic*, Technische Universität at Dresden, 2003.
4. Gallier J.H., *Logic for Computer Science*, University of Pennsylvania, 2003.
5. Ben-Ari, M., *Mathematical Logic for Computer Science*, Prentice Hall, 1993.
6. Hamilton, A.G., *Logic for mathematicians*, Cambridge University Press, 1988.
7. Hein, J. L., *Prolog Experiments in Discrete Mathematics, Logic, and Computability*, Portland State University, 2005.
8. Bramer, M., *Logic Programming with Prolog*, Springer, 2005.