Politechnika Krakowska
Wydział Informatyki
i Matematyki

Course title	Logic and Foundations of Computer Science
Institute/Division	Faculty of Computer Science and Mathematics/ Department of Mathematics
Course code	F-2.LFCS
Erasmus subject code*	11.1
Number of contact hours**	45 lecture hours (45h)
Course duration	1 semester (Spring)
ECTS credits	6
Course description (max 100 words)	Propositional logic, Boolean algebra with applications to C. Sc., deductive system of propositional logic, Gentzen calculus. Soundness and completeness theorems for classical propositional logic (optional). Non-classical propositional logics. Quantifiers. Finite automata, CF grammars, Turing machines, Computability, Church thesis. Complexity, Classes P , NP, NP-completeness. P vs. NP.
Literature	1. S. Burris, Logic for Mathematics and Computer Science, Prentice Hall, 1998. 2. M. Sipser, Introduction to the Theory of Computation, Cengage 2005. 3. J. Hopcroft, R. Motvani, J. Ullman, Introduction to Automata Theory, Languages and Computation, Pearson, 2006. 4. T. Cormen, Ch. Leierson, R. Rivest, C. Stein, Introduction to Algorithms, MIT Press and McGraw-Hill, 2009.
Course type/organization	Lecture with problem sessions
Assessment method	Homework, class participation, quizzes, tests. Final exam.
Prerequisites	Linear Algebra or Abstract Algebra
Primary target group	Computer Science and Mathematics major
Contact person	Katarzyna Pałasińska, PhD, email: kpalasinska@gmail.com
Remarks	

*please insert one of the following codes:
11.0 Mathematics, Informatics
11.1 Mathematics
11.2 Statistics
11.3 Informatics, Computer Science
11.4 Artificial Intelligence
11.5 Actuarial Science
11.9 Others Mathematics, Informatics

**1 lecture hour=45 minutes