



<b>Course title</b>	Logic and Foundations of Computer Science
<b>Institute/Division</b>	Faculty of Computer Science and Telecommunication
<b>Course code</b>	F-2.LFCS
<b>Erasmus subject code</b>	11.0
<b>Number of contact hours**</b>	45 lecture hours (45h)
<b>Course duration</b>	1 semester (Spring/Fall)
<b>ECTS credits</b>	6
<b>Course description</b> (max 100 words)	Classical propositional logic: the language of propositional logic, tautologies and logical equivalence, formal proofs, logic gates. Non-classical propositional logics. Quantifiers. Mathematical models of computation: Finite automata, CF grammars, Turing machines. Computability, Church thesis. Existence of non-computable problems. Recursive, recursively enumerable and non-recursive problems. Complexity. Classes P , NP, NP-completeness. P vs. NP.
<b>Literature</b>	1. M. Sipser, Introduction to the Theory of Computation, Cengage 2005. 2. J. Hopcroft, R. Motvani, J. Ullman, Introduction to Automata Theory, Languages and Computation, Pearson, 2006. 3. T. Cormen, Ch. Leieron, R. Rivest, C. Stein, Introduction to Algorithms, MIT Press and McGraw-Hill, 2009. 4. S. Burris, Logic for Mathematics and Computer Science, Prentice Hall, 1998.
<b>Course type/organization</b>	<ul style="list-style-type: none"><li>• Lectures,</li><li>• Problem Sessions,</li></ul>
<b>Assessment method</b>	Quizzes(20%) , test(20%) , final exam (30%), homework (15 %), class participation (15 %)
<b>Prerequisites</b>	Abstract Algebra or Linear Algebra or both Calculus and Logic or some other mathematics course requiring abstract thinking and simple proofs.
<b>Primary target group</b>	Mathematics and Computer Science majors
<b>Contact person</b>	Katarzyna Pałasińska, PhD, email: katarzyna.palasinaska@pk.edu.pl
<b>Course application deadline</b>	
<b>Remarks</b>	N/A

\*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