



## Itä-Suomen ICT-polku

### COURSE DATA

#### BASIC INFO

<b>Name</b>	Basics Models of Computation		
<b>Code</b>	Savonia: ETX7700 Karelia: LTD7009 UEF: 3621423		
<b>Name in Finnish</b>	Laskennan perusmallit		
<b>Credits (ECTS)</b>	3	<b>Grading</b>	0 - 5
<b>Teaching period</b>	2K		
<b>Language</b>	Finnish		
<b>Type</b>	Savonia: elective course Karelia: elective course UEF/TKT: mandatory course		



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### DESCRIPTION

<b>Objectives</b>	Grasp of the basics of theoretical computer science. Obtaining abilities in using techniques to generate and recognize regular languages and context-free languages. Understanding of the basics of computability and decidability, the Church-Turing thesis and their fundamental justifications and implications.
<b>Content</b>	Theoretical modeling of computational problems and their solutions, restricted to fundamental methods of describing and validating data in practical software work (that is, lexical analysis and parsing): Finite automata and regular languages, pushdown automata and context free languages.
<b>Modes of study</b>	Participation in exercises, and final (written) examination.
<b>Study materials</b>	Lecture notes. They can be supplemented with suitable books, such as: Kozen D.C.: Automata and Computability (Springer, 1997) or Hopcroft J.E., Motwani R., Ullman J.D.: Introduction to Automata Theory, Languages, and Computation, 3rd Ed. (Pearson, 2006).
<b>Teaching methods</b>	Lectures 22h, exercises 10h.
<b>Prerequisites</b>	Introduction to Computing, Data Structures and Algorithms I, Discrete Structures
<b>Other issues</b>	Course evaluation: course exam or its re-take 80%, exercises done 20%. General exams do not take exercises into account