DOCTORAL SCHOOL OF INFORMATICS
COMPLEX EXAM SUBJECT

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**Correctness and semantics of programs (main subject)**

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Denotational semantics
Operational semantics
Axiomatic semantics
Grammars as methods for defining semantics
Semantics of deterministic and nondeterministic programs
Semantics of parallel programs
Semantics of distributed programs
Concepts of program correctness
Program verification
Reliability of program verification methods
Completeness of program verification methods

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**References:**


1. H. R. Nielson, F. Nielson: Semantics with Applications, A Formal Introduction, John Wiley & Sons, 1992
2. F.G. Pagan: Formal Specification of Programming Languages: A Panoramic Primer, Prentice Hall, 1981
3. J. E. Stoy: Denotational Semantics: The Scott-Strachey Approach to Programming Language Theory, MIT Press, 1977.
4. M. von Beck: A structured operational semantics for UML-statecharts, Softw. Syst. Model pp. 130-141, 2002
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