Course
FSA - Formal Languages and Automata Theory

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⌃ General information

Long name	Formal Languages and Automata Theory
Approving CModule	FSA_BaTIN
Responsible	Prof. Dr. Hans Nissen Professor Fakultät IME
Level	Bachelor
Semester in the year	summer semester
Duration	Semester
Hours in self-study	78
ECTS	5
Professors	Prof. Dr. Hans Nissen Professor Fakultät IME
Requirements	no requirements
Language	German
Separate final exam	Yes

Final exam

Details

The written exam ensures that each student has individually achieved the goals of the Learning Outcomes,

through tasks of the following types:

Formalize and analyze systems from an abstract perspective,

formalize given formal languages,

Specify grammar for given language,

identify accepting machines for given languages,

transform a description of a formal language into another, equivalent descriptive form

prove or disprove that a language belongs to a particular language class.

Minimum standard

At least 50% of the total number of points.

Exam Type

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through tasks of the following types:

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⌃ Lecture / Exercises

Learning goals

Knowledge

formal languages and Chomsky hierarchy

formalization of grammars

formalization of abstract machine models
finite automata
pushdown automata
turing machine

regular expressions

properties of formal languages
closure
decidability
Pumping Lemma

Skills

specify chomsky level of formal languages

specification of formal languages

develop grammr for given formal language

develop automata for given grammar

develop automata fpr given grammar

transform formal specifications

formale Beweise zu formalen Sprachen, Grammatiken und Automaten durchführen

formalize real world problems

develop abstract automata for real problems

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Lecture	2
Exercises (whole course)	0
Exercises (shared course)	2
Tutorial (voluntary)	0

Separate exam