Module title	Module code
Automata, Formal Languages and Computation	

Person responsible for the module	Faculty
N. N.	Computer Science and mathematics

Semester taught according to the curriculum	Level of study	Module type	Credit value
1.	1.		5

Mandatory requirements
No prerequisites necessary
Recommended previous knowledge
Attendance of the pre- and bridge courses is recommended

Content
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Assigned submodules

Nr.	Submodule title	Teaching hours	Credit value
1.	Automata, Formal Languages and Computation	4 SWS	5

Submodule	Submodule abbreviation
Automata, Formal Languages and Computation	**ALC**

Responsible person	Faculty
N. N.	Computer Science and mathematics
Lecturer	Availablilty of module
N.N.	

Teaching method
Seminar teaching (2 SWS) with exercises (2 SWS).

Semester taughtaccording to the curriculum	Teaching hours	Teaching language	Credit value
1.	4 SWS		5

Study hours required

Hours in attendance/lectures	Hours for self-study
60h	90h

Method of assessment
written exam 90 minutes

Content
Computability - Sets in computer science - Holding problem - Reductions - Complexity Formal languages and automata theory - Alphabets, words, languages - Languages for problem description (especially: decision problems) - Deterministic and non-deterministic finite automata and their equivalence, minimisation of automata - Regular expressions and languages - Grammars and Chomsky Hierarchy (CYK)
Learning objectives: Subject competence
After successful completion of the submodule, students are able to, apply (2) and explain (2) the scientific contents dealt with in the lecture. Furthermore, they are aware of the practical implications (2), in particular the possibilities and limits of the application of computer systems (3) and they are equipped with solid formal tools to put practical approaches on a solid foundation (2).