

Module Handbook (<https://modhb.uni-kl.de/>)

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Module INF-54-82-M-7

Algorithms and Complexity (Project) (M, 8.0 LP)

Module Identification

Module Number	Module Name	CP (Effort)
INF-54-82-M-7	<i>Algorithms and Complexity (Project)</i>	8.0 CP (240 h)

Basedata

CP, Effort	8.0 CP = 240 h
Position of the semester	1 Sem. irreg.
Level	[7] Master (Advanced)
Language	[EN] English
Module Manager	Lin, Anthony, Prof. Dr. (PROF DEPT: INF) (/staff/530/)
Lecturers	Majumdar, Rupak, Prof. Dr. (PROF DEPT: INF) (/staff/499/) Schweitzer, Pascal, Prof. Dr. (PROF DEPT: INF) (/staff/333/)
Area of study	[INF-ALG] Algorithmics and Deduction
Reference course of study	[INF-88.79-SG] M.Sc. Computer Science (/mhb/FB-INF/cos-536/)
Lifecycle-State	[NORM] Active

Courses

Type/SWS	Course Number	Choice in Module-Part	SL	PL	CP	Sem.
4L	INF-54-82-K-7 (/mhb/courses/INF-54-82-K-7/)	P	PRAES	no	8.0	irreg.

- About [INF-54-82-K-7] (/mhb/courses/INF-54-82-K-7/): Title: "Algorithms and Complexity (Project)"; Presence-Time: 56 h; Self-Study: 184 h
- About [INF-54-82-K-7] (/mhb/courses/INF-54-82-K-7/): The study achievement "[PRAES] presentation" must be obtained.

Evaluation of grades

The module is not graded (only study achievements)..

Contents

From [INF-54-82-K-7] Algorithms and Complexity (Project) (/mhb/courses/INF-54-82-K-7/):

The content is changing continuously but is always taken from subjects listed for the lecture "Advanced Algorithmics", i.e. algorithms and data structures for the efficient handling of huge datasets, algorithms used for sorting and searching, graph algorithms and algorithms and data structures used to process objects encoded by words.

Competencies / intended learning achievements

Ability to design new algorithms or data structures. Application of known methods to analyze these new or known algorithms and data structures. Implementation of these methods on the basis of a computer algebra system to automate the analysis as far as possible.

Upon successful completion of the module, students will be able to

- determine basic and extended requirements for a system solution in discussions with users,
- independently define additional requirements for a system solution according to heuristic criteria
- divide agreed and self-chosen tasks into subtasks and to work on them together in a cooperative manner,
- estimate and plan the project effort in detail and to use resources in a goal-oriented way,
- document, manage and present work results comprehensively and accurately
- present a specialist lecture using suitable media to a heterogeneous specialist audience,
- lead and moderate a well-founded discussion on the chosen topic based on a technical lecture,
- assess their own scope for action and decision-making and the associated responsibility and, if necessary, obtain targeted information, define priorities, derive tasks, develop solutions and monitor progress
- recognize misunderstandings and role conflicts in communication situations at an early stage and to contribute to conflict resolution,
- argue goal-oriented in controversial discussions and to deal with criticism objectively,
- participate constructively and actively in heterogeneous working groups,
- represent independent points of view and, if necessary, points of view that differ from others in a very comprehensible way and to argue plausibly and convincingly.
- lead, instruct and motivate a working group frequently
- lead heterogeneously composed groups responsibly and to represent work results to third parties.
- develop their own professional, methodological, technological, interdisciplinary, social and personal skills independently.

Literature

From [INF-54-82-K-7] Algorithms and Complexity (Project) (/mhb/courses/INF-54-82-K-7/):

Will be announced at the beginning of the project.

Requirements for attendance of the module (informal)

None

- Notice: Some Courses have informal requirements for attendance:
 - #A: [INF-54-82-K-7] Algorithms and Complexity (Project) (4L, 8.0 LP) (P: Obligatory) (/mhb/courses/INF-54-82-K-7/#teilnahmevor-5353)

Requirements for attendance of the module (formal)

None

References to Module / Module Number [INF-54-82-M-7]

Course of Study	Section	Choice/Obligation
[INF-88.79-SG] M.Sc. Computer Science (/mhb/FB-INF/cos-536/)	[Specialisation] Specialization 1	[WP] Compulsory Elective
