Einführung in die Informatik (für BiBa)

Winter

for BiBa

(in German: Einführung in die Informatik (für BiBa))

Module-ID: FIN-INF-110486

Abbreviation	Credit Points	Semester	Term	Duration	Language	Level
IntroCS	10	Winter	starting at 1.	1 Semester	english	Bachelor

Link:	LSF
Limited accessability:	
Responsibility:	PD Dr.-Ing. habil. Christian Krätzer
Lecturer:	PD Dr.-Ing. habil. Christian Krätzer
Classes:	• Lecture *Introduction to Computer Science* • Exercise *Introduction to Computer Science* • Tutorial *Introduction to Computer Science*
Applicability in curriculum:	- B.Sc. INF (bilingual): Informatik I - Pflicht - B.Sc. INF (bilingual): Kernmodule (SPO 2027)

Intended learning outcomes:
Students

- understand basic concepts of algorithms, in particular recursion
- can implement algorithms and simple data structures in Java
- understand the fundamentals of various programming paradigms

- can formally describe properties of algorithms and data structures (e.g. correctness, complexity, ADT) and apply basic methods of proof
- apply theoretical and practical content in exercises and tutorials

Content:

- Basic algorithmic concepts
- Basic concepts in Java
- Functions
- Object-oriented programming
- Programming paradigms
- Searching and sorting
- Correctness of algorithms
- Complexity of algorithms
- Abstract data types and introduction to basic data structures
- Computability and decidability

Workload:

- 98 h attendance + 202 h independent work

Pre-examination requirements:	Type of examination:	Teaching method / lecture hours per week (SWS):
In order to take the exam, preliminary exam requirements must be met. Details will be announced in the first lecture.	Written exam 120 minutes	• Lecture (4 SWS) • Exercise (2 SWS) • Tutorial (1 SWS)

Prerequisites according to examination regulations:	Recommended prerequisites:
none	

Media:	Literature:
	Basis: • Saake & Sattler: Algorithmen und Datenstrukturen Additional material: • Goodrich, Tamassia & Goldwasser: Data Structures and Algorithms in Java

Comments:
Die Teilnahme an dieser Lehrveranstaltung ist beschränkt auf die Studierenden des FIN Studienganges “Bilingualer Bachelor Informatik” (BiBa)

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