Course Specifications

Valid as from the academic year 2019-2020

Algorithms and Datastructures 3 (C003782)

Due to Covid 19, the education and evaluation methods may vary from the information displayed in the schedules and course details. Any changes will be communicated on Ufora.

Course size (nominal values; actual values may depend on programme)

Credits	Study time	Contact hrs
6.0	180 h	60.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 1)	Dutch	Gent	lecture	30.0 h
			seminar: coached exercises	15.0 h
			seminar: practical PC room classes	15.0 h

Lecturers in academic year 2020-2021

Brinkmann, Gunnar	WE02	lecturer-in-charge

Offered in the following programmes in 2020-2021	crdts	offering
Bachelor of Science in Computer Science	6	A

Teaching languages

Dutch

Keywords

Algorithm, data structure, efficiency

Position of the course

Get acquainted with some advanced aspects of algorithms and data structures.

Contents

Data structures for file organisation (e.g. B-trees, extensible hashing)
Algorithms and data structures for exact and approximate string matching, suffix trees and Ukkonen's algorithm, Compression algorithms, Bloom-filters and possibly other datastructures and algorithms

Initial competences

Being able to apply the contents of "Algorithms and Data structures 1" and "Algorithms and Data structures 2".

Final competences

1 The student knows and understands more advanced algorithms and data structures.
2 He/she can apply the new knowledge to practical problems and use it also in a research environment.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture, seminar: coached exercises, seminar: practical PC room classes

Learning materials and price

Lecture notes available online, website

References

D. Gusfield, "Algorithms on Strings, Trees and Sequences", Cambridge University Press, 1997. B. Wilkinson en M. Allen, "Parallel Programming", Prentice Hall, 1999. H. Garcia-Molina, J.D. Ullman, J. Widom, “Database System Implementation”, Prentice Hall 2000

Course content-related study coaching

Student coaching in the classroom exercise sessions and lab sessions on PC. Use of an electronic teaching environment.

Evaluation methods

end-of-term evaluation and continuous assessment

Examination methods in case of periodic evaluation during the first examination period

Written examination with open questions

Examination methods in case of periodic evaluation during the second examination period

Written examination with open questions

Examination methods in case of permanent evaluation

Oral examination, assignment

Possibilities of retake in case of permanent evaluation

examination during the second examination period is not possible

Extra information on the examination methods

Non-periodical evaluation: graded programming project with oral defence.

Calculation of the examination mark

Non-periodical evaluation (20%) + periodical evaluation evaluation (80%).