

Management of Imperfect Data (E018221)

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

Credits 4.0 Study time 120 h Contact hrs 30.0 h

Course offerings and teaching methods in academic year 2020-2021

A (semester 2)	Dutch	group work	8.75 h
		guided self-study	8.75 h

Lecturers in academic year 2020-2021

De Tré, Guy	TW07	lecturer-in-charge
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Offered in the following programmes in 2020-2021

	crdts	offering
Master of Science in Computer Science	4	A
Master of Science in Computer Science Engineering	4	A
Master of Science in Computer Science Engineering	4	A

Teaching languages

Dutch

Keywords

imperfect information, computational intelligence, flexible querying

Position of the course

With the advent of 'Big Data', adequately managing and handling imperfect data becomes more and more important. Examples of data imperfections are imprecision, vagueness, incompleteness, uncertainty and inconsistency. The main objective of this course is to study and learn to apply the principal concepts and techniques for the management of imperfect data. Herewith we will use database technology on the one hand and fuzzy set theory on the other hand. We learn how imperfect data can be adequately modelled and managed with a database system and how the same techniques can be applied in software development.

Contents

- Introduction: Data modelling, Preliminaries on fuzzy set theory
- Computational intelligence: Data modelling, Database modelling
- The use of databases: Flexible querying of regular databases, Flexible querying of fuzzy databases
- Decision Support Systems

Initial competences

Basic principles of databases and data structures

Final competences

- 1 Understand and apply basic concepts of fuzzy set theory and possibility theory.
- 2 Gain insight in the modelling of satisfaction and uncertainty.
- 3 Model, manipulate and manage imperfect information.
- 4 Understand and apply diverse aggregation techniques.
- 5 Apply techniques for flexible querying and decision support on regular and 'fuzzy' databases.

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

Guided self-study, group work

Extra information on the teaching methods

During the contact moments a 'flipped classroom' principle is applied. Herewith, the students have to prepare a part of the course independently, using processing questions.

Learning materials and price

Syllabus (Nederlandstalig); is available via Ufora.

References

Course content-related study coaching

The teamwork is supported by assistants.

Evaluation methods

end-of-term evaluation and continuous assessment

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

Oral examination, report

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

Examination methods in case of permanent evaluation

Skills test

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible

Extra information on the examination methods

Periodic evaluation: oral exam, individual explanation of teamwork

Non-periodic evaluation: graded teamwork

Frequency of teamwork: 4 tasks (spread over the semester; after the corresponding part of the subject material has been studied)

Calculation of the examination mark

Weighted average of the scores for the 4 tasks, revised after oral explanation.