

Course Specifications

Valid as from the academic year 2019-2020

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

Credits	6.0	Study time	180 h	Contact hrs	60.0 h
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Course offerings and teaching methods in academic year 2020-2021

A (semester 1)	Dutch	project	20.0 h
		lecture	20.0 h
		seminar	20.0 h

Lecturers in academic year 2020-2021

Van Hoecke, Sofie	TW06	lecturer-in-charge
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Offered in the following programmes in 2020-2021

	crdts	offering
Master of Science in Electronics and ICT Engineering Technology (main subject Embedded Systems)	6	A

Teaching languages

Dutch

Keywords

data mining, data analysis, clustering, classification, regression

Position of the course

The goal of this course is to give students an in-depth knowledge and hands-on experience in datamining. In order to do so, an overview is given of the principles, techniques and best-practices in data mining. The course covers both clustering, classification and regression methods, and the student applies these techniques on real-life data sets. The data extraction techniques to retrieve these data sets, as well as data cleaning techniques, are also covered. Within the course, guest lecturers will present their datamining research.

Contents

- Introduction
- Data extraction
- Clustering
- Classification
- Regression
- Ensemble techniques
- Deep learning
- Guest lectures on capita selecta

Initial competences

Informatics, software development, mathematics, statistics

Final competences

- 1 Understands advanced data mining methods
- 2 Understands the functioning of and choice between supervised and unsupervised systems
- 3 Is able to choose and to use, for a given data mining problem, the most appropriate method to achieve the defined goals
- 4 A comprehensive knowledge of Python and being able to use this knowledge in real data mining projects
- 5 The construction of datasets by scraping websites and/or querying APIs

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, project, seminar

Learning materials and price

Slides on the electronic learning environment

References

Course content-related study coaching

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

Participation, assignment

Possibilities of retake in case of permanent evaluation

examination during the second examination period is possible in modified form

Extra information on the examination methods

Exam is closed book, written exam, open questions

Permanent evaluation: graded on participation, assignments/project and project presentation. The evaluation of the according deliverables is based on the accuracy, completeness, efficiency and critical attitude of the source code and the reports submitted for the assignments and the project.

Calculation of the examination mark

PGE 50% + NPGE 50%

In order to pass the course, the student must obtain at least 8/20 for the PE and the NPE (both projects and assignments). If this condition is not met, the final score will deviate from the calculated score if 10 or more was obtained and the student will receive score 9/20.