GHENT UNIVERSITY

Course Specifications

Valid in the academic year 2023-2024

Design Project (E033710)

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

Credits 9.0 **Study time 270 h**

Course offerings in academic year 2023-2024

A (Year)	English	Gent
B (Year)	Dutch	Gent

Lecturers in academic year 2023-2024

De Backere, Femke	TW05	lecturer-in-charge
De Turck, Filip	TW05	co-lecturer
Gielen, Frank	TW05	co-lecturer
Stroobandt, Dirk	TW06	co-lecturer

Offered in the following programmes in 2023-2024	**crdts**	**offering**
Bridging Programme Master of Science in Computer Science Engineering	9	A
Master of Science in Computer Science Engineering	9	B
Master of Science in Computer Science Engineering	9	A

Teaching languages

English, Dutch

Keywords

Software design and hardware design, technopreneurial, project-driven en customer-aware design

Position of the course

This course focuses on the actual application of design principles in a team of students. These design principles are taught in the compulsory courses and in the optional courses. More specifically, this entails that the students work together on a project in the form of a challenge that they must successfully complete by the end of the academic year. This project is carried out by the entire group in mutual division of tasks, both on a technical level and in terms of project leadership. Everyone will have to fulfill their role in order to jointly realize the project. Students go through different phases of the software development process, ranging from idea generation to realization of a proof of concept, which meets the proposed challenge. Our challenges are usually linked to external companies and organisations, or they are generated based on a societal challenges or originate from a research idea.
The main goal is to emulate a realistic company environment for the execution of the project. This course enables the students to propose design assignments, defend the proposals, and execute them with in heterogeneous teams (with different backgrounds and interests) in accordance to the chosen courses in their respective curricula. The project realization takes place by the whole team, with a dedicated task assignment, both technical tasks and project management tasks. Execution of the project is composed of: project management, analysis of the requirements, architecture design, detailed design and implementation, evaluation and validation, documentation and prototype design. The projects are also proposed to an (external) expert panel. Project groups vary in size between 6 and 10 students, dependent on the projects' requirements. The project management and the development of entrepreneurial skills, such as customer aware design, are an important part of the project.

Contents

- Project management and project methodology (incl. dedicated tools).
- Analysis of the requirements.
- Architecture design (software and/or hardware).

- Detailed design and implementation.
- Prototype design and evaluation.
- Documentation.
- Product finalization and cost budget/risk-analysis of the final project results.

Initial competences

Core courses from the Computer Science program
It is advisable that the student has finshed the cross-course project from the third bachelor year and does not do that project at the same time as the design project.

Final competences

1 Be able to transfer theoretical knowledge from other course to practical applications.
2 Be able to realize a prototype given a stringent time frame and limited means which meets the predefined quality criteria.
3 Be able to efficiently prepare, organize and lead project reviews.
4 Be able to make a planning for a large development team and identify the dependencies.
5 Be able to implement the configuration management of complex projects.
6 Be able to identify the risks of a project and design a mitigation plan.
7 Be able to document a project in a professional way.
8 Be able to present project results during a final pitch.

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

Group work, Seminar, Independent work

Extra information on the teaching methods

Students work in groups throughout the year on their project under supervision. The information about the workshops and the project is provided through the learning path in Ufora. Students present their progress during review meetings throughout the year.

Learning materials and price

Learning material is made available through Ufora, whereby students are provided with the necessary information in the learning path by means of videos, articles, ... at the right time during the course.

References

Course content-related study coaching

Interactive support via the electronic learning platform (forums, e-mail), personal (electronic appointments, dedicated and predefined feedback moments, coaching sessions and review sessions), organized workshops with participation from teaching assistants and teachers.

Assessment moments

continuous assessment

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

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

Examination methods in case of permanent assessment

Oral assessment, Participation, Presentation, Peer and/or self assessment, Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible in modified form

Extra information on the examination methods

Assessment of the project reports, oral presentations. Frequency: weekly. To be allowed for the second exam period, a minimum participation in the project is strictly required.

Calculation of the examination mark

Permanent evaluation.