Course Specifications
Valid as from the academic year 2019-2020

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

<table>
<thead>
<tr>
<th>Credits</th>
<th>Study time</th>
<th>Contact hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.0</td>
<td>270 h</td>
<td>30.0 h</td>
</tr>
</tbody>
</table>

Course offerings and teaching methods in academic year 2019-2020

<table>
<thead>
<tr>
<th>A (year)</th>
<th>English</th>
<th>project</th>
<th>30.0 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>B (year)</td>
<td>Dutch</td>
<td>project</td>
<td>30.0 h</td>
</tr>
</tbody>
</table>

Lecturers in academic year 2019-2020

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

Offered in the following programmes in 2019-2020

<table>
<thead>
<tr>
<th>Programmes</th>
<th>Credits</th>
<th>Offering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridging Programme Master of Science in Computer Science Engineering</td>
<td>9</td>
<td>B</td>
</tr>
<tr>
<td>Bridging Programme Master of Science in Computer Science Engineering</td>
<td>9</td>
<td>A</td>
</tr>
<tr>
<td>Master of Science in Computer Science Engineering</td>
<td>9</td>
<td>B</td>
</tr>
<tr>
<td>Master of Science in Computer Science Engineering</td>
<td>9</td>
<td>A</td>
</tr>
</tbody>
</table>

Teaching languages

- Dutch
- English

Keywords

- Software design and hardware design
- Technopreneurial
- Project-driven
- 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. 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

(Approved)
Core courses from the Computer Science program
It is advisable that the student has finished 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 courses 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
Project

Extra information on the teaching methods
Guided project work, Autonomous project work, review meetings

Learning materials and price

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.

Evaluation methods
Continuous assessment

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

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

Examination methods in case of permanent evaluation
Oral examination, participation, skills test, peer assessment, report

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
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.