Course Specifications

Valid as from the academic year 2020-2021

Mechatronic Design (E640107)

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	Kortrijk	lecture	10.0 h
			integration seminar	25.0 h
			group work	25.0 h

Lecturers in academic year 2020-2021

wyffels, Francis	TW06	lecturer-in-charge
Verstockt, Steven	TW06	co-lecturer

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

Embedded prototyping, sensor, actuator, prototype, embedded elektronics

Position of the course

This course is a cooperation with the industrial design education. The student works in a team on the design of a prototype and realizes the intelligence of the product. This can be a hardware and/or software design. Within the course, students learn how they can make creative use of sensors, actuators and microprocessors to design interactive products.

Contents

This course is a cooperation with the devision "Industrial science" with the course "Mechatronic Design". Implementing electronics in new products, designed by the students of industrial science, is the mean focus for this course. Electronics for embedded systems is the integration of both software and hardware with the purpose to improve the intelligence of the product/application. Depending of the experience of the students they can choose to work on a software or hardware part or both of the design.

Initial competences

Competences described in the courses:

- Embedded Systems
- Computer architecture

Final competences

1. Can think conceptual, analytical and problem solving targeted at different levels of abstraction.
2. Can solve complex problems in an effective way.
3. Can work together in a multidisciplinary team.
4. Can use the competences from digital electronics and informatics fto create a realistic design.
5. To learn, assimilate, implement and use new technologies and / or theories that are relevant to the research and this in a creative and original way.
6. Being able to compare and select different computational units.

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, lecture, integration seminar, online demonstration, online group work

Extra information on the teaching methods

- Theory: lectures
- Project : group work

Learning materials and price

- powerpoint
- extra documentation on the electronic learning platform

References

Course content-related study coaching

Students can get extra explanation:
- during the lab sessions
- individual, after appointment
- during the organized explanation sessions

Evaluation methods

end-of-term evaluation

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

Oral examination, assignment, peer assessment, report

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

Oral examination, assignment, peer assessment, report

Examination methods in case of permanent evaluation

Possibilities of retake in case of permanent evaluation

not applicable

Extra information on the examination methods

- First examination period:
  - PE1 - Report + presentation with oral discussion
    - Second examination period
- PE2 - Rework of a part of the design: Report + presentation with oral discussion

Calculation of the examination mark

100% : report + demonstration + presentation with oral discussion
If exam in the second examination period, then 80% of the result is transfered.