Engineering Experience 4 - Electronics Engineering (B-KUL-T2EE4A)

3 ECTS 🗨 Dutch ⏱ ◗ Second term 🚫 **Cannot be taken as part of an examination contract**

👤 **Van Aken Jeroen** (coordinator) | **N.**

OC Elektronica-ICT - Campus Groep T Leuven

Aims

Learning outcomes:

- I1: Problem analysis and solving
- I2: Design and / or development
- G1: Information gathering and processing
- G2: Communication with engineers and non-engineers
- G3: Critical thinking
- G4: Working in a team in different roles

Explanation:

Students have to learn to put their theoretical knowledge into a practical project. In this semester we learn how to design and make a printed circuit board and how to interpret some datasheets. The student will design an electronic game, learn how to program a microprocessor, do signal conditioning of sensors and design power stages for motors and light sources. The students will discuss their design in a technical report with the help of the necessary measurement results. You also have to be able to port your experiences to other team members. In the end the student will be able to use these skills and present his gained knowledge to others.

At the end of this course, the student is able to:

- take design decisions and motivate them with the guidance of a coach [I2]
- analyse a project assignment, split it into smaller subtasks, and create a task distribution [I1];
- search for, compare and absorb the necessary information [G1, G3];
- function autonomously as a team for a project [G4];
- communicate the results with a report and a presentation [G2];
- defend the results in front of a jury [G2].

Previous knowledge

You should have a basic knowledge of electricity, information technology and project work

- Electricity : voltage, current, resistance, power, simple electric schematics
- Electronics : diodes, transistors, basic electronic circuits
- Project Work : PoA, planning, meeting skills

Order of Enrolment

You can only take this course if you have to acquire no more than 132 credits to obtain your degree.

Mixed prerequisite:
You may only take this course if you comply with the prerequisites. Prerequisites can be strict or flexible, or can imply simultaneity. A degree level can be also be a prerequisite.
Explanation:
STRICT: You may only take this course if you have passed or applied tolerance for the courses for which this condition is set.
FLEXIBLE: You may only take this course if you have previously taken the courses for which this condition is set.
SIMULTANEOUS: You may only take this course if you also take the courses for which this condition is set (or have taken them previously).
DEGREE: You may only take this course if you have obtained this degree level.

(STRICT(T1ESC0) OR STRICT(T1ESCE)) AND (SIMULTANEOUS(T2COM0) OR SIMULTANEOUS(T2COME))

The codes of the course units mentioned above correspond to the following course descriptions:
T1ESC0 : Elektronische schakelingen
T1ESCE : Electronic Circuits
T2COM0 : Communicatie II: wetenschappelijk schrijven / intercultural communication
T2COME : Communication II: Scientific Writing / Intercultural Communication

This course unit is a prerequisite for taking the following course units:
T34EE5 : Engineering Experience 5 - Electronics Engineering

T46WEB : Web Apps (No longer offered this academic year)
T44UBC : Ubiquitous Computing Systems (No longer offered this academic year)
T44DCM : Draadloze communicatie (No longer offered this academic year)
T44UBE : Ubiquitous Computing Systems
T44UBQ : Ubiquitous computing systems
T47UXW : R&D Experience

Is included in these courses of study

Bachelor in de industriële wetenschappen (programma voor studenten gestart vóór 2020-2021) (Leuven) (Afstudeerrichting elektronica-ICT) 180 ects. 2

Bachelor of Engineering Technology (Programme for students started before 2020-2021) (Leuven) (Specialisation: Electronics Engineering) 180 ects. 2

Bachelor of Engineering Technology, 2+2 Module (Programme for students started before 2021-2022) (Leuven) (Specialisation: Electronics Engineering) 180 ects. 2

Activities

3 ects. EE4 - LED's Game (B-KUL-2IE4EA)

3 ECTS   Dutch   Format: Assignment   Second term

 N.

OC Elektronica-ICT - Campus Groep T Leuven

Content

Engineering Experience 4 handles this time about 'Make Stuff Work'. It is the intention to design and build an circuit in an international team under the supervision of a project coach to steer an electronic game. Signals that come from sound or movement can have an impact on the course of the game. So many of these signals will have to be processed trough a series of discrete components that are placed on a by you designed PCB. Working in team is again an important aspect of this project. Tasks have to be split up and divided amongst the team members. Translating your expertise from some part of the project to team members working on other thing can not be underestimated. When making a product, one has to investigate what to do with it… This means, how can the product be sold, or in what segment of the market will people be interested to buy your product. These are also things that need to be taken care of.

Course material

Students consult information sources on Toledo and mainly the internet to execute their projects.

Evaluation

Evaluation: Engineering Experience 4 - Electronics Engineering (B-KUL-T70277)

Type : Continuous assessment without exam during the examination period

Description of evaluation : Project/Product, Report, Presentation, Self assessment/Peer assessment, Participation during contact hours

Type of questions : Open questions

Explanation

1. Calculation of the final mark
This course contains only one published component mark. Consequently, this component mark is the final mark.

2. Calculation of the published component marks
The component mark is based on three evaluation components:

- evaluations of the course staff concerning the student's project contribution, technical progress, management skills, reporting, respecting deadlines, quality of project results, etc.
- evaluations of a jury during a project defense with presentation and demonstration of the final projectresults.
- results from the peer assessments of the students of the project teams.

Also notice that:

- Each student gets an individuale grade (no group result).
- All project deliverables have to be available on Toledo for the course staff before grades will be assigned to all members of the project team.

3. Absences
For absences during the teaching weeks, please contact the education ombuds on the first day of your absence. If you missed one or more obligatory sessions, please contact your professor as soon as possible and certainly within a week. For absences within the exam period, please contact the exam ombuds on the first day of your absence.

4. Partial transfers and re-examinations

There is no second examination opportunity for EE4: Building a Light Show (21E4EA).

Component marks of at least 10/20 published in the academic progress file are transferred to the next examination period within the same academic year and to the following academic years, except for temporary marks and marks for intermittent tests.

When needed, additional information on the evaluation activities is provided during the lessons and/or made available on the Toledo pages of the course. Further if the university decides that it is confronted with situations of general force majeure or situations where the safety and health of members of the academic community of KU Leuven may be endangered and changes to the teaching and evaluation activities occur as a result, these changes will be communicated via Toledo

Information about retaking exams

No 2nd examination opportunity.

① Required in stage	① Optional in stage	◖ First term	◗ Second term	○ Both terms
⠴ This year	⠴ Next year	⠴ Alternating years	⚲ External	📑 Prerequisites
👤 Taught by	🗨 Language of instruction	⏱ Duration		

KU LEUVEN

2016 © KU Leuven

Follow KU Leuven on