lfsab1509

2019

Project 4 (in Computer Science)

In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.

4 credits	22.5 h + 22.5 h	Q2

Teacher(s)	Deville Yves ;Lainez Marc (compensates Deville Yves) ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	For example, depending of the precis topic of the project: • mobile computing, • programming using a object-oriented language, • networking and communication, • graphic interface, • event-driven programming, • client-server
Aims	**Contribution of the course to the program objectives** Regarding the learning outcomes of the program of Bachelor in Engineering, this course contributes to the development and the acquisition of the following learning outcomes: ' LO 1.1, 1.2 ' LO 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 ' LO 3.1, 3.2 ' LO 4.1, 4.2, 4.3, 4.4, 4.5 Given the learning outcomes of the "Bachelor in Engineering" program, this course contributes to the development, acquisition and evaluation of the following learning outcomes: ' S1.I5 ' S2.1-4 ' S4.1-3 ' S5.1-6 ' S6.1, S6.3 **Specific learning outcomes of the course** The skills addressed by « Project 4 » include on one hand transverse skills, common to all projects 4, and on the other hand disciplinary, technical skills that are specific to each engineering specialty. Transversal learning outcomes: Projects 4 aim at providing students with transversal skills close to the practice of engineering jobs within a multi-disciplinary context : ' analyse and improve existing systems ; ' analyse experimental data with a critical mind ; ' make the distinction between reality and models used to describe or modify it ; ' deal with the notion of uncertainty in the project approach, its conception and the obtained results. The project will allow for a trial-and-error approach, typically adopted by young engineers at the beginning of their careers. Disciplinary learning outcomes: At the end of the course, students will be able to ' apply simultaneously and consistently the knowledge and skills acquired in different areas of computer science: mobile computing, java programming, networking and communication, graphic interface, event-driven programming, client-server. Some of these skills will be acquired through this project. ' identify and perform the various stages of software design. ' manage the planning of an IT project ' understand the architecture of a software in ordre to make informed choices to change or improve it; ' think critically about the project and its deliverables, in particular the relevance of the software, the analysis and design of the system, but also the management of the planning within the group. ' show off the software developed by the group through a demonstration and its distribution as an open source product.

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The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".

Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Students will be evaluated both orally in group and individually through a written examination (organised simultaneously for all Projects 4) on the basis of the above mentioned objectives. An evaluation grid is provided at the beginning of the course. Students present and defend their project in front of a jury composed of all teachers, completed by other tutors having contributed to the project supervision. The individual examination will account for 25% of the final grade and the group examination for 75%. In the case of a failed indivudual examination, it's weight in the final grade increases. The evaluation will focus on the software developed, its documentation, a project report and the oral presentation of the project including a demonstration of the software.
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** • The project will be done by groups of students (4-5 students per group) • Students will be encouraged to communicate in English on a technical theme, orally and/or in writing.
Content	• The software to be designed will be linked to mobile computing. It will be an app on an Android Smartphone or tablet. • The project topic will be open. Each group will develop its own project and propose several ideas, a high level planning and intermediate steps. • An Agile approach (iterative and incremental development) will be proposed and enforced through regular meetings with your teacher acting as your customer. • An open source approach will be suggested, allowing a wide distribution of the software.
Inline resources	http://icampus.uclouvain.be/claroline/course/index.php?cid=lfsab1509 https://firebase.google.com/ https://education.github.com/pack
Bibliography	https://pragprog.com/book/jtrap/the-agile-samurai
Other infos	This course is part of the set of courses « Project 4 » of the programme of bachelor in engineering. Projects 4 share common transversal objectives, but exist under different versions oriented towards specific disciplinary objectives, corresponding to the majors/minors of the programme. Each student chooses either the project related to his/her major or to his/her minor (if available). Students should have acquired competences in the matters covered by the following courses: LSINF1252 computer systems, LSINF1225 design and implementation of a small-scale application, LSINF1121 algorithmics and data structures, LINGI1341 computer networks
Faculty or entity in charge	INFO

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Aims
Master [60] in Computer Science	SINF2M1	4		🔍