Project 4 (in informatics)

lepl1509

2023

5.00 credits	30.0 h + 22.5 h	Q2

Teacher(s)	Deville Yves ;Lainez Marc (compensates Deville Yves) ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	This project supposes acquired the notions of algorithmic, programmation as developed in the courses **LEPL1401, LINFO1101** and **LEPL1402** *The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.*
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

Learning outcomes	**At the end of this learning unit, the student is able to :**
	
	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.

	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	The final grade will depend on - the grade obtained for the project, including the achievements and realization, the written document produced, the oral presentations and interactions, work organization and the reflexion on this organization, and the mastery of the topics and concepts related to the project. This part of the grade can be individualized depending the student implication in his/her group during the semester (compulsory assistance, participation to activities, intermediate works, and graded production). The activities related to this part of the grade cannot be re-taken in second session. - the grade obtained for an individual written test taking place outside of the exam period. The weight of the grade for the written test will be 25% if the grade is 10 or more, and 100% if the grade is 6 or less. For grade between 6 and 10, it will depend linearly on the grade according to : weight = 1 - 0.75*(grade - 6)/4 The second session will consist in an individual exam, that may require preparing individual works beforehand.
Teaching methods	• The project will be done by group 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 defined and designed will be linked to mobile computing. It will be implemented on a Smartphone or an Android type tablet. • The project will be opened. Each group will develop its own project and propose a schedule as well as intermediate steps. • An Agile approach (iterative and incremental development) will be implemented.
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 options of the programme. Each student chooses the project related to one of his/her options. The use of generative AI is authorized during this project, either for the redaction of the report or for the code of the application itself. However, in that case, an annex to the report will need to explain exactly how and why the AI was used, and for which part of the report and the code.
Faculty or entity in charge	INFO

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Bachelor in Engineering	FSA1BA	5		🔍
Bachelor in Computer Science	SINF1BA	5	LEPL1402	🔍
Minor in Statistics, Actuarial Sciences and Data Sciences	MINSTAT	5		🔍

	FSA1BA			🔍