linfo1002

2019

UCLouvain

Projets en informatique 2

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.

5 credits	30.0 h + 30.0 h	Q2

Teacher(s)	Bonaventure Olivier ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	This teaching unit revolves around programming projects. The objectives are: • to apply the concepts seen in parallel in LINFO1101 Introduction to Programming; • to model simple situations using computer systems; • to explore various applications of computing, including the use of information from sensors; • to confront professional constraints: group work, respect of deadlines, sense of responsibility; • to acquire transversal skills in taking notes, writing reports, oral presentation.
Aims	Given the learning outcomes of the "Bachelor in Computer science" program, this course contributes to the development, acquisition and evaluation of the following learning outcomes: • S1.I2 • S2.1, S2.2, S2.4 • S4.1, S4.2, S4.3 • S5.2, S5.3, S5.4, S5.5, S5.6 Students who have successfully completed this course will be able to: • analyze a concrete situation-problem requiring the development of a computer application and perceive the role that this application will have to play; • design the computer application corresponding to identified needs by making use of object-oriented programming and justify the design choices; • Implement a computer application that makes good use of Python language elements • realize an application of reduced scale, but correct, modular, readable, and well documented; • implement unit tests to validate the accuracy of a program • use a programming environment with integrated programming tools such as an intelligent editor, compiler, debugger, and tools for handling files, tests, documentation. Students will have developed methodological and operational skills. In particular, they will have developed their ability to: • contribute to group functioning within the framework of project-type cooperative active learning devices, explain the issues (advantages and disadvantages) of group work and provide some operational guidelines to promote effective group work; • conduct a development process for a computer application • understand a situation-problem described via written documents, an oral presentation and extract what makes it the essence and reformulate it to define the expected result; • establish the specifications and a roadmap for the project; • break down the initial problem into sub-problems that can be easily solved using a computer tool; • schematize the architecture of the application to give a description of high level allowing any computer scientist to quickly perceive the structure; • document the application so that it can easily be adapted later by another computer scientist; • design and perform tests to validate the developed application; • collaborate effectively on application development; • communicate effectively: • write a technical document describing the application developed, the recipients of this document being computer scientists who have not participated in its development but who must adapt it; • write a coherent and structured project report to convince of the success of the project; Present with a multimedia support the solution developed so as to convince him of the success of the project. - - - -

	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.** • Evaluation of the group work of the first project on the basis of the rendered project, its documentation (40%) • Continuous evaluation of the student's individual work and contributions to the peer review of the first project (10%) • Evaluation of the group work of the second project on the basis of the rendered project, its documentation (40%) • Continuous evaluation of the student's individual work and contributions to the peer review of the second project (10%) The weighting may be modified in the event of the student's actual non-participation in the group's work as well as in the event of insufficient or very insufficient individual marks. Students who fail in June will be able to do an individual project again during the summer. This project will account for 66% of the points, the remaining 34% will be obtained in June.
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Project learning in groups of x
Content	The course assumes a basic knowledge of the programming language python as seen in LINFO1101. Students work in groups to solve more complex problems than those covered in the programming course. The emphasis is on written communication. Two different projects are organized during the semester. During the first project, students should be able to : • work effectively in groups • write correct programs • write tests that validate the proper functioning of their programs • document their programs and associated tests • provide a critical look at the work of other student groups to help them improve (constructive peer review) • evaluate the performance of their programs During the second project, students must be able to : • work effectively in groups • find libraries and python modules that solve similar problems • compare the features and performance of different solutions to the same problem • document and analyze these differences in functionality and performance
Faculty or entity in charge	INFO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in Computer Science	SINF1BA	5		🔍

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in Computer Science	SINF1BA	5		🔍