UCLouvain

lepl1510

2018

5 credits	30.0 h + 30.0 h	Q2

This learning unit is not being organized during this academic year.

Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	This project supposes acquired the notions developed in the courses LGCIV1022 and LGCIV1031. *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	• Lab tests on timber and steel ; • Structural design ; • Timber connections design and calculation; • Execution plans ; • Construction (by the students) of a real structure ; • Loading of the structure ; • Oral presentations and final report. Examples of past projects : • Design, calculation, execution and testing of a 3D structure able to suspend a load of 10 students (see: 6 minutes film on : http://podcast.uclouvain.be/ciQk8VjSmW); • Design, calculation, execution and testing of a 6 m span deployable footbridge able to stand the self-weight of 12 students
Aims	1 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:LO1, LO2-3, LO4, LO5, LO6 The project also allows the acquisition of large competences in the field of civil engineering, through several interactions with the lab's technical staff *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'.* - - - - *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	Activities will be organized as followed : • A few theoretical courses ; • Project learning (groups of 3 to 4 students) ; • Work in the laboratory with the technicians, professors and assistants.
Teaching methods	• Projet presentation - Formation of the groups (3 to 4 students) ; • Course over « mechanical properties of materials » • Presentation of the testing machines (lab) ; • Lab tests : timber and steel cables ; • Statistical analysis of the test results ; • Presentation of design software : ISSD and SCIA ; • Exercises with software SCIA ; • Pre-design of the structure ; • Course over timber connections ; • Calculation of the structure by the students ; • Presentations of the structures (each group) ; • Building of the structure ; • Mounting, tests and loading of the structure.
Content	• Projet presentation - Formation of the groups (3 to 4 students) ; • Course over « mechanical properties of materials » • Presentation of the testing machines (lab) ; • Lab tests : timber and steel cables ; • Statistical analysis of the test results ; • Presentation of design software : ISSD and SCIA ;

	• Exercises with software SCIA ; • Pre-design of the structure ; • Course over timber connections ; • Calculation of the structure by the students ; • Presentations of the structures (each group) ; • Building of the structure ; • Mounting, tests and loading of the structure.
Bibliography	Documents disponibles sur iCampus : 'Calculer une structure 'De la théorie à l'exemple', P. Latteur « Introduction à l'analyse des structures », M.A. Studer et F. Frey Autres documents et transparents relatifs au calcul des structures en bois et assemblages en acier.
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.
Faculty or entity in charge	EPL

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in Engineering	FSA1BA	5	LGCIV1031 AND LGCIV1022	🔍