

4.0 credits	22.5 h + 22.5 h	2q
-------------	-----------------	----

Teacher(s) :	Lateur Pierre ; Soares Frazao Sandra ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	<ul style="list-style-type: none"> <li>-- Bibliographic study and understanding of the problem as posed ; setting up specifications</li> <li>-- Development of a methodology appropriately addressing the posed problem</li> <li>-- Development of a model (analytic, numerical, physical, etc.)</li> <li>-- Running simulations and performance evaluation</li> <li>-- Writing up a final report and verbal presentation</li> </ul> <p>Examples of applications (the accent will be rotated through the years between hydraulics, soil mechanics and structures to sustain projects interest):</p> <ul style="list-style-type: none"> <li>-- Port facilities development</li> <li>-- Structural rehabilitation</li> <li>-- Seismic risk</li> <li>-- Onshore or offshore windmill'</li> </ul>
Aims :	<p>The skills addressed by « projects 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.</p> <p>Transverse skills :</p> <p>Projects 4 aim at having students acquire transverse skills close to the engineering professional practice within a diverse disciplinary environment :</p> <ul style="list-style-type: none"> <li>-- Analyze an existing system and perfect it ;</li> <li>-- Analyze and critique experimental data ;</li> <li>-- Place models in perspective with the reality that they aim to reproduce and simulate ;</li> <li>-- Grasp the notion of uncertainty within the management of a project, its implementation, and its outcome.</li> </ul> <p>The project will allow for a trial-and-error approach, typically adopted by young engineers at the beginning of their careers.</p> <p>Technical disciplinary skills :</p> <ul style="list-style-type: none"> <li>-- Understand (as a group of students) a civil and environmental engineering problem, assess project objectives as identified by man facing natural variability within socio-economic constraints</li> <li>-- Mobilize within a pluridisciplinary context the skills acquired through the civil and environmental curriculum (e.g. in hydraulics, soil mechanics, or structures) to devise a model simulating the analyzed observations</li> <li>-- Acquire and apply additional and advanced skills pertaining to civil and environmental engineering (review of scientific literature and textbooks, consulting contractors and design offices, etc.)</li> <li>-- Implement a creative process aiming at testing the performance of considered modifications via the simulation of hypothetical scenarios</li> <li>-- Communicate technical issues, verbally and/or in writing, in English</li> </ul> <p><i>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".</i></p>
Evaluation methods :	The students present and defend their project in front of a jury consisting of the appointed professors and supplemented by the tutors having supervised the project.
Content :	<ul style="list-style-type: none"> <li>Bibliographic study and understanding of the problem as posed ; setting up specifications</li> <li>Development of a methodology appropriately addressing the posed problem</li> <li>Development of a model (analytic, numerical, physical, etc.)</li> <li>Running simulations and performance evaluation</li> <li>Writing up a final report and verbal presentation</li> </ul> <p>Examples of applications (the accent will be rotated through the years between hydraulics, soil mechanics and structures to sustain projects interest):</p> <ul style="list-style-type: none"> <li>' Port facilities development</li> <li>' Structural rehabilitation</li> <li>' Seismic risk</li> <li>' Onshore or offshore windmill'</li> </ul>
Other infos :	This course belongs to the set of courses « Project 4 » of the baccalaureate curriculum for civil engineers. Projects 4 share common transverse objectives but are offered under different versions to address disciplinary objectives specific to each major/minor branch of the programme. Each student chooses either the project offered by its Major, or that offered by its Minor, if elected.

Cycle and year of study :	<a href="#">&gt; Bachelor in Engineering</a>
Faculty or entity in charge:	GC