

5.0 credits	45.0 h + 15.0 h	1q
-------------	-----------------	----

Teacher(s) :	Vanden Berghe Jean-François ; Holeyman Alain ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	<p>Provide engineering students basic notions concerning seismic and vibration problems connected with soils.</p> <p>Knowledge:</p> <ul style="list-style-type: none"> <li>- Vibration phenomena due to earthquakes and man-made sources</li> <li>- Soil behavior under cyclic and dynamic loading</li> </ul> <p>Know-how:</p> <ul style="list-style-type: none"> <li>- Integrate basic engineering disciplines (soil mechanics, constitutive modeling, dynamics) to analyze seismic impact on soil and structures</li> <li>- Assess feasibility and select best available design to limit impact of earthquake on civil engineering structures and to remediate vibration issues</li> </ul>
Aims :	<p>Give to the students the main aspects of the dynamic behaviour of soils</p> <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>
Content :	<ul style="list-style-type: none"> <li>- Natural and man-made sources of cyclic and dynamic loading: earthquakes, pile impact and vibratory driving, traffic, vibrating and impact machines</li> <li>- Soil behavior under cyclic and dynamic loading: pore pressure generation, soil degradation, soil liquefaction, laboratory and in-situ testing</li> <li>- Dynamic behavior of foundations: spread footings, piles, low-strain and high-strain dynamic tests</li> <li>- Seismic stability of civil engineering structures: soil-structure interaction, response and design spectra, foundations, slope stability, retaining walls</li> <li>- Vibration criteria and mitigation</li> </ul> <p>Lectures are delivered in auditoria; specific topics can be developed by individual students</p>
Other infos :	Prerequisite :AUCE 1175, Dynamics
Cycle and year of study :	<a href="#">&gt; Master [120] in Civil Engineering</a>
Faculty or entity in charge:	GC