

4 credits

22.5 h + 22.5 h

Q1

Teacher(s)	Agnan Yannick ;Delmelle Pierre (coordinator) ;Hardy Briec (compensates Delmelle Pierre) ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	<ul style="list-style-type: none"> - Soils as bio-physico-chemical reactors at the interface between the lithosphere, biosphere, hydrosphere, and atmosphere - Pedological processes governing soil formation and functioning - Physico-chemical reactions which underpin the response of soils to natural and anthropogenic perturbations
Aims	<p>a. Contribution of the activity to the framework AA M1.1, M1.2, M1.3, M1.4, M1.5 M2.1, M2.2, M2.3, M2.4 M3.4 M6.2, M6.5</p> <p>b. Expected learning outcomes</p> <p>1 At the end of the activity, the student is able to:</p> <ul style="list-style-type: none"> - Describe the pedological processes governing soil formation and functioning - Explain the physico-chemical reactions which underpin the response of soils to natural and anthropogenic perturbations - Determine the factors and processes responsible for the variability of soil properties - Assess the response of soil to natural and anthropogenic perturbations <p>-----</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>
Evaluation methods	<p>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</p> <ul style="list-style-type: none"> - Group project report - Open book written exam
Teaching methods	<p>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</p> <ul style="list-style-type: none"> - Face-to-face classes - Field group project - Field excursion - Applied problems
Content	<ol style="list-style-type: none"> 1. Introduction 2. Soil acidity 3. Soil weathering and formation 4. Dynamics of soil organic matter 5. Sorption reactions 6. Redox reactions 7. Soil development 8. Case studies
Inline resources	Lecture notes and other teaching resources available on Moodle
Bibliography	<p>Blume H.-P., Brümmer G.W., Fleige H., Horn R., Kandeler E., Kögel-Knabner I., Kretzschmar R., Stahr K., Wilke B.-M. (2016). Scheffer/Schachtschabel soil science. Springer, Berlin. 618 p.</p> <p>Weil R.R., Brady N.C. (2017). The nature and properties of soils. Pearson, Harlow. 1104 p.</p> <p>Calvet R. (2013). Le sol. France Agricole, Paris. 678 p.</p> <p>Calvet R., Chenu C., Houot S. (2015). Les matières organiques des sols. France Agricole, Paris. 304 p.</p>
Other infos	This course can be given in English.

Faculty or entity in charge	AGRO
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Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Environmental Bioengineering	BIRE2M	4		
Master [120] in Forests and Natural Areas Engineering	BIRF2M	4		
Master [120] in Agriculture and Bio-industries	SAIV2M	5		