UCLouvain

lbir1130

2024

Introduction to Earth sciences

6.00 credits	30.0 h + 30.0 h	Q2

Teacher(s)	Delmelle Pierre (coordinator) ;Opfergelt Sophie ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	The LBIR1130 course and its abridged version LBIR1130A are courses of general scientific culture accessible to all students having completed the secondary school level. They can be taken without any prerequisites by any UCL student, regardless to the Faculty to which they belong.
Main themes	The course provides a first introduction to Earth sciences from a geological perspective; the other three main disciplines of the Earth (astronomy, oceanography and meteorology) are not included. The course describes the composition of Earth materials, the internal structure of the planet, the geological processes active at depth (internal processes) and at the surface (external processes), how rocks are formed and how they represent the archives of Earth's past. The course considers the Earth as a set of subsystems interacting with each other and which are influenced by life. Throughout the course, these subsystems and their interactions are placed in the general frame of plate tectonics which serves as the guiding principle for the course.
Learning outcomes	**At the end of this learning unit, the student is able to :** a. Contribution de l'activité au référentiel AA (AA du programme) B1.1, B1.4, B1.5 b. Formulation spécifique pour cette activité des AA du programme 1. Upon completion of this course, the student will be able to characterize the main physiographic features of the Earth and put them in the framework of plate tectonics. He/she will be able to describe the internal structure of the earth and explain upon which observations this structure was deduced. 2. The student will be able to apply a few simple principles in the observation of crustal materials, their relationship with the physiography and with the land use of the landscape. He/she will identify the most common minerals and major rock types on the basis of their physical and chemical properties and describe their mode of formation. He/she will know what type of information must be collected to adequately describe a given geological context. To do this, the student will be able to read a geological map and build a synthetic geological cross-section. 1 3. The student will develop a general understanding of internal and external processes and their interconnected and dynamic character. He/she will know how to describe the rock cycle and the water cycle and how to connect the igneous, metamorphic and sedimentary phenomena to the processes of plate tectonics. He/she will know how to summarize the main features of external processes (weathering, erosion, sedimentation) in relation to the different climatic and geographical contexts. 4. Having acquired a basic knowledge of the history of Earth, of the extent of geological times and dating methods, the student will be able to explain how the geological time scale was established and correctly situate along this time scale the main biological and physical events that affected the planet during its evolution. 5. Finally, thanks to the knowledge gained about the history and functioning of the Earth system, the student will be able to adopt a rational attitude toward its multiple implications on the foundation and the functioning of our society: future trends in natural resources, changes in the environment, exposure to natural disasters, the dissemination of scientifically invalid explanations such as creationism, etc.
Bibliography	L'UE s'appuie sur l'ouvrage de référence "Marshak, S. (2014) Terre, portrait d'une planète. De Boeck Supérieur, 2ème édition". L'acquisition de l'ouvrage est fortement conseillé mais pas obligatoire. Il est disponible à la DUC.
Faculty or entity in charge	AGRO