UCL Université catholique de Louvain

LGEO1332

2015-2016

Biogeography

5.0 credits	45.0 h + 24.0 h	2q

Teacher(s) :	Nieberding Caroline ; Wesselingh Renate ; Wesselingh Renate (compensates Nieberding Caroline) ;
Language :	Français
Place of the course	Louvain-la-Neuve
Prerequisites :	*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 :	Knowledge of ecology is essential in understanding species distributions, and the first part of the course (A) teaches elementary ecology for those students who do not have this knowledge yet. The second part of the course (B) looks at both historical and ecological explanations for present-day distributions, and the practical work aims to illustrate the diversity in species composition in different biogeographical zones in Belgium.
Aims :	The aim is to learn what the historical and ecological reasons are behind the geographical distributions of living organisms and their communities, and the dynamic nature of these distributions. *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".*
Content :	Introduction to ecology (part A, 15h, only for geography students and other students without prior knowledge of ecology) : Basic elements of the ecology of individuals, populations, and ecosystems. This part of the course consists of 6h of lectures and et 3 written reports, one each week, to describe the ecology of a plant species (a different species for each student), the other species that interact with it, and its habitat. Biogeography (part B, 30h, all students) Historical biogeography Historical factors that influence present-day distributions: continental drift, climate change, mass extinctions; global distribution of diversity at higher taxonomic levels; phytogeographical kingdoms and zoogeographical provinces; centres of origin; vicariance; long-distance dispersal; ice ages; Quaternary phylogeography; glacial refugia; diversification. Ecological biogeography Patterns of biodiversity : counting species, gradients of biodiversity, hotspots, diversity in time (succession, climax), richness and diversity. Patterns of distribution : geographical range, methods to represent distribution ranges on maps, effects of scale, limits to distributions, overcoming the barriers, types of connections, relictual distributions, endemism, dispersal, invasions, migration, the ecological niche, niche overlap, fundamental and realized niche. Communities and ecosystems : community richness, alpha, beta, gamma, and delta richness, diversity index, closed and open communities, plant growth forms, plant formations, biomes, zonal vegetations, arid regions, interzonal vegetations, predictive models. Island biogeography : types of islands, arriving on an island, species-area relationships, surviving on an island, the Theory of Island Biogeography, evolution and speciation on islands, adaptive radiation, insularity syndromes. Practical work : the 24 hours of practical work (3 field excursions to visit different biogeographical regions in Belgium) are for geography students and other non-biology students only. Biology students should follow the course Practical work in ecology and biogeography (BIO1352), especially part A of that course.

Other infos :	Prerequisite : the Ecology course (BIO1251) or an equivalent course for biology students who only do part B of the course. For students in geography or other orientations, the first 15 hours of the course (Part A) provide the necessary knowledge of ecology for the rest of the course. Biology students who come from other orientations at the UCL or other universities and can prove that they have sufficient knowledge of ecology can get dispensation for part A. They should contact the teachers at the beginning of the course. Evaluation Part A : written exam and 3 reports (each counting for 25%) Part B : written exam Practical work : one written report for each excursion Final mark : 30% part A + 60% part B + 10% practical work Support : syllabus, PowerPoint presentations on iCampus. The book Biogeography, an ecological and evolutionary approach (7th edition, 2005) de C. B. Cox et P. D. Moore, Blackwell Publishing, is used as a guideline for the course. It is available at the Science library for those students who want to consult its contents.
Faculty or entity in charge:	GEOG

Programmes / formations proposant cette unité d'enseignement (UE)

Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Master [120] in Geography : General	GEOG2M	5	-	
Master [120] in Geography : Climatology	CLIM2M	5	-	
Minor in Geography	LGEOG100I	5	-	
Bachelor in Geography : General	GEOG1BA	5	LBIO1112 **and** LBIR1130	
Additionnal module in Geography	LGEOG100P	5	-	