

In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.




5 credits

45.0 h + 24.0 h

Q2

Teacher(s)	Nieberding Caroline ;Wesselingh Renate ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	<i>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.</i>
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	<p>1 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.</p> <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> <p>First theoretical part (Introduction to ecology): 2 individual and 1 group report to be handed in in the first weeks of the semester and a written exam at the end of this part of the course. Each report and the exam count for 25% of the score, but each partial score should be > 7/20 in order to pass. One partial score of 7 or less leads automatically to a final score of 7/20, even if the calculated average is higher.</p> <p>Second theoretical part (Biogeography): written exam with open questions, a separate series of questions for each teacher. For both parts a score of 8/20 or more should be obtained in order to pass, if one of the partial scores is less than 8/20, a 7/20 will be given for the whole part. Only if a 8/20 or more has been obtained for both parts, the average of the two scores will be calculated to give the final score for this part.</p> <p>Practical work: each student should participate in at least one excursion and a single report should be written for all excursions where the student was present. The report should be handed in before a set date and it will be evaluated. A score of at least 8/20 is needed in order to pass the course.</p> <p>For the whole course, the final note is calculated as follows: $0.80 * (1/3 \text{ score Intro} + 2/3 \text{ score Biogeography}) + 0.20 * \text{score Practicals}$. Again, all parts of the course (the two theoretical parts and the practical work) must be passed with a score of 8/20 or higher to validate the course. If the score for one of the parts is less than 8/20, the final score is 7/20 or less, even if the formula result is higher.</p> <p>Partial dispensation can be obtained for successful parts (10/20 or more) between exam sessions of the same academic year, after a written request by email and validation by return email from the course holders.</p>
Teaching methods	<p>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</p> <p>The two theoretical parts are lectures. The practicals are field excursions of a full day each, at the end of the semester (on Fridays in week 10, 11 and 12).</p>
Content	<p>First theoretical part: Introduction to ecology (15h, only for geography students and other students without prior knowledge of ecology) treats 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.</p> <p>Biogeography (30h, all students):</p> <p>Historical biogeography (15h, Caroline Nieberding)</p> <p>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.</p> <p>Ecological biogeography (15h, Renate Wesselingh)</p> <p>Patterns of biodiversity: counting species, gradients of biodiversity, hotspots, diversity in time (succession, climax), richness and diversity.</p>

	<p>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.</p> <p>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.</p> <p>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.</p> <p>The practical work (24h = 3 field excursions to visit different biogeographical regions in Belgium) is for geography students and other non-biology students only. Biology students should follow the course Practical work in ecology and biogeography (LBIO1352A) on the biogeography of Belgium.</p>
<p>Inline resources</p>	<p>Moodle website for LGEO1332</p>
<p>Bibliography</p>	<p>Cox, C.B. & P. D. Moore (2005). Biogeography, an ecological and evolutionary approach (7th edition). Blackwell Publishing</p>
<p>Other infos</p>	<p>There are no prerequisites for those who follow the whole course. The first theoretical part of the course provides the necessary knowledge of ecology for the rest of the course. 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 the first theoretical part. They should contact the teachers at the beginning of the course.</p>
<p>Faculty or entity in charge</p>	<p>GEOG</p>

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Geography : General	GEOG2M	5		
Bachelor in Geography : General	GEOG1BA	5	LBIR1130 AND LBIO1110 AND LBIO1117	
Master [120] in Geography : Climatology	CLIM2M	5		
Minor in Geography	LGEOG100I	5		