UCLouvain

lbirf2202

2025

Multifunctional forest management

The version you're consulting is not final. This course description may change. The final version will be published on 1st June.

3.00 credits	15.0 h + 15.0 h	Q1

Language :	French > English-friendly
Place of the course	Louvain-la-Neuve
Prerequisites	Prerequisites: geomatics, ecology, silviculture, forest mensuration, forest economics and policy, management of habitats and species. Supplementary courses: environmental law, land planning.
Main themes	1. Main concepts: - basic concepts of forest management: time, space, optimal felling ages/dimensions, normal forests, annual allowable cut; - steps in forest management: analysis, synthesis, implementation, follow-up/monitoring; - specification of forest management based on the type of society (forest, agricultural, industrial, post-industrial); - key management methods in temperate zones: uniform systems, selection system, irregular stands, conversion and transformation; - taking into account the production of social and environmental services (biodiversity, landscape, public hosting, ...); - development and management of forest formations in warm regions: tropical rainforests, other forest biomes, plantations, agro-forests and trees outside forests, analysis of context, approaches and techniques of planning and management, cross-cutting themes. The concepts related to the management of temperate forests are implemented in the companion course entitled 'Integrated project in forest and open habitat planning' LBIRF2212.
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) M1.1, M1.2, M1.4, M1.5, M2.1, M2.2, M2.4, M6.1, M6.2, M6.4, M6.9, M8.5 b. Formulation spécifique pour cette activité des AA du programme (**maximum 10**) At the end of the course, students will have acquired the skills to: 1 - master the concepts and methods involved in the different steps associated with the planning process of forests located in temperate and tropical regions - analysis, synthesis, implementation, follow-up; - select, analyze and synthesize data from diverse disciplines such as resource assessment, management, analysis of social and environmental impacts, etc.; - establish management plans at the forest ownership scale, integrating the constraints, risks and opportunities from various fields and stakeholders; - develop sound management decisions for tropical ecosystems, based on a deep understanding of their ecology and issues associated with them.
Evaluation methods	Participation of the students (participation in at least 80% of the courses and participation to all seminars; the only absences accepted will be those validated by a medical certificate, a case of "force majeure", or a demonstrated time conflict) is required for this course. In agreement with Article 72 of the General Regulations for Studies and Examinations, the lecturers may propose to the jury to oppose the registration for the examination of a student who has not complied with this obligation. A continuous assessment system is in use for this course. The theoretical part of the course will be assessed by a closed-book written exam that will be held before the January session; it will account for two-thirds of the final grade. The case study and the seminars will be assessed during the session using a closed-book written exam that will account for the remaining third. In the event of a second registration, the assessment will cover the entire course; it will be done via a closed-book written exam, using the same weights between learning activities as those described above.

Teaching methods	- lectures including practical examples, case studies and active learning mini-activities; - seminars by stakeholders from the socio-professional and scientific spheres; - presentations by teams of students of a forest management case study, with discussions and feedback; - supervised analysis of a management plan of a public forest; - delineation of forest stands and parcels.
Content	Table of contents - context - management steps: analysis; synthesis; implementation; follow-up/monitoring - main management concepts: space-related concepts; time-related concepts; other concepts - silvicultural systems, silvicultural treatments et optimal felling age/dimension: general approach; classification of silvicultural treatments and management methods; determination of optimal felling ages and dimensions - management of evenaged forests: normal forest; regeneration cuttings and regeneration effort; groups; allowable cuts - management of irregular / unevenaged forests: particularities ; normal forest; allowable cuts; follow-up and control; conditions of application - stand conversion and transformation - multifunctional role of forests: historical context; legal context; institutional context; history of management methods
Inline resources	Moodle
Bibliography	Les supports de cours obligatoires (diapositives power point, documents de référence) sont mis à disposition de l'étudiant sur Moodle. Pour en savoir plus, l'étudiant pourra consulter utilement les ouvrages de référence suivants : - de Turckheim, B., Bruciamacchie, M. 2005. La futaie irrégulière. Théorie et pratique de la sylviculture irrégulière, continue et proche de la nature. Edisud, Aix-en-Provence, France, 286 p. - Dubourdieu, J. 1997. Manuel d'aménagement forestier. Gestion durable et intégrée des écosystèmes forestiers. Lavoisier Tec&Doc, Paris, France, 243 p.
Other infos	This course can be given in English. This course mobilizes the skills acquired throughout the cursus to analyze a forest (ownership, massif) from various angles, identify constraints, opportunities and risks, define coherent management objectives and plan in time and space interventions allowing them to be met. It therefore contributes to maintaining the continuity of the ecosystem services provided by the forest. This course is committed to transition and sustainable development
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Forests and Natural Areas Engineering	BIRF2M	3		