lbirf2105a

2019

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.

4 credits	30.0 h + 30.0 h	Q1

Teacher(s)	Ponette Quentin ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	1. Main concepts: - context, tags and constraints: time, cost, types of ownerships and owners, stand and ecosystem stability, wood quality; - evenaged monospecific stands: installation, education / stem formation, growth, regeneration; - complex stands: conversion and transformation, selection system, treatment of irregular and / or mixed-species stands; - dendrology: identification and ecology of the main tree species used for silviculture in temperate Europe; - compared applied silvicultures: optimizing silvicultural prescriptions according to the species (biological and ecological characteristics, wood properties), eco-climatic conditions and techno-economic context (e.g. public forests, private forests.).
Aims	*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".*
Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** - written examination; - oral examination on the identification, systematics and autecology of tree species; - project report; - critical analysis of technical texts.
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** - lectures including practical examples; - seminars by stakeholders from the socio-professional sphere; - mini-project focused on combined site-stand assessment, and related silvicultural prescriptions; - training to tree marking in a marteloscope; - practical field and laboratory work dedicated to the identification of tree species; - reading and analysis of technical texts/manuals in groups of students; - thematic field excursions on regeneration, as well as on hardwods and conifers silvicultures.
Content	a. Table of contents **Part I - Principles** - silvicultural systems - guidelines: socio-economic function; ecological function; multifunctionality; risk management - integrated assessment of sites and stands: principles; forest site quality assessment; stand description and analysis; stand classification **Part II - Silvicultural interventions in evenaged stands** - silvicultural cycle and stages - regeneration stage: objectives and timetable; installation *vs* qualification; adapting to species and environmental conditions; natural *vs* artificial regeneration - thinning stage: modalities; definition of objectives and selection criteria; tools, guidelines and references; practice of thinnings - early stand management: form pruning and artificial pruning - regeneration methods: concepts; modes of action; typology of regeneration methods **Part III - Silviculture of complex stands** - description and assessment : components, stand typology - functioning: basic principles; growth and canopy position; ingrowth and regeneration; stationarity

	- management and stocking control: the de Liocourt model - advantages and limitations; selection system; control; adapting to species and environmental conditions b. Additional informations This course is organized in the form of five interconnected modules. - Module 1: lectures and seminars - 14 sessions of 2 hours on the establishment, management and transformation of forest stands of contrasting structures and species compositions; - Module 2: excursions - three 1-day field trips devoted to the regeneration of stands, to the silvicultures of hardwoods and to the silvicultures of conifers, respectively; - Module 3: tree marking - initiation to tree marking in irregular stands in a marteloscope; - Module 4: project - integrated site quality - stand assessment, and silvicultural prescriptions; - Module 5: dendrology - five 4-hour sessions and one half-day trip in an arboretum to identify and learn the ecological characteristics of the main species of gymnosperms and angiosperms used for silvicultural purposes in temperate Europe.
Inline resources	Moodle http://www.biologievegetale.be
Bibliography	Les supports de cours obligatoires (diapositives power point, documents de référence) sont mis à disposition de l'étudiant sur Moodle. En outre, le module 5 s'appuie sur un support web interactif consultable à l'adresse : http://www.biologievegetale.be Pour en savoir plus, l'étudiant pourra consulter utilement les ouvrages de référence suivants : - Balleux, P., Van Lerberghe, P. 2006. Guide technique pour des travaux forestiers de qualité. Ministère de la Région Wallonne, DGRNE-DNF, Fiche technique n°17. Namur, Belgique, 373 p. - Bastien, Y., Gauberville, C. (coord.). 2011. Vocabulaire forestier. Ecologie, gestion et conservation des espaces boisés. IDF, Paris, France, 554 p. + annexes - Nyland, R.D. 2002. Silviculture : concepts and applications. 2nd ed. McGraw-Hill, USA, 682 p. - Schütz, J.-P. 1990. Sylviculture 1. Principes d'éducation des forêts. Presses polytechniques et universitaires romandes, Lausanne, Suisse, 243 p. - Schütz, J.-P., 1997. Sylviculture 2. La gestion des forêts irrégulières et mélangées. Presses polytechniques et universitaires romandes, Lausanne, Suisse, 178 p. - Smith, D.M., Larson, B.C., Kelty, M.J., Ashton, P.M.S. 1996.The practice of silviculture: applied forest ecology. 9th ed. John Wiley & Sons, New York, USA
Other infos	This course can be given in English.
Faculty or entity in charge	AGRO

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Environmental Bioengineering	BIRE2M	4		🔍