UCLouvain

lbirf2102

2021

Transformation et industries du bois

4.00 credits	30.0 h + 7.5 h	Q2

Teacher(s)	Frère Hugues ;Vincke Caroline (coordinator) ;
Language :	French
Place of the course	Louvain-la-Neuve
Prerequisites	Introduction to silviculture, general ecology, Wood anatomy and properties.
Main themes	Forest engineering: - working methods of machines: advantages and constraints, calculating the profitability or productivity, soil and stands protection; - transport service: network designs for different purposes (operation, maintenance, ...), implementation criteria (profitability, landscape and environmental integration, ...), creation (specifications) and maintenance; - work planning, drafting of tenders and specifications, site organization; Wood technology: - technical implementation of wood as an engineering material: splitting, sawing, peeling, slicing, gluing, drying and preservation; - technical implementation of wood as a raw material for: panel manufacturing, paper, chemical processing of timber, fuelwood; - novel methods of improving the properties of wood, in particular modified by copolymerisation and heat treatment timber; - Environmental impacts of wood processing.
Learning outcomes	**At the end of this learning unit, the student is able to :** Contributionde l'activité au référentiel AA (AA du programme) This course contributes to the learning outcome AA 1 (Maîtriser un corpus de « savoirs scientifiques » ; en particulier 1.1 à 1.4), 2 (Maîtriser un socle de « savoirs en ingénierie et en gestion » ; en particulier 2.1) et 4 (Concevoir et mettre en oeuvre une démarche complète et innovante d'ingénieur ; en particulier 4.1) of the BIRF program. b. Formulation spécifique pour cette activité des AA du programme (maximum 10) 1 At the end of this activity, the student is able to: - Select and plan appropriate forestry, integrating the technical, ecological and economic aspects introduced in order to ensure sustainable management of land and forest resources; - Understand and compare the methods and techniques of industrial use of wood as a material and raw material by integrating theoretical concepts underlying and presented during the course;. - Develop a comprehensive and critical view of current issues in the timber industry by integrating environmental, technical and economic to sustainable management of the forest resource.
Evaluation methods	The written exam (3 hours) is based on questions which may be of the “definition” type, or focused on theoretical, targeted or transversal development. Indeed, the ability to link the concepts of the different chapters is one of the expected outcomes of the course.
Teaching methods	The course takes the form of a lecture (requiring a face-to-student), accompanied by active learning mini-activities (guided and Review, recurring quiz) and concrete examples and news. According to the news and opportunities, guest speakers are participating in this course. An excursion is organized in business and on the ground. One day of the forest tour in Master 2 is focused on those topics.
Content	1. Table of content The detailed table of contents of an academic year is given at the first class by the teacher. • General introduction on wood industry • Part 1. First transformation –Chapter I. wood sawing –Chapter II. Peeling and slicing of wood –Chapter III. wood drying –Chapter IV. wood preservation • Part 2. Second transformation –Chapter V. wood pannels

	–Chapter VI. Paper industry -Chapter VII. modified wood
Inline resources	Moodle
Bibliography	Ouvrages de référence : - Bary-Lenger et al., 1999, Transformation et industries du bois en Europe, Ed. du Perron, 557p. - Walker J.F.C., 1992, Primary wood processing – principles and practice, Ed. Chapman and Hall, 595p. -Pense-Précis Bois, 1984, Ed. H. Vial, 564 p. -Manuel scierie. Techniques et matériels. CTBA, 397p.
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	Learning outcomes
Master [120] in Forests and Natural Areas Engineering	BIRF2M	4		