

3 credits

22.5 h + 15.0 h

Q2

Teacher(s)	Ponette Quentin (coordinator) ;Vincke Caroline ;
Language :	French
Place of the course	Louvain-la-Neuve
Aims	<p>a. <u>Contribution de l'activité au référentiel AA (AA du programme)</u> Cohérence des AA cours en regard de ceux du programme B1.1., B1.3., B1.4., B1.5., B2.1., B2.3., B3.1., B3.3., B3.5., B3.7., B6.2., B6.5.</p> <p>b. <u>Formulation spécifique pour cette activité des AA du programme (maximum 10)</u> At the end of this course, the student:</p> <ul style="list-style-type: none"> <li>- understands the specifics of forest ecosystems and of their management;</li> <li>- understands the functions and issues related to forests, in a variety of bio-climatic and socio-economic contexts;</li> <li>- has the basics (vocabulary, methods, tools) needed to characterize forests (at the 'tree', 'stand', and 'ecosystem' levels; in both static and dynamic ways) and management methods;</li> <li>- understands the main processes that regulate forest dynamics at the 'tree', 'stand' and 'ecosystem' levels, in natural conditions or under management;</li> <li>- knows the cropping objectives associated with forest management as well as the silvicultural interventions implemented to meet them in the main temperate silvicultural systems (even-aged high forest, selection system, coppice and coppice with standards);</li> <li>- is able to anticipate the impact of management actions on forests at the 'tree', 'stand' and 'ecosystem' levels;</li> <li>- is able to analyse a forests site and a stand, and based on this, to establish basic management recommendations.</li> </ul> <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><b>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</b></p> <ul style="list-style-type: none"> <li>- Written closed-book exam with short answers (70%)</li> <li>- Written group report related to the characterization of a forest stand (30%)</li> </ul>
Teaching methods	<p><b>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</b></p> <ul style="list-style-type: none"> <li>- Lectures with active learning mini-activities and real-life examples;</li> <li>- Quizzes allowing the gradual acquisition of essential notions, with feedback. The completion of the quizzes within the allotted time is compulsory, but the mark obtained in the test does not enter into the final mark;</li> <li>- Presentations given by stakeholders in the socio-professional world;</li> <li>- Integrated small-scale group project (basic stand description and analysis), with feedback in the field. Participation in group work and submission of the project are compulsory;</li> <li>- One-day field trip in public and/or private forests; presence at the excursion is compulsory.</li> </ul>
Content	<p><b>Part I. Forests</b></p> <ul style="list-style-type: none"> <li>- definitions</li> <li>- diversity of forests over space</li> <li>- diversity of forests over time</li> <li>- humans and forests</li> </ul> <p><b>Partie II. Trees</b></p> <ul style="list-style-type: none"> <li>- definitions</li> <li>- morphology and growth</li> <li>- effects of environmental factors on tree</li> </ul> <p><b>Partie III. Forest dynamics</b></p> <ul style="list-style-type: none"> <li>- solar radiation and forests</li> <li>- successions</li> <li>- disturbances</li> <li>- site availability and opening of gaps</li> <li>- colonization and installation</li> </ul>

	<ul style="list-style-type: none"> <li>- biotic interactions</li> <li>- species strategies</li> <li>- silvigeneses: single-cohort vs multicohort stands</li> </ul> <p><b>Partie IV. Silvicultures</b></p> <ul style="list-style-type: none"> <li>- context</li> <li>- silvicultural systems</li> <li>- cropping objectives and silvicultural interventions</li> </ul>
<p>Inline resources</p>	<p>Moodle</p>
<p>Bibliography</p>	<p>Les supports de cours obligatoires (diapositives power point, documents de référence) sont mis à disposition de l'étudiant sur Moodle.</p> <p>Pour en savoir plus, l'étudiant pourra consulter utilement les ouvrages de référence suivants :</p> <ul style="list-style-type: none"> <li>- Barnes, B.V., Zak, D.R., Denton, S.R., Spurr, S.H., 1998. Forest ecology. 4th Ed. John Wiley &amp; Sons, New York, USA, 774 p ;</li> <li>- Chapin III, F.S., Matson, P.A., Vitousek, P. 2011. Principles of Terrestrial Ecosystem Ecology. Springer-Verlag, New York ;</li> <li>- Kimmins, J.P. 2004. Forest ecology. A foundation for sustainable forest management and environmental ethics in forestry. 3rd edition. Prentice Hall, Upper Saddle River, USA, 611 p. + annexes ;</li> <li>- Nyland, R.D., 2002. Silviculture: concepts and applications. 2nd Ed. McGraw-Hill, USA, 682 p. ;</li> <li>- Oliver, C.D., Larson, B.C., 1996. Forest stand dynamics. Updated Ed. John Wiley &amp; Sons, New York, 520 p. ;</li> <li>- Sands, R., 2005. Forestry in a global context. CABI Publishing, Wallingford, UK, 262 p. ;</li> <li>- Schütz, J.-P., 1990. Sylviculture 1. Principes d'éducation des forêts. Presses polytechniques et universitaires romandes, Lausanne, Suisse, 243 p. ;</li> <li>- Schütz, J.-P., 1997. Sylviculture 2. La gestion des forêts irrégulières et mélangées. Presses polytechniques et universitaires romandes, Lausanne, Suisse, 178 p. ;</li> <li>- 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 &amp; Sons, New York, USA</li> </ul>
<p>Faculty or entity in charge</p>	<p>AGRO</p>

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Biology of Organisms and Ecology	BOE2M	3		
Bachelor in Bioengineering	BIR1BA	3		
Minor in Scientific Culture	MINCULTS	3		
Minor in Development and Environment	MINDENV	3		