

Forest Exploitation and Nature Management Techniques (I003022)

Course size (nominal values; actual values may depend on programme)

Credits 4.0

Study time 100 h

Course offerings in academic year 2026-2027

A (semester 1)

Dutch

Gent

Lecturers in academic year 2026-2027

Hubau, Wannes

LA20

lecturer-in-charge

Van Acker, Joris

LA20

co-lecturer

Offered in the following programmes in 2026-2027

[Master of Science in Bioscience Engineering: Forest and Nature Management](#)

crdts

4

offering

A

Teaching languages

Dutch

Keywords

Nature goals, nature management techniques, biotopes, mechanization, felling and clearing of trees, ergonomics, wood sorting, timber trade

Position of the course

This course focuses on technical aspects for forest and nature management. It builds on basic subjects that deal with the structure and functioning of (semi-natural) ecosystems (including Nature Conservation, Forestry & Wood Science), by translating management goals and challenges into concrete, technical management measures. This also makes it an important building block for the integrated practical in the Master. This course highlights the nature objectives that are used to describe ecological goals in management plans. We will discuss the various techniques and tools used to achieve specific nature objectives. This course also provides insight into the interaction between forestry and wood processing. Given the importance of wood use, the extraction of wood from the forest is discussed in successive phases. Traditional and specialized techniques for the different forest belts and continents are discussed and compared.

Contents

A. General part / Introduction 1. History of mechanization in agriculture, nature management and forest exploitation 2. The 'Green sector' and legislation 3. Nature management plan and nature objectives 4. Impact of/on mechanization (environment, policy, management) B. Nature management 1. Techniques (Mowing management, Grazing management, Excavation management, Felling management, Planting management, Site construction) 2. Biotopes (Grassland, Marsh, Water, Heath & fens, roadsides & wooded edges, coast, forests & shrubs) 3. Excursion (choosing suitable and sustainable techniques and equipment in specific situations) C. Forest exploitation 1. The importance of forest exploitation 2. Mechanization of forest work 3. Characteristics of tropical forest exploitation 4. Felling techniques and debarking 5. Clearing, storage, loading and transport of trees 6. Combined forest exploitation machines 7. Human factors in forest work – safety 8. Sorting and classification of timber, timber sales and timber trade worldwide 9. Certification of forests and timber products

Initial competences

This course builds on certain final competencies of the 'Nature Conservation' course and the 'Forest & Wood Science' course.

Final competences

- 1 Describing techniques and equipment used in nature management
- 2 Describing techniques and equipment used in the various stages of forest exploitation (felling, debarking, clearing, transporting, storing, sorting, classifying, certifying, timber sales)
- 3 Recognizing problems and opportunities in forest and nature management techniques
- 4 Choosing suitable and sustainable management techniques and equipment in concrete cases
- 5 Weighing technical, ecological, economic and social preconditions when choosing technology and equipment
- 6 Critically evaluating the advantages and disadvantages of techniques and equipment.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Excursion, Lecture, Practical, Independent work

Extra information on the teaching methods

Success in organizing the excursion depends on circumstances

Study material

Type: Syllabus

Name: Forest exploitation

Indicative price: € 20

Optional: no

Language : Dutch

Number of Pages : 100

References

Manuel d'exploitation forestière (ARMEF & CTBA, 1993), Damage-controlled logging in managed tropical rain forest in Suriname (Henderson, 1990), Die Holzernte (Caprez & Stephani, 1984), Machines d'exploitation forestière (ARMEF, 1991), Classement des bois ronds feuillus (Baylot & Vautherin, 1992), Certification of forest products, issues and perspectives (Viana et al. eds., 1996), Van Uytvanck & De Blust 2012 Handboek_voor_beheerders_deel1_habitats, Van Uytvanck & De Blust 2012 Handboek_voor_beheerders_deel2_soorten

Course content-related study coaching

Demonstration on the use of a chainsaw, excursion on nature management techniques

Assessment moments

end-of-term assessment

Examination methods in case of periodic assessment during the first examination period

Participation, Written assessment

Examination methods in case of periodic assessment during the second examination period

Participation, Written assessment

Examination methods in case of permanent assessment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

Extra information on the examination methods

Written (closed book), end-of-term exam

Calculation of the examination mark

100% end-of-term exam

Students who eschew end-of-term and/or continuous assessment for this course unit may be failed by the examiner.

