Decipher the functioning and dynamics of temperate forest ecosystems and develop quantitative tools for their sustainable management in a context of global environmental changes...

European/International partnerships

* Université de Lorraine, AgroParisTech and INRA are members of the NFZ forest network (Nancy–Freiburg–Zürich) for higher education and research ([www.nfz-forestnet.eu](http://www.nfz-forestnet.eu)).

* AgroParisTech belongs to the European consortium of the Erasmus Mundus MSc European Forestry and offers the major Forests and their Environment as the educational support for the 2nd year ([www2.uef.fi/europeanforestry](http://www2.uef.fi/europeanforestry)).

* INRA and AgroParisTech are members of the European Forest Institute (EFI). The Observatory for European Forests (OEF) regional office of the EFI is located in Nancy ([www.eficient.efi.int/portal/oeef](http://www.eficient.efi.int/portal/oeef)).

* International network opportunities further arise from international research collaborations at Université de Lorraine, AgroParisTech and INRA.

An urban area of 400,000 inhabitants and 50,000 students (Université de Lorraine and 10 Engineering schools)

Easy access from Paris by TGV (high speed train), and close to Germany, Belgium, and Luxembourg

Nancy has a great building heritage (inscribed on the UNESCO list) including the Art Nouveau period, and is surrounded by forests and hills, apt for recreational activities

Many cultural and entertainment events all year round (e.g. NJP Jazz festival, le Livre sur la Place book fair).

More info at: [www.nancy-tourisme.fr](http://www.nancy-tourisme.fr)
Forests and their Environment

Concept and objectives

This MSc major (M2) offers a broad perspective and in-depth training on the functioning and dynamics of European forests, providing a basis to address challenges arising from the environmental constraints and human uses of forests.

The objective is to prepare for 1) professional careers in R&D or expert positions on the environmental diagnosis and management of forest ecosystems in private/public national/international institutions, 2) scientific careers in research institutions conducting programs in forest ecology and management.

- An introductory session gives an overview of these forests in the framework of Sustainable Forest Management and its implications.
- The core of the major provides fundamental and applied knowledge on the functioning and dynamics of forest ecosystems and communities, including tree physiology, biogeochemistry, ecology, and genetics. A specific emphasis is placed on the interaction between forest ecosystems and their environment, including global change issues.
- A “tools & methods” session provides knowledge and training on the main quantitative tools used in ecosystem diagnosis and experiment analysis, including GIS, statistics, and modelling. This session is complemented with a literature synthesis project.

Institutional framework and connection to research

The MSc program provides a research-driven approach to the understanding and management of forest ecosystems. The teaching staff includes more than 30 professors and senior scientists from 9 research labs at Université de Lorraine (UL), AgroParisTech and Institut National de Recherche Agronomique (INRA). INRA (www.nancy.inra.fr) is an important contributor of this major and provides updated and broadened perspective on current forest ecosystem research.

In addition to the balance between fundamental and practical knowledge, practitioners from institutions involved in forest R&D and management will also provide a connection to applied and management forestry issues, and ensure both a professional and academic education.

The Forests and their Environment major has been rated A-level (highest mark) by the Evaluation Agency for Research and Higher Education (AERES).

Master curriculum

The first semester (S9) includes 10 compulsory training units for a total of 30 ECTS credits. Training units are as follows:

Fundamental and applied knowledge

- European forests, sustainable forest management, certification
- Understanding tree structure and functions
- Biogeochemical cycles in forest ecosystems
- Dynamics of forest plant and tree communities
- Forests and forestry in a context of global change
- Genetic resources in forest ecosystems and forestry

Tools and methodology

- Literature synthesis project
- GIS analysis in forest ecology and management
- Advanced statistics for forest science and forest ecology
- Modelling for forest research and management

The second semester (S10) is dedicated to an internship of a duration of >20 weeks evaluated through a written dissertation and an oral defence for 30 ECTS credits. The internship takes place in either a research laboratory or in institutions, companies or associations of relevant fields of application. Internships can be proposed by students.

Contact and Information

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Application and Admission

The Forests and their Environment major seeks to recruit 15 students on selective bases.

Depending on their education, applicants should justify a 1st-year MSc level (M1) or a master’s degree or equivalent (M2), as acknowledged in the EHEA (European Higher Education Area), and educational background in the fields of forestry, plant science, ecology, eco-physiology, or environmental science...

A B2 level in English is required. See the self-assessment grid of Common European Framework of Reference (CEFR) at: https://europass.cedefop.europa.eu/en/home. Equivalent qualifications are: IELTS >5, TOIEC >700, TOEFL IBT > 90, or Cambridge FCE.

Applications should include 1) the Europass documents (https://europass.cedefop.europa.eu/en/home), 2) marks obtained in the previous educational year, 3) a letter of application, and 4) one letter of recommendation from a senior professor/scientist of earlier educational courses/internships.