Direzione Ricerca,
Innovazione e
Internazionalizzazione

UNIVERSITÀ
DI TORINO

ID

VP_051_DISAFA

Visiting Professor Program
Academic Year 2025/2026

TEACHING COMMITMENT: **40 hours**

COURSE TITLE

Advanced Forest Sciences

TEACHING PERIOD

II semester

SCIENTIFIC AREA

Forest Management and Silviculture; Wood Technology and Forest Utilisation

LANGUAGE USED TO TEACH

English

COURSE SUMMARY

The "Advanced Forest Sciences" course explores ecological processes at the scales of individual trees, tree populations, and forest stands, with a particular emphasis on tree rings and forest inventories. Its primary focus is to enhance our understanding of how climate variability influences forest dynamics, including tree regeneration, radial growth, and mortality.

The course also examines the impacts of extreme climate events, such as droughts and frosts, on forest ecosystems. By combining tree-ring data with forest inventory data, students will assess the implications of climate change for forest management practices and decisions.

The curriculum integrates empirical studies across diverse ecosystems, including mountain forests and treeline ecotones. Students will participate in fieldwork to collect data, such as increment cores, which will be processed and analysed in the Laboratory of Dendrochronology and Wood Anatomy (DISAFA). Additionally, the course incorporates existing monitoring datasets for comprehensive analysis. A wide range of statistical methods will be employed to analyse the collected and provided

data, equipping students with valuable tools for ecological research and forest management applications.

LEARNING OBJECTIVES

1. Understand Ecological Processes at the individual tree, tree population, and forest stand levels, with a focus on the role of tree rings and forest inventories in studying forest dynamics.
2. Analyse the Impact of Climate Variability on forest dynamics, including tree regeneration, radial growth, and tree mortality.
3. Evaluate the Effects of Extreme Climate Events, such as drought and frost, on forest ecosystems and their long-term consequences.
4. Integrate Tree-Ring and Forest Inventory Data to assess the effects of climate change on forest ecosystems and to inform forest management practices and decisions.
5. Conduct Fieldwork and Data Collection, including gathering increment cores for dendrochronological analysis.
6. Apply a range of statistical methods to analyse both field-collected and existing monitoring data.

OTHER ACTIVITIES BESIDE THE COURSE

Wood cores will be processed and analysed in the Laboratory of Dendrochronology and Wood Anatomy (DISAFA)

VISITING PROFESSOR PROFILE

The ideal candidate for the visiting professor position in "Advanced Forest Sciences" should possess extensive experience in forest science, dendrochronology, and ecological research, strongly emphasising tree-ring analysis, forest inventories, and climate-forest interactions. They should understand how climate variability affects forest dynamics, including tree regeneration, radial growth, and mortality. A robust background in field data collection techniques, such as increment core sampling, and experience processing and analysing tree-ring data in a laboratory setting are essential. The candidate should also demonstrate substantial expertise in applying statistical methods to analyse forest monitoring datasets and interpret ecological trends. They must have a proven track record of scientific research and international collaborations, with publications in peer-reviewed journals. Experience working in mountain forests, treeline ecotones, and diverse forest ecosystems will be highly valued. In addition to research expertise, the candidate should have considerable teaching experience at the university level and be capable of designing and delivering courses on applied forest science, dendrochronology, and climate-forest interactions. A commitment to mentoring students and integrating fieldwork with laboratory analysis is crucial.
Prior affiliations with recognised research institutions and experience in forest management, conservation, and climate change adaptation strategies will be considered significant assets.

CONTACT REFERENT

Renzo Motta
renzo.motta@unito.it