



Universitat de Lleida

# DEGREE CURRICULUM **ST IN GLOBAL ENVIRONMENTAL CHANGE**

Coordination: COLL MIR, LLUIS

Academic year 2019-20

## Subject's general information

<b>Subject name</b>	ST IN GLOBAL ENVIRONMENTAL CHANGE			
<b>Code</b>	111004			
<b>Semester</b>	ANUAL CONTINUED EVALUATION			
<b>Typology</b>	Degree	Course	Character	Modality
	Master's Degree Erasmus Mundus in Spatial and Ecological Modelling in European Forestry	2	COMPULSORY	Attendance-based
<b>Course number of credits (ECTS)</b>	3			
<b>Type of activity, credits, and groups</b>	<b>Activity type</b>	PRACAMP	TEORIA	
	<b>Number of credits</b>	1.2	1.8	
	<b>Number of groups</b>	1	1	
<b>Coordination</b>	COLL MIR, LLUIS			
<b>Department</b>	CROP AND FORESTRY SCIENCES			
<b>Teaching load distribution between lectures and independent student work</b>	Traditional (face-to-face), blended learning. The course will include lectures, group discussions, field trips, lab training in molecular techniques and student presentations.			
<b>Language</b>	English			
<b>Distribution of credits</b>	Theoretical: 40% Practical: 60%			

## Teaching staff

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
COLL MIR, LLUIS	lcoll@eagrof.udl.cat	1,5	
OLIVA PALAU, JONÀS	jonas.oliva@pvcf.udl.cat	1,5	

## Subject's extra information

Biological invasions are key components of global environmental change and pose a large threat to forest ecosystems worldwide. In the course, we will address the ecological basis of biological invasions, the factors behind invasion success and the main challenges in managing and controlling invasions. The practical part of the course will focus on invasive forest pathogens and the use of molecular techniques as key tools to model invasions in order to design effective management strategies.

## Learning objectives

The student will gain a strong theoretical background to understand invasions by exotic species (with particular focus on forest pathogens) and provide management recommendations to stakeholders (general public, forest owners, administration, NGOs).

## Subject contents

- Ecological theory of biological invasions.
- Drivers of invasion: globalization and climate change.
- Molecular ecology: basics of DNA analysis.
- Invasive pathogens and society.
- Cases of invasions in Europe and other continents.

## Methodology

The course will be based on:

- i. Lectures based on the latest scientific literature.
- ii. Student presentations on case studies
- iii. Practical experiments with DNA
- iv. Field trip

Student presentations of individual reports

## Development plan

The course will start with lectures and a laboratory practical. Later on, students will present case studies that will be discussed in the class. Half-way in the course, students will be assigned an individual project on a management plan for an invasive pathogen. Students will weekly update the others with the development of their individual project. The course will finish with student presentations, that will be evaluated each other.

## Evaluation

In order to pass the course the student should attend 70% of the lectures, labs, and group discussions. In order to pass, the student will have to:

- i. Recognize the ecological basis of biological invasions
- ii. Hand in a report of the molecular lab
- iii. Give two presentations about two different invasive pathogens.
- iv. Hand in a report of the individual project.

Present the individual project in the class, and evaluate one of the other students' projects.

## Bibliography

Will be supplied during the course.