COURSE DETAILS

"MANAGEMENT OF MEDITERRANEAN FOREST ECOSYSTEMS"

* *In case of an integrated course, the SSD (scientific disciplinary sector) should be written above only if all modules of the course belong to the same SSD, otherwise the SSD is to be written alongside the MODULE (see below).*

DEGREE PROGRAMME: FORESTRY AND ENVIRONMENTAL SCIENCES

ACADEMIC YEAR 2021-2022

GENERAL INFORMATION – TEACHER REFERENCES

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GENERAL INFORMATION ABOUT THE COURSE

INTEGRATED COURSE: MANAGEMENT OF MEDITERRANEAN FOREST ECOSYSTEMS
MODULE: FIRE ECOLOGY AND FOREST FIRES (SSD: BIO/07)
YEAR OF THE DEGREE PROGRAMME: II
SEMESTER: II
CFU: 6

REQUIRED PRELIMINARY COURSES (IF MENTIONED IN THE COURSE STRUCTURE "ORDINAMENTO")

None

PREREQUISITES (IF APPLICABLE)

General knowledge of biology, botany, zoology and ecology acquired in the first-level university degree

LEARNING GOALS

The student must show: (I) understanding of basic principles of fire ecology, in particular the regeneration strategy of plant species in different ecosystems and the biodiversity dynamics associated to different fire regimes. (II) demonstrating the grasp of the wildfire issue in relation to climate change and land use dynamics. (III) knowledge and understanding of prevention strategies and firefighting problems with focus on prescribed fire and back fire methodologies. The course will address the different topics by lectures and field activities to get an experience on main factors of risk related to vegetation structure, topography and climatic conditions.

EXPECTED LEARNING OUTCOMES (DUBLIN DESCRIPTORS)

Knowledge and understanding

The student will learn about the problems of soil degradation and instability after a wildfire and the necessary actions to mitigate the erosion processes after a fire. Simulation exercises will be done to represent scenarios of wildfire propagation and for the preparation of prevention plans based on prescribed fires.

Applying knowledge and understanding

The student will understand the processes governing biodiversity erosion and the action needed to counter it. Moreover, they will be able to select and apply methods to assess the conservation status of biological resources (with special reference to wildlife) and evaluate the application of the different strategies of nature management and conservation.

COURSE CONTENT/SYLLABUS

The course is made of two modules, Laboratory of Biodiversity Conservation (8 CFU) and Fire Ecology and Forest Fires (6 CFU). As for the latter, the syllabus is as follows:

- Fire ecology; Mediterranean ecosystems, regeneration strategies, post-fire successions (2 CFU)
- Fire propagation models (2 CFU)
- Prescribed fire (1 CFU)
- Wildfire control and fighting (1 CFU)

READINGS/BIBLIOGRAPHY

General reads:
"Il sistema suolo-vegetazione" Amato, Migliozzi, Mazzoleni. Liguori, Napoli.
"Ecologia vegetale" Canullo, Falinska. Liguori, Napoli.
"Introduzione all'ecologia degli incendi" Mazzoleni, Aronne. Liguori, Napoli.
"Ecologia vegetale" Pignatti, Utet, Torino.

Educational material provided by the teacher.

TEACHING METHODS

Lectures will constitute ca. 50% of total teaching time, and the remainder will consist of practicals.

EXAMINATION/EVALUATION CRITERIA

a) Exam type:

Exam type	
written and oral	
only written	X
only oral	
project discussion	x
other	

In case of a written exam, questions refer to: (*)	**Multiple choice answers**	X
	Open answers	X
	Numerical exercises	X

(*) multiple options are possible

b) Evaluation pattern:

In the test, only correct answers will be evaluated and the final mark will be weighted based on the number of credits of each module, as follows: LABORATORY OF BIODIVERSITY CONSERVATION, 8CFU: 57%; FIRE ECOLOGY AND FOREST FIRES, 6 CFU, 43%