Universitat de Lleida

DEGREE CURRICULUM

RISK MANAGEMENT IN FOREST PLANNING

Coordination: RAMOS MARTIN, MARIA CONCEPCION

Academic year 2023-24

RISK MANAGEMENT IN FOREST PLANNING 2023-24

Subject's general information

Subject name	RISK MANAGEMENT IN FOREST PLANNING
Code	103039
Semester	2nd Q(SEMESTER) CONTINUED EVALUATION
Typology	

Degree	Course	Character	Modality
Master's Degree in Forestry Engineering	1	COMPULSORY	Blended learning

Course number of credits (ECTS)	4
Type of activity, credits, and groups	

Activity type	PRACAMP	PRAULA		TEORIA
Number of credits	0.8	1.8	0.2	1.2
Number of groups	1	1	1	1

Coordination	RAMOS MARTIN, MARIA CONCEPCION
Department	ENVIRONMENT AND SOIL SCIENCES AND CHEMISTRY
Teaching load distribution between lectures and independent student work	Classroom activities: 25% Personal work: 75%
Important information on data processing	Consult this link for more information.
Language	Spanish Català
Distribution of credits	Environment and Soil Science (2c) Agrofforestry ENgineering (2c)

RISK MANAGEMENT IN FOREST PLANNING 2023-24

Teaching staff	E-mail addresses	Credits taught by teacher	Office and hour of attention
BALASCH SOLANES, JOSE CARLOS	josepcarles.balasch@udl.cat	,8	
GELABERT VADILLO, PERE JOAN	perejoan.gelabert@udl.cat	2	
RAMOS MARTIN, MARIA CONCEPCION	mariaconcepcion.ramos@udl.cat	1,2	

Learning objectives

The objective of the subject is to know the main environmental risks, the conditions and the tools to carry out a correct planning of the forest management.

Specific objectives include:

1. Understand the concept of risk and its implications

2. Select and use the right tools for risk modelling

3. Critically propose scenarios and management measures

4. Interact with interdisciplinary groups and actors of the territory for decision-making

5. Solve case studies in which to integrate risk management into forest planning

Competences

Basic skills
B06 Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context.

B07 That students know how to apply the knowledge acquired and have the ability to solving problems in new or little-known environments within broader (or multidisciplinary) contexts related to their area of study.

B08 That students are able to integrate knowledge and face the complexity of making judgments from information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments.

B09 That students know how to communicate their conclusions – and the knowledge and ultimate reasons behind them – to specialized and non-specialized audiences in a clear and unambiguous way.

General skills
CG2 Design, write, direct, elaborate, implement and interpret projects and plans in the forest and natural environment
CG7 Develop forest policies

Specific skills
CE5 Design plans for the integral sustainable development of forest regions and the development of management

indicators.
CE7 Design Regional Planning Plans, Mountain Areas and Coastal Areas.
CE8 Design hydrological plans and to combat desertification.
CE9 Design plans and actions to control pollution of the Natural Environment due to industrial activity and waste management.

Subject contents

Program

1. General principles and conceptual approaches for risk analysis. Occurrence, exposure and vulnerability. Mitigation and adaptation plans and measures.

2. The role of climate in the development of forest stands. Weather variability, climate change and future scenarios.

3. Hydrological processes. Extreme phenomena and water availability.

·Processes of runoff generation from floods and flash-floods. Zoning of flood spaces (case study and field trip).

·Water resources and the processes of erosion and desertification under climate change scenarios.

4. Impacts of climate change on forest distirbution and biodiversity (case study).

5. Impact of climate on disturbance regimes. Fire risk assessment and mapping. Models of ignition and propagation of fire. Forest mitigation and management measures within a comprehensive strategy for Mediterranean areas (case study and field trip).

6. Forest management for the resilience of forest ecosystems. Forest mitigation and adaptation actions in a global framework for the provision of ecosystem services.

Case study

1- Risk: climate change- Under different emission scenarios,

Evaluate the impacts of climate change scenarios on spatial distribution of forest species.

2- The flash floods of the Ondara and Francolí rivers in the last 400 years. and the River Ebro in the last 500 years.

Hazard analysis with intrumental data and with data on the reconstruction of historical floods. Discussion of the results in view of population growth.

3- Simulation of wildfire behavior and spread in the basins of the Francolí River and Prades Mountains. Design of preventive forest treatments against large fires. Evaluation of the effect of treatments

Methodology

Teaching is proposed through:
-theoretical classes where the basic concepts of the subject will be explained;
-practical classes in the classroom and in the field to see problems in situ and work with real data;
-case study, to be carried out by combining individual and group work

Development plan

The development of the subject is raised with the development of theoretical classes and study of practical cases, with activities in classroom and field, and autonomous work outside the classroom.

Evaluation

Assessment:

The evaluation will be based on the reports that the students will have to present for the different activities proposed, according to the specific indications in each case study.
The assessment will include three blocks, coinciding with the three risks addressed in the subject:
Block I: climate change and its effects (25%).
Block 2: floods (25%)
Block 3: fires (50%).
The concreteness and clarity of the report will be assessed, as well as the critical capacity to evaluate the results obtained. In order to pass the course, it is necessary to present the reports of all the proposed activities and to have a minimum mark of 4/10 points in each of them. The presentation of work will be done as a priority through the CV, following the instructions of the teachers.

Alternative assessment: Students who request an alternative assessment must submit the proposed assignments for each of the thematic blocks on the date set for the course assessments (the same as for the rest of the students). The weight of each one of them will be proportional to the number of credits of the subject. It will be necessary to present all the assignments and to have a grade of at least 4/10 points for each assignment.

Bibliography

References

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