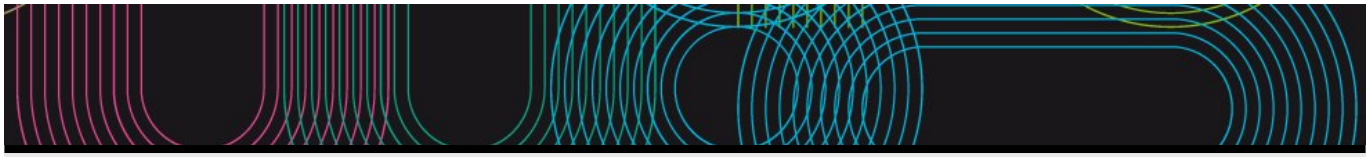

IDENTIFYING DATA				
Forest Fires				
Subject	Forest Fires			
Code	P03G370V01802			
Study programme	(*)Grao en Enxeñaría Forestal			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	4th	2nd
Teaching language	Spanish Galician			
Department	Natural Resources and Environment Engineering			
Coordinator	Fernández Alonso, José María			
Lecturers	Fernández Alonso, José María			
E-mail	txema182@gmail.com			
Web				
General description	Technicians of prevention *and extinction of forest *fires			

Competencies	
Code	
B1	Ability to understand the biological, chemical, physical, mathematical and representation systems necessary for the development of professional activity, as well as to identify the different biotic and physical elements of the forest environment and renewable natural resources susceptible to protection, conservation and exploitations in the forest area.
B3	Knowledge of degradation processes that affect forest systems and resources (pollution, pests and diseases, fires, etc.) and capacity for the use of forest environment protection techniques, forest hydrological restoration and biodiversity conservation .
B13	Ability to design, direct, elaborate, implement and interpret projects and plans, as well as to write technical reports, recognition reports, assessments, appraisals and appraisals.
C9	Ability to know, understand and use the principles of: forestry hydraulics; hydrology and hydrological-forest restoration.
C27	Ability to know, understand and use the principles of: prevention and fight against forest fires.
D4	Sustainability and environmental commitment
D7	Skill in the use of IT tools and ICTs.
D8	Ability to solve problems, critical reasoning and decision making

Learning outcomes			
Expected results from this subject	Training and Learning Results		
Lana relation between competitions *and results, *and he weight of each competition inside wool matter show * in him *pdf *attach.	B1 B3	C9 C27	D4 D7
http://forestales.uvigo.es/sites/default/files/40%20Fires.*Pdf#**overlay-**context=are/**content/competitions-*and-resulted-of-*learning-by-matter	B13		D8

Contents	
Topic	
1. Forest fires.	Definition. General characteristics. Causality. Socioeconomic implications. Statistics. Repercussion throughout the world, the Mediterranean and Spain.
2. Flammability and combustibility.	Heat transfer. Phases of combustion in case of fire. The temperature during forest fires.
3 forest fuels.	Typology. The physical-chemical behavior with influence in the world. Models of fuel.
4 Influence of meteorological and topographic factors on the spread of fire.	Relative humidity and temperature. Precipitation. Winds. Heat inversion. Electric storms. Atmospheric stability.
5 Variables of basic behavior of forest fires.	Empirical physical and empirical models of propagation. Prediction systems. The dynamics of high intensity fires. The factors they cause. Fires of glasses. Fires of points.

6 Fire Prevention.	Analysis of the causes. Determining sites. The educational legislation. Coercive work. The rates of fire hazard. Spanish system. Systems from America, Canada and Australia.
7 Preventive forestry. Activities related to forest fires.	Influence of problems in the planning of forest fires. Firewall and firewall areas. Preventive forestry techniques. Amendments arborea vegetation. Scrub fuel control techniques. The prescribed burning schedule. Ignition techniques. Execution. Evaluation.
8 Organization of a permanent fire protection structure.	Operations. Extinction techniques. Basic principles. Lines.Lineas control lines. Direct attack The indirect attack.
9. Hand tools and equipment for security personnel.	Means of aerial combat in it fires. Characteristics general types, advantages and use limitacións.El auga.Retardantes: types, effects and applications.
10 Influence of forest fires on ecosystems.	Adaptations of vegetation fires. Fire regimes. Post-secondary world. Impact of fire on the ground. Erosive effects of forest fires. Change the fire hydrologicos.Repelencia after the infiltration of water. Changes in the PTO.
11 Restoration of burned areas.	Actions to control erosion. Revegetación: Techniques, spices, advantages and limitations

Planning			
	Class hours	Hours outside the classroom	Total hours
Laboratory practices	10	20	30
Lecturing	30	30	60
Computer practices	6	6	12
Autonomous problem solving	2	20	22
Studies excursion	6	6	12
Short answer tests	1	3	4
Problem solving	5	5	10
*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.			

Methodologies	
	Description
Laboratory practices	Resolution of practical cases by students with educational orientation and the use of specific laboratory of materials and equipment
Lecturing	Exposition of the content of the subject, the theoretical bases and / or guidelines for the realization of A work, the exercise or project to be developed by students
Computer practices	Practices in computer classrooms Present practice in computer rooms to solve practical assumptions of students with the orientation and use of specific programs and resources of the teaching team
Autonomous problem solving	Problem solving and / or autonomous problem solving exercises that students must solve in a personalized way outside the class throughout the course
Studies excursion	Practical exercise management tools and fire fighting equipment
	All competences are type A, which they learn in all methodologies

Personalized attention	
Methodologies	**Description**
Laboratory practices	
Lecturing	
Computer practices	
Studies excursion	
Autonomous problem solving	
Tests	**Description**
Short answer tests	
Problem solving	

Assessment				
	Description	Qualification	Training and Learning Results	
Autonomous problem solving	*Approach of problems that he student has to resolve of personalised form *out of class to *the wide of him course	30	C27	D7
Short answer tests	*Approach of questions of *brief answer that he student has to resolve in class in him act of evaluation	21	C27	
Problem solving	*Approach of problems that he student has to resolve in class in him act of evaluation	49	C27	

Other comments on the Evaluation

All wools competitions are of type To *and evaluate * of conjoint *form **segun *the *procedures described previously.

Sources of information

Basic Bibliography

Juli G. Pausas, **¿QUÉ SABEMOS DE...? Incendios forestales**, CSIC e Catarata, 2012

Vega, J.A. e outros, **Acciones urgentes contra la erosión en áreas forestales quemadas. Guía para su planificación en Galicia. Xunta de Galicia**, 1, Fuegored, 2013

Ricardo Vélez Muñoz, **LA DEFENSA CONTRA INCENDIOS FORESTALES. FUNDAMENTOS Y EXPERIENCIAS**, 5, MCGRAW-HILL, 2009

Complementary Bibliography

Arellano, S. e outros, **Foto-Guía de combustibles forestales de Galicia. Versión I**, 1, Andavira, 2016

J.A. Vega, **Manual de queimas prescritas para matogueiras de Galicia**, 1, CMA- Xunta de Galicia, 2001

Recommendations

Subjects that it is recommended to have taken before

Physics: Physics I/P03G370V01102
Physics: Physics II/P03G370V01202
Edaphology/P03G370V01302
Forestry/P03G370V01401