UNIVERSIDAD DE CASTILLA - LA MANCHA

GUÍA DOCENTE

1. General information

Course: FIRE ECOLOGY
Code: 37333
Type: ELECTIVE
ECTS credits: 4.5
Degree: 340 - UNDERGRADUATE DEGREE PROGRAMME IN ENVIRONMENTAL SCIENCES
Academic year: 2021-22
Center: 501 - FACULTY OF ENVIRONMENTAL SCIENCES AND BIOCHEMISTRY
Group(s): 40
Year: 4
Duration: First semester
Main language: Spanish
Second language: English
Use of additional languages:
English Friendly: Y
Web site:
Bilingual: N

Lecturer: **MARIA BELEN HINOJOSA CENTENO** - Group(s): **40**

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Sabatini/0.36	CIENCIAS AMBIENTALES	5470	mariabelen.hinojosa@uclm.es	

Lecturer: **ANTONIO PARRA DE LA TORRE** - Group(s): **40**

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Lecturer: **IVAN TORRES GALAN** - Group(s): **40**

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Sabatini/0.35	CIENCIAS AMBIENTALES	5472	ivan.torres@uclm.es	monday to thursday, 11:00 to 14:00 (contact by e-mail beforehand)

2. Pre-Requisites

Not established

3. Justification in the curriculum, relation to other subjects and to the profession

Not established

4. Degree competences achieved in this course

Course competences

Code	Description
CB02	Apply their knowledge to their job or vocation in a professional manner and show that they have the competences to construct and justify arguments and solve problems within their subject area.
CB03	Be able to gather and process relevant information (usually within their subject area) to give opinions, including reflections on relevant social, scientific or ethical issues.
CB04	Transmit information, ideas, problems and solutions for both specialist and non-specialist audiences.
E01	Ability to understand and apply basic knowledge.
E02	Capacity for multidisciplinary consideration of an environmental problem
E03	Awareness of the temporal and spatial dimensions of environmental processes
E04	Ability to integrate experimental evidence found in field and/or laboratory studies with theoretical knowledge.
E05	Capacity for qualitative data interpretation
E06	Capacity for quantitative data interpretation
E07	Capacity to plan, manage and conserve natural resources
E12	Ability to manage Geographic Information Systems
E13	Ability to handle software.
E18	Capacity to manage the natural environment
E20	Capacity to plan and carry out actions to restore the natural environment
G01	Proficiency in a second foreign language at level B1 of the Common European Framework of Reference for Languages.
G02	Knowledge of Information and Communication Technologies (ICT).
G03	Good oral and written communication

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Know the techniques and measures for fire prevention and firefighting.

Understand the phenomenon of forest fires, their global significance and their role in ecosystems.

Understand the responses of organisms, ecosystems and landscapes to fire.

Acquire basic criteria and techniques useful for the management of ecosystems affected by fires.

Understand the physical and chemical processes of the combustion phenomenon.

Know the risk factors that determine the occurrence of fires.

6. Units / Contents

Unit 1: Introduction

- **Unit 1.1** Fire as a disturbance
- **Unit 1.2** The role of fire in mediterranean ecosystems

Unit 2: The phenomenon of fire

- **Unit 2.1** Drivers of fire risk and fire occurrence
- **Unit 2.2** Physics and Chemistry of combustion
- **Unit 2.3** Fire fuels
- **Unit 2.4** Fire behaviour and modelling. Fighting wildfires

Unit 3: Impacts of fire on living organisms

- **Unit 3.1** Plants and their response to fire
- **Unit 3.2** Ecophysiology of plants and fire
- **Unit 3.3** Plants and the fire regime
- **Unit 3.4** Plant communities and fire
- **Unit 3.5** Effects of fire on animals

Unit 4: Other impacts of fire, fire management, restoration of burned ecosystems

- **Unit 4.1** Effects of fire on soil and water
- **Unit 4.2** Fire management. The restoration of burned ecosystems

7. Activities, Units/Modules and Methodology

Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures	E01 E02 E03 E07 E18 E20 G01	0.8	20	N	-	Master classes
Study and Exam Preparation [OFF-SITE]	Self-study	CB03 E01 E02 E03 E05 E06 G01	1	25	N	-	
Workshops or seminars [ON-SITE]	Cooperative / Collaborative Learning	CB02 CB04 E13 E20 G01 G02 G03	0.28	7	Y	Y	work assignments on selected topics
Other off-site activity [OFF-SITE]	Self-study	CB03 E01 E02 E03 E05 E06 E20 G01 G02 G03	0.8	20	N	-	time dedicated to do the work assignments
Class Attendance (practical) [ON-SITE]	Practical or hands-on activities	CB03 E01 E02 E03 E04 E05 E06 E07 E12 E13 E18	0.6	15	Y	Y	Laboratory and field work. Attendance is compulsory
Practicum and practical activities report writing or preparation [OFF-SITE]	Self-study	CB02 CB03 CB04 E01 E02 E03 E04 E05 E06 E12 E13 G03	0.9	22.5	Y	Y	writing of lab and field work reports
Progress test [ON-SITE]	Assessment tests	CB03 E01 E02 E03 E05 E06 E20 G03	0.04	1	Y	N	mid-semester progress test. If passed, the topics will not be examined again in the final test
Final test [ON-SITE]	Assessment tests	CB03 E01 E02 E03 E05 E06 E20 G03	0.08	2	Y	Y	Final test
		Total:	**4.5**	**112.5**			
		Total credits of in-class work: 1.8					**Total class time hours: 45**
		Total credits of out of class work: 2.7					**Total hours of out of class work: 67.5**

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System

Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Practicum and practical activities reports assessment	25.00%	25.00%	Evaluation of lab and field work report. It can be presented either in spanish or english
Final test	55.00%	75.00%	Mid-term and final test results.
Other methods of assessment	20.00%	0.00%	Evaluation of work assignments
Total:	**100.00%**	**100.00%**	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject , an ordinary and an extraordinary one (evaluating 100% of the competences).

Evaluation criteria for the final exam:

Continuous assessment:

Students who pass the mid-term test with at least 4 points (out of 10) will only have to be tested for the contents of the second half of the semester in the final test.

All evaluation activities must be passed independently with at least 4 points (out of 10). Nevertheless, students will only pass if their final mark is over 5 points, averaged over all activities according the weights in the table above.

Non-continuous evaluation:

Ony the final test (75%) and lab/field report (25%) will be considered.

All evaluation activities must be passed independently with at least 4 points (out of 10). Nevertheless, students will only pass if their final mark is over 5 points, averaged over all activities according the weights in the table above.

Specifications for the resit/retake exam:

Those evaluation activities that were not passed (less than 4 points) will be evaluated again. The final mark must be 5 or higher.

Specifications for the second resit / retake exam:
Those evaluation activities that were not passed (less than 4 points) will be evaluated again. The final mark must be 5 or higher.

9. Assignments, course calendar and important dates

Not related to the syllabus/contents	
Hours	**hours**
Study and Exam Preparation [AUTÓNOMA][Self-study]	25
Workshops or seminars [PRESENCIAL][Cooperative / Collaborative Learning]	7
Other off-site activity [AUTÓNOMA][Self-study]	20
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	15
Practicum and practical activities report writing or preparation [AUTÓNOMA][Self-study]	22.5
Progress test [PRESENCIAL][Assessment tests]	1
Final test [PRESENCIAL][Assessment tests]	2
Unit 1 (de 4): Introduction	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	2
Unit 2 (de 4): The phenomenon of fire	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	7
Unit 3 (de 4): Impacts of fire on living organisms	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	8
Unit 4 (de 4): Other impacts of fire, fire management, restoration of burned ecosystems	
Activities	**Hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	3
Global activity	
Activities	**hours**
Class Attendance (theory) [PRESENCIAL][Lectures]	20
Study and Exam Preparation [AUTÓNOMA][Self-study]	25
Workshops or seminars [PRESENCIAL][Cooperative / Collaborative Learning]	7
Other off-site activity [AUTÓNOMA][Self-study]	20
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	15
Progress test [PRESENCIAL][Assessment tests]	1
Final test [PRESENCIAL][Assessment tests]	2
Practicum and practical activities report writing or preparation [AUTÓNOMA][Self-study]	22.5
Total horas:	112.5

10. Bibliography and Sources

Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Arnaldos, J., et al.	Manual de ingeniería básica para la prevención y extinción de incendios forestales	Mundi-Prensa			2004	
Bond, W.J. y Van Wilgen, B.W.	Fire and Plants	Springer			1996	
Keeley, J.E., et al.	Fire in Mediterranean Ecosystems	Cambridge University Press			2012	
Pausas, J.G.	Incendios Forestales, una introducción a la ecología del fuego	CSIC			2012	
Vélez, R.	La defensa contra incendios forestales: fundamentos y experiencias	McGraw-Hill			2000	
Whelan, R.J.	The Ecology of Fire	Cambridge University Press			1995	