



Course	CONSERVATION HYDROLOGY		
Module	Elective		
Degree	Degree in Forest Engineering and Natural Environment (Grado en Ingeniería Forestal y del Medio Natural)		
Plan	449	Code	42210
When taught	Second	Type/Category	Elective
Level/Cycle	Bachelor's degree	Year	4
ECTS Credits	3		
Language of instruction	English		
Lecturers in charge	1) Andrés Martínez de Azagra Paredes (CEU; PhD; Forest Engineer) 2) Juan Manuel Diez Hernández (CDOC; PhD; Forest Engineer) 3) Ana García Vega (Forest Engineer)		
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Department	Agricultural and forest engineering		

GENERAL OBJECTIVES

- 1) To learn useful issues related to Forest Hydrology in Mediterranean zones (in arid and semi-arid regions)
- 2) To learn the basic use of software tools such as: HEC-HMS (surface hydrology; hydrographs); MODIPÉ (rainwater conservation and harvesting in afforestation schemes); RUSLE (soil erosion by water); WEPS (wind erosion); PHABSIM (environmental river flows); ESCALAS (fishway design and modeling).

PROGRAMME TOPICS

1. Expanding knowledge in Forest Hydrology with HEC-HMS (design storms and hydrographs; reservoir and channel-flow routing) (0.5 ECTS)
2. Water conservation and runoff harvesting (software MODIPÉ); seedling microirrigation techniques (0.5 ECTS)
3. Soil erosion and soil conservation measures: case studies (software tools: RUSLE and WEPS) (1 ECTS)

4. Environmental river flows: case studies (0.5 ECTS)
5. Impacts of human's modifications of river hydrology on fish migration (software ESCALAS) (0.5 ECTS)

GRADING CRITERION

- Individual dossier with 5 assignments (5 p / 10) + Final exam (5 p / 10)
- If all assignments are graded as satisfactory, the direct approval is obtained (5). To raise the grade (> 5) the student can take the final exam.
- If the evaluation of the tasks is negative the student has to pass the final exam.
- The final exam consists of a series of theoretical-practical questions about the five topics mentioned above.

TEACHING RESOURCES

- Specific updated resources for each section will be available on the UVa-Moodle platform
- Bibliography to deepen each topic will be recommended at the time

