

SURFACE-WATER AND SUBTERRANEAN HYDROLOGY

Responsible professor: SANTIAGO GARCÍA LÓPEZ

Credits: 5 ECTS

Brief description of the contents:

- The water cycle
- Precipitation, evaporation, transpiration and evapotranspiration
- Surface runoff. Water capacity. Basin characteristics
- Analytical hydrology and flow calculation
- Statistical hydrology
- Hydrogeological properties: porosity and permeability
- Water in soil. Infiltration and water movement through a porous medium
- Aquifers. Functioning and research of subterranean waters
- Transportation through the saturated and unsaturated zone

Detailed programme:

LEARNING BLOCK	TOPIC OR ACTIVITY
B1	Introduction. The water cycle. Hydrology.
B2	Precipitation: measurement and rainfall data processing.
B3	Evaporation, transpiration and evapotranspiration: estimation methods.
B4	Case studies: estimate of contributions and effective rainfall.
B5	Surface runoff. Basin characteristics. Methods for measuring flow.
B6	Water in soil: infiltration.
B7	Statistical hydrology I.
B8	Statistical hydrology II. Case studies.
B9	Analytical hydrology and flow forecasting (I).
B10	Analytical hydrology and flow forecasting (II). Case studies.
B11	Hydrogeological properties of rocks: porosity and permeability.
B12	Case studies: hydrogeological properties.
B13	Water movement through a porous medium.
B14	Case studies: infiltration and movement through a porous medium.
B15	Aquifers I.
B16	Aquifers II: subterranean water research.
B17	Case studies: aquifers.
B18	Interaction between surface and subterranean waters.
AAD	Field trip: Sierra de Líbar mountain range, Montejaque dam, and Hundidero-Gato karst complex.

Evaluation system:

SYSTEM	WEIGHT
Final exam	40 – 60
Written essays	40 – 60
Presentation of exercises, topics and projects	0 – 30
Laboratory practices and/or practice report	0 – 30