

Under the framework of the FOWARIM project a 5-Day Course: “*Reducing groundwater pollution: Good management practices of nutrients and wastes*” took place at the University of Alicante (Alicante, Spain) from 9th to 13th January 2017.

The course consisted of theoretical and applied classes in campus and a field trip to the “Campo de Cartagena”. A summary of the course content is here below enclosed.

The technical field trip objective was to present the participants the integrated water management and agricultural practices taking place in the Campo de Cartagena (90 km South of the UA), one of the most important agricultural areas of Europe. The visit also included the participation of three stakeholders: the Farmers Association of Campo de Cartagena (Comunidad de Regantes del Campo de Cartagena; www.cccc.es), The Arco Sur Farmers Association (Arco Sur Mar Menor Comunidad de Regantes) and IGME (Geological Survey of Spain, www.igme.es). Several small brackish water desalination plants (groundwater) and wastewater treatment property of the stakeholders supplying irrigators with suitable water for their crops were visited.

In a hole, 16 participants, 8 from Malta and others from Spain, Colombia, Ecuador and Mexico (PhD students at the university) attended the course. The lecturers included 3 professors from the UA, and 2 from the UPC.

The syllabus of course content is:

- Lecture 1: *Groundwater*. Introduction; The hydrologic cycle. Parameters; Groundwater hydrology. Aquifers parameters; Flow in porous media: Darcy law; Water chemistry. Groundwater chemical characteristics. Chemical constituents. Isotopes; Groundwater quality and pollution process.
- Lecture 2: *The Alicante’s University Quaternary aquifer*; Geological context; Climatic characterization; Hydrogeology of the province of Alicante; The UA quaternary aquifer; Groundwater and Wells. In situ sampling and monitoring.

- Lecture 3: *The vadose zone*. Introduction; Water movement in the unsaturated zone; Richards equation; Water uptake by plants; Measuring and monitoring in unsaturated zone; Solute transport.
- *Field Trip*: Integrated water management and agricultural practices taking place in the “Campo de Cartagena”; Farmers Association of area; Arco Sur farmers association and IGME (Geological Survey of Spain).
- Lecture 4: *Drafting research proposal*. Research and innovation; Drafting research proposal; Scientific Method; References; Manage references with software.