

G-watCH
Groundwater and Global Change - Impacts and Adaptation

Duration

2 years

Course description

As the largest liquid freshwater reservoir on earth, groundwater has both a huge environmental and economic value, and will be an essential resource for adaptation to climate change and reduction of socio-economic vulnerability, particularly in regions where freshwater availability is scarce. Several factors foster the need for a more comprehensive and multidisciplinary educational groundwater programme. First, groundwater is a component of the water cycle interacting with all other components at various temporal and spatial scales. Second, groundwater systems are largely interdependent with socio-economic development. Third, climate change is foreseen to affect freshwater availability globally, with the Mediterranean considered as a hotspot. Fourth, important feedback mechanisms exist between groundwater (and its use), climate and global change, which vary in time and space. The JMD programme on Groundwater and Global Change - Impact and Adaptation (GroundwatCH) seeks to offer a distinctive curriculum built on the cornerstones of hydro(geo)logy, climatology, impacts and adaptation, within a framework of human pressures, global change and feedbacks, around the following academic focal areas: (1) General Hydrogeology; (2) Groundwater Data Collection, Interpretation and Modelling; (3) Climate Processes and Modelling; (4) Integrated River Basin and Water Resource Management; (5) Groundwater and Environmental Impacts; (6) Groundwater, Society and Policies; and (7) Groundwater, Climate and Global Change Impacts and Adaptation. With this curriculum GROUNDWATCH aims to address the current gaps in higher education with regard to the understanding of the interactions between groundwater, surface water, climate and global change, and how we need to consider and can benefit from these interactions when dealing with adaptation. Innovation and excellence in GroundwatCH is stimulated by the collaboration between three European HEIs, each with a distinct profile providing added value to the course, namely through: i) the environmental engineering perspective provided by IST Lisbon, as well as the know-how of the CVRM Research Centre in semi-arid hydrogeology; ii) the international experience of UNESCO-IHE in hydro(geo)logical research, education and capacity building in many countries across the globe; iii) the renowned expertise in climate and hydrology from TU Dresden with its well-matched combination of engineering, geo and natural sciences. GroundwatCH will provide outstanding opportunities to deepen cooperation between full partner HEIs and associated partners. Universities from China, Colombia, Morocco and Uganda are currently associated to the programme, participating in course dissemination and promotion, lecturing and hosting of Master students for thesis research. Over 15 non-academic partners are also already involved, essential for course development, optimizing learning outcomes, employability and integration of relevant research results.

Web site[TO BE DEFINED](#)**Partners**

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