**Freshwater Resources: Natural systems, Human Impact and Conservation**

**Coordinator: P. Gaganis**

**Name of lecturers:** Petros Gaganis, Ourania Tzoraki

**ECTS credits:** *2*

**Pre-requisites:** none

**Course e-learning site:** [https://aegeanmoodle.aegean.gr](https://aegeanmoodle.aegean.gr/)

**Aims, Objectives and Learning Outcomes**

The course aims to provide knowledge and understanding of the characteristics of surface water and groundwater natural systems (and their interaction), the impact of human activities on water availability/quality, and the strategies for water conservation and preservation. Topics covered include the: (i) factors and processes that control the water flow and availability in natural hydrosystems; (ii) human activities and their impact on surface water and groundwater ecosystems, water availability and water quality; (iii) natural processes and pollutant properties that control the fate of pollutants and the role and effectiveness of natural attenuation; (iv) prevention and conservation tools and strategies; and (v) sample applications using a conceptual hydrologic model and an interactive numerical groundwater model.

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| **Learning Outcomes** | **Assessment** | **Activities** | **Estimated Workload** |
| * understand the basic characteristics of surface water and groundwater systems and their interaction * understand the factors and processes that control the quantity and quality of flows in natural hydrosystems * be able to assess the effect of human activities and natural processes on water availability and quality in surface and groundwater systems. * understand the role of natural attenuation processes in water quality management * discuss water conservation tools and strategies * be able to use simple models | Students will be graded based on:   * Individual Assignment/report   30%   * Individual Final project   70% | In-class activities  (lectures, seminars)  Workshops  Self-study and independent work (reading, assignments, projects) | 18h  4h  28h |
| Total hours |  |  | 50h |

**Additional information including a full description of course assessments, schedule, and readings can be found in the full course syllabus located in at the course’s e-learning site.**