

#### 4 WATER RESOURCES MANAGEMENT AND AQUATIC SYSTEMS RESTORATION

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| <u>Teachers:</u> | Akratos C.   | Professor           |
|                  | Kagalou I.   | Professor           |
|                  | Spiliotis M. | Associate Professor |

The course covers the following topics:

1. Physical-chemical-biological processes in aquatic ecosystems
2. River basin management
3. Analysis of pressure in the catchment area/ uses and assessment
4. Indicators of the qualitative situation - Framework Directive 2000/60
5. Groundwater and the environment
6. Brackling of groundwater
7. Artificial groundwater enrichment
8. Water scarcity and water scarcity indicators, distinguishing between water scarcity and causes
9. Water demand.
10. Surface water potential of a water catchment area
11. Projects for the development of surface water resources
12. Comprehensive EDP with multiple criteria and choice of weights

Once the course is completed, participants will be able to:

- Knowledge of river basin management plans
- Understand water basin uses/pressures
- Apply quality assessment indicators
- Know technical and alternative rehabilitation methods
- Be aware of the principles of green infrastructure and nature-based solutions.
- Be aware of groundwater management issues
- Be familiar with techniques for treating groundwater brining
- Water scarcity and water scarcity indicators, distinguishing between water scarcity and causes
- Apply basic principles to the determination of water demand.
- Be able to estimate the surface water potential of a water catchment area and design a reservoir (from a hydrological point of view)
- Optimize the EDP
- Make complete EDP with multiple criteria and choice of weights, distance methods, entropy method and AHP for determining weights

Teaching Mode: 3 hours suggestion-exercises / week