

Code: 1698 Water Resources, Wastewater and Waste Management

Degree: 1st cycle – Environmental Engineering

Curricular Year: 3rd

Credits: 6 ECTS

Language: Portuguese/English

Prerequisites: Physics I

Responsible: Luís Alberto dos Santos Pereira

Other lecturer(s): Cláudia Saramago de Carvalho Marques dos Santos Cordovil

Web Site: <http://www.isa.utl.pt/home/node/4003>

**Semester Course: 2nd
Compulsory**

1. Contact hours:

Lecture/Practicals 70 Others 14 Total 84

2. Objectives:

To prepare the students for the integrated management of water resources, effluents and residues, environment impacts evaluation and their mitigation.

3. Programme:

1. Water and water resources: basic concepts
2. Non-conventional water resources
3. Human impacts on the water cycle and the hydrological balance
4. Relating water and land uses
5. Water saving and water conservation
6. Reuse and recycling: concepts and applications
7. Domestic, urban, agricultural and industrial water uses
8. Water demand and water consumption
9. Water use indicators
10. Water scarcity: natural and man induced
11. Balance availability-needs
12. Allocation of conventional and non-conventional water resources
13. Effluents and residues management
14. Use of effluents in irrigation: human health and environment impacts control
15. Water reuse for urban and recreational purposes: human health and environment impacts control
16. Recycling in industry and quality control
17. Integrated management of water, effluents and residues
18. Legislation
19. Monitoring

4. Bibliography:

Main Bibliography

Pereira, LS, Cordery, I, Iacovides, I, 2009. *Coping with Water Scarcity. Addressing the Challenges*. Springer, Dordrecht, 382 p

Other Bibliography

National Water Plans and Papers from international and national journals

5. Assessment:

Individual study relative to case studies and Final examination

6. Estimated Workload:

168	Hours
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7. Last Update:

5/5/2011
