Code: 1749 **Environmental Chemistry**
Degree: 2nd cycle – Environmental Engineering
Stream: all
Curricular Year: 1st **Semester Course: 1st**
Credits: 6 ECTS **Compulsory**
Language: Portuguese/English
Responsible: Amarilis Paula Alberti de Varennes e Mendonça
Other lecturer(s): Maria José Antão Pais de Almeida Cerejeira
Web Site: http://www.isa.utl.pt/home/node/3778

1. Contact hours
Lectures 35 **Practicals/Laboratory** 35 **Others** 14 **Total** 84

2. Objectives:

To introduce the importance of chemistry in environmental engineering. To expand basic chemical knowledge and to develop the capacity to understand the state of the art in chosen subjects.

3. Programme:

Surface Chemistry: Interfacial phenomena; adsorption at solid surfaces. Adsorption equilibrium. Adsorption isotherms. Speciation of heavy metals in environmental matrices.
Chemistry applied to Pesticides: Chemical groups and their use. Toxicological and ecotoxicological characterisation of several active ingredients and importance for human health and environment.
Physical-chemical properties and practical implications. Formulations and implications in the environment - study cases. Analysis of pesticides. Extraction, identification and quantification techniques. Pesticides included in lists of prioritary substances in the field of water policy.

Chemistry applied to the treatment of pollutants and development of clean technologies
Treatment of soils contaminated with heavy metals.
Treatment of organic pollutants.

4. Bibliography:

Main Bibliography

Powerpoint presentations available on the internet.
Scientific papers.

5. Assessment:

Continuous evaluation. A final exam for students that failed during term.

6. Estimated Workload:	168	Hours
7. Last Update:	20/7/2010	