

**POSTGRADUATE PROGRAMME CHEMICAL AND PROCESS ENGINEERING
“SUSTAINABLE PRODUCTION AND CONSUMPTION”**

ETSIIyT. Departamento de Ingeniería Química y Química Inorgánica.
Universidad de Cantabria. Curso 2006-07

ADVANCED SEMINAR “Chemical, Process and Environmental Engineering”

INVITED PROFESSOR: Evan Diamadopoulos, Department of Environmental Engineering. Technical University of Crete, Chania, Greece

DATES: 4-8 June 2007

OPEN CONFERENCE: ED-WAVE: An educational software package for Wastewater Treatment Technologies

LECTURE TOPICS:

- 1 Activated sludge treatment of municipal wastewater
- 2 Disinfection of water and wastewater

RECOMMENDED TEXTBOOKS

1. C.P. L. Grady, Jr. and H.C. Lim "Biological Wastewater Treatment" Marcel Dekker, Inc. (1980)
2. Metcalf & Eddy (Revised by G. Tchobanoglous and F.L. Burton) "Wastewater Engineering. Treatment, Disposal and Reuse" 3rd Edition, Mc Graw-Hill, Inc. (1991)
3. Metcalf & Eddy (Revised by G. Tchobanoglous, F.L. Burton and H. D. Stensel) "Wastewater Engineering. Treatment and Reuse" 4th Edition, Mc Graw-Hill, Inc. (2003)

LECTURE TOPICS

- 1 Activated sludge treatment of municipal wastewater**
 - 1.1 Defining pollution in water
 - 1.2 Organic pollution (BOD, COD, TOC)
 - 1.3 Kinetics of bacterial growth
 - 1.4 Monod kinetics of organic matter biodegradation
 - 1.5 Basic principles of biological wastewater treatment
 - 1.6 Activated sludge system analysis and design
 - 1.7 Sedimentation tanks design

2 Disinfection of water and wastewater

- 2.1 Basic definitions
- 2.2 Kinetics of disinfection
- 2.3 Disinfection with chlorine
- 2.4 Dechlorination
- 2.5 Ozon disinfection
- 2.6 UV disinfection

EXAMPLES

- 1. Examples of activated sludge plant design
- 2. Design of treatment plants using the ED-WAVE software
- 3. Examples of disinfection unit design