



Course Code CVEE-442	Course Title Wastewater Treatment	ECTS Credits 6
Department Engineering	Semester Fall, Spring	Prerequisites None
Type of Course Elective	Field Civil and Environmental Engineering	Language of Instruction English
Level of Course 1 st Cycle	Year of Study 4 th	Lecturer(s) Dr Michalis Loizides
Mode of Delivery Face-to-face	Work Placement N/A	Co-requisites None

Objectives of the Course:

The main objectives of the course are to:

1. Introduce the need for water quality control in a scientific context
2. Investigate the various constituents in wastewater
3. Expose students to the various chemical and biological treatment techniques employed to treat waste water for various uses
4. Provide an analysis of the characteristics of wastewater treatment processes

Learning Outcomes:

After completion of the course students are expected to:

- Acquire the knowledge for the need for water quality and how to achieve it
- Name and categorize the various processes used in water treatment
- Differentiate between the processes of treatment
- Determine the characteristics and the effect of the treatment processes

Course Contents:

- Intro to water supply and wastewater
- Physical, chemical and microbiological characterization of water; wastewater and air quality
- Reactor tanks
- Sedimentation, flocculation filtration
- Chemical treatment (softening, absorption and ion exchange)
- Conventional unit operations and processes for potable water
- Domestic wastewater and air quality control
- Handling of process sidestreams

Learning Activities and Teaching Methods:

Lectures, Discussion

Assessment Methods:

Homework, Project assignments, midterm exams, final exam.

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
George Tchobanoglous, Franklin L. Burton, H. David Stensel	Wastewater Engineering: Treatment and Reuse	McGraw-Hill Science/Engineering/Math	2002	978-0070418783

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
James R. Mihelcic , Julie B. Zimmerman	Environmental Engineering: Fundamentals, Sustainability, Design	Wiley	2009	978-0470165058
MWH	Water Treatment: Principles and Design	Wiley	2005	978-0471110187
Ronald L. Droste	Theory and Practice of Water and Wastewater Treatment	Wiley	1996	978-0471124443