



COURSE: Chemical Plants for Pollution Reduction

ACADEMIC YEAR: 2019/2020

TYPE OF EDUCATIONAL ACTIVITY: Basic

TEACHER: Marianna Caivano

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web: -

phone: 3488088902

mobile (optional):

Language: Italian

ECTS: 9

n. of hours: 81

Campus: Potenza
School: Engineering
Program: Environmental
Engineering

Semester: II

EDUCATIONAL GOALS AND EXPECTED LEARNING OUTCOMES

Know the problems related to environmental pollution, chemical-physical properties of environmental matrices and pollutants, design and management of chemical plants for pollution reduction, main plant configuration for pollutant removal.

PRE-REQUIREMENTS

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SYLLABUS

Environmental legislation. Environmental matrices and their interaction with pollutants. Classification of the main soil and water contaminants. Identification of the main sources of contamination. Chemical-physical properties of environmental matrices and pollutants. Direct and indirect survey techniques. Treatment plants for pollutants removal from environmental matrices (water and soil): soil vapor extraction, air sparging, reactive barriers, chemical oxidation, bioremediation, phytoremediation, heat treatments, electrochemical treatment, adsorption on activated carbon. Removal processes: chemical oxidation, biological oxidation, adsorption, filtration, stripping, electrosmosis, electrophoresis, electromigration. Risk analysis.

TEACHING METHODS

Theoretical lessons, Classroom tutorials, Laboratory tutorials.

EVALUATION METHODS

Oral examination

TEXTBOOKS AND ON-LINE EDUCATIONAL MATERIAL

Notes of the teacher

Bonifica dei siti contaminati, Luca Bonomo, McGraw-Hill

INTERACTION WITH STUDENTS

Office hours: the teacher is always available to meet the students. However, a notice could be needed via email.

Room 24, 5th floor, School of Engineering, University of Basilicata, Potenza.

EXAMINATION SESSIONS (FORECAST)¹

26/06/2020, 24/07/2020, 17/09/2020, 22/10/2020, 19/11/2020, 17/12/2020

SEMINARS BY EXTERNAL EXPERTS YES NO

FURTHER INFORMATION

¹ Subject to possible changes: check the web site of the Teacher or the Department/School for updates.