UNIVERSITÀ DEGLI STUDI DI PALERMO

DEPARTMENT	
ACADEMIC YEAR	
ANNO ACCADEMICO EROGAZIONE	
SUBJECT	
CODE	
SCIENTIFIC SECTOR(S)	
HEAD PROFESSOR(S)	CONTE PELLEGRINO Professore Ordinario Univ. di PALERMO
OTHER PROFESSOR(S)	
CREDITS	
PROPAEDEUTICAL SUBJECTS	
MUTUALIZATION	
YEAR	
TERM (SEMESTER)	
ATTENDANCE	
EVALUATION	
TEACHER OFFICE HOURS	**CONTE PELLEGRINO** Wednesday 10:00 12:00 Dipartimento di Scienze Agrarie, Alimentari e Forestali, v.le delle Scienze ed. 4 - primo piano stanza n. 140. Durante il semestre in cui il Prof. Conte e' impegnato con l'attivita' didattica, il ricevimento va concordato via e-mail

DOCENTE: Prof. PELLEGRINO CONTE

PREREQUISITES	knowledge of ceneral chemistry, organic chemistry, mathematics and physics are requested
LEARNING OUTCOMES	the course provides basic knowledge on the main environmental contaminants, their origin, and their fate in all the environmental compartments. In addition the course focuses on the main techiques for environmental remediation, and for the use and re-use of agricutlural and industrial biomasses
ASSESSMENT METHODS	oral examination
EDUCATIONAL OBJECTIVES	The course aims at the achievement of expertice on 1. characterization of contaminated sites in order to define the best remediation practice; 2. use and re-use of biomasses from wastes. Sustainable techniques are described among which fitoremediation and its possible uses is accounted for.
TEACHING METHODS	classroom lessons and lab exercise
SUGGESTED BIBLIOGRAPHY	Appunti dalle lezioni; AA.VV. La bonifica biologica di siti contaminati da idrocarburi, Hoepli Campanella, Conti, L'ambiente conoscerlo e proteggerlo, Carrocci Faber Adani et al., I metalli nell'ambiente, FrancoAngeli Baird, Chimica ambientale, Zanichelli Manahan, Chimica dell'ambiente, Piccin

SYLLABUS

Hrs	Frontal teaching
8	Relevance of soil in environmental equilibria Soil and environment. Agriculture and environment Acid rains and radioactivity plant nutrients and eutrophication, chemical products for agriculture and water potability
6	Use and re-use of biomasses Waste from water cleaning and solid urban wastes agro-food residues wastes from agriculture
6	Control of agricultural contamination: heavy metals Origin of pollution: natural sources, antropic activities heavy metals in soils
8	Organic agricultural contaminants pesticides and other persistant organic pollutants such as PCBs and PAHs
8	Soil remediation. How a remediation must be designed. Sampling methods. Sample preparation and storing. In situ and ex situ remediation. Biomimetic catalists
6	physical, chemical and biochemical soil quality indicators (an introduction)

Hrs	Workshops
18	Extraction of organic and inorganic soil contaminants Atomic adsorption spectroscopy gas chromatography BOD and COD evaluation evaluation of total organic carbon in solids and liquids evaluation of total nitrogen in solids and liquids nitrate quantification in solids and liquids quantification of greenhouse gases