

Short term Course Information

School	Health Promotion and health education
Department	Health
Name of Program	Soil pollution
Description (500 characters)	Polluted and degraded soils cost us millions of dollars every year. They limit productivity and present real human health and environmental risks. Knowledge of the behaviour of compounds in soil and their effects on organisms (human beings, plants, soil biota) is required in order to assess soil quality and to select proper soil remediation methods in case of severe pollution.
Keyword (3 Words)	Soil pollution, risk assessment, compound behavior
Complete Description	<p>The course focuses on soil risk assessment (soil quality evaluation) and the basic knowledge necessary to be able to apply a risk assessment procedure to polluted soil sites. Basic knowledge comprises compound behaviour in soils (speciation, transport, uptake) and effects on soil organisms (bioavailability, uptake, dose-response relationships, risk assessment).</p> <p>Objective:</p> <p>After successful completion of this course participants should be able to:</p> <ul style="list-style-type: none"> • recognize and describe the impact of soil pollution on the environment • Analyse and describe compound behaviour in soils • explain and describe essential elements of a soil quality evaluation procedure • apply a soil risk assessment to a contaminated soil site • response experiments including sampling, chemical analysis of soil and plant samples, • data processing, simple statistical data handling (linear regression) and report writing <p>Lectures</p> <p>The lectures cover the following subjects:</p> <ul style="list-style-type: none"> • The behaviour (especially speciation, transport and uptake) of contaminants in soil. Much attention will be paid to the various distribution processes (adsorption and desorption, dissolution and precipitation, volatilization and condensation) and transport in water and gas phase. This will be elaborated for compounds like heavy metals, volatile organic chemicals, cyanide, nitrogen and phosphate. • Effects of contaminants on organisms (plants and soil biota); particular attention will be paid to the determination of dose-response relationships and the concept of bioavailability. • Pollution phenomena like soil acidification, accumulation in soils, leaching of contaminants in soils, application of organic waste materials to soils, uptake of contaminants by plants and soil organisms, exposure to human beings, spreading of contaminants via groundwater.

	<ul style="list-style-type: none"> • Policy aspects: choice and determination of soil quality criteria (soil standards) as part of a soil quality evaluation procedure • Risk assessment procedure for soil and groundwater; analysis of exposure pathways. Analysis of actual risks for human beings, eco systems and groundwater spreading. - Applicability of various soil remediation techniques
Program coordinator	Phone :00985131892201
	Fax :
	Mobile :00989155026195
	Email :peymann@mums.ac.ir
	Address : Department of Health Education and Health Promotion, Faculty of Health, Mashhad University of Medical Sciences, Mashhad, Iran
	Contact Person Name : Dr Nooshin Peyman
Length of Training	8 sessions
Language Requirement	Farsi, English
Admission Requirement	The course is designed for Master PhDs students, academic staff, national and international environmental researcher and their counterpart advisers and assistants who are involved in the implementation of monitoring program.
Tuition Fee *	1000 US Dollar