

Modeling Fate and Transport of Environmental Pollutants

Overview

Environmental modelling relies heavily on system-based approach to generalize environmental processes to make spatial and temporal predictions about the environmental fate and transport of anthropogenic pollutants. Environmental system processes are difficult to understand, primarily due to the enormous complexity and interrelationships involved. This problem is further compounded by the fact that environmental processes often do not remain restricted to one environmental media. Environmental persistence and mobility of various organic pollutants in multi-media (surface water, air, soil, and groundwater) environments requires modelling to predict the fate and transport of environmental pollutants.

Pure mathematical modelling can be difficult to understand if the developed model is not simulated and tested for different situations. Mathematical models without simulation may not be effective and may not provide an enhanced learning experience to students. Modelled processes will be simulated using STELLA software. The objective of this course is to demonstrate the effectiveness of mathematical modelling approach through model development, simulation and validation. This course demonstrate the effectiveness of modelling of selected environmental processes such as abiotic degradation (hydrolysis, photolysis and sorption), transformation and deposition of gaseous pollutants, transformation and metabolites rate kinetics. The modelled environmental processes will be tested for statistical validity through three different statistical approaches.

Modules	A: Basic Concepts of Environmental System Modelling:6 June to 14 June,2016
	B: Mathematical Modelling of Fate and Transport of Organic Pollutants in the Environment, Model Development and Simulation:15 June to 27 June,2016
You Should Attend If...	<ul style="list-style-type: none"> ▪ you are a civil/environmental scientist or engineer interested in understanding how pollutants behave in the environment ▪ you are a student or faculty from an academic institution interested in applying environment models to predict the fate and transport of pollutants ▪ you are working for an environmental regulatory agency and would like to use risk based corrective action protocol using fate and transport models
Fees	<p>The participation fees for taking the course are as follows:</p> <p>Participants from abroad : US \$500/-</p> <p>Participants from India:</p> <p>Industry/ Research Organizations/ Academic institutions: INR 20, 000/-</p> <p>Students: INR 3,000/-</p> <p>The above fee include all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hr free internet facility. The participants will be provided with accommodation on payment basis.</p>

The Faculty



Dr. Sudarshan Kurwadkar is currently an Assistant Professor of Civil and Environmental Engineering at the California State University – Fullerton, California, USA. His research interests are in understanding the fate and transport of emerging contaminants such as pharmaceuticals, perfluorinated compounds and insecticides in the environment; sorption and degradation kinetics of organic contaminants, water quality, storage and disposal of hazardous wastes, and environmental engineering education.



SudhaGoel is currently Associate Professor in Indian Institute of Technology Kharagpur. Her teaching and research interests include solid and hazardous waste management, water quality and treatment, environmental impact and risk assessments, and energy issues.

Course Co-ordinator

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