

Urban Air Pollution, Human Exposure Assessment and Public Policy

Overview

Air quality and associated health effects in urban area is a major issue in both developed and developing countries. Human exposure to air pollutants result in many short-term and long-term health effects ranging from eye irritation to chronic conditions like cancer. Air pollution is one of the contributing factors in the rise of cardiovascular and lung diseases in many countries. Hence, maintaining an acceptable air quality is important in the urban environment. Technology, and public policy interventions therefore play an important role in promoting better air quality in urban setting. The course will provide an exposure to urban air pollution phenomenon, air pollution monitoring, emissions inventory, potential health impacts, modelling and control technologies and public policy interventions, and international conventions for sustainable air pollution management, particularly in the context of urban hotspots of India. The course will consists of invited lectures and in class assignments, case study analysis, and field surveys to measure personal exposure to air pollutants. This course is organized in the form of 19 hours of lectures, 6 hours tutorials and 4 hours field survey spread over ten days structured as ten modules. Module 1 and 2 covers basics of urban air pollution, basics of air pollution, sources, types of air pollutants and health impacts. Module 3 and 4 provides linkage between air pollution and climate change, disease burden, environmental and health data base, policy challenges and options and personal exposure monitoring. Module 5 and 6 focuses on field survey, data collection and personal exposure assessment. Module 7 and 8 discuss air pollution and health risk modelling (hands on training), indoor air pollution and health risk assessment. Module 9 exclusively focuses on public policies for air pollution mitigations. Module 10 covers air pollution and international conventions and course examination. Course participants will learn these topics through lectures, tutorials and assignments. A graded examination will be conducted on the last day of the course.

Course structure	<p>Lectures and tutorials : 7-17 October, 2019 Field Survey : 12, October 2019 Discussion of assignments : End of each session Examination : 17, October 2019</p> <p style="text-align: center;"><i>Number of participants for the course will be limited to forty (40).</i></p>
You Should Attend If...	<ul style="list-style-type: none"> ▪ Undergraduate or a Post-graduate student of Civil, Chemical and Mechanical Engineering, Biotechnology, Environmental and Atmospheric Sciences ▪ Professionals from research organizations, industries, consultancy firms. ▪ Faculty members from recognized engineering colleges and universities
Registration Fees & Course Materials	<p>Course Registration Fee: Students : Rs. 1000/- Faculty members from Academic Institutions: Rs. 10,000/- Professionals from Industry/ Research Organizations: Rs. 20,000/-</p> <p>The above fee include all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hr free internet facility.</p> <p>Modes of payment: <u>Online transfer:</u> Account Name: CCE IIT Madras I Acc. No: 36401111110 ; Branch: SBI, IIT Madras Branch, Chennai; IFSC Code: SBIN0001055; Swift Code: SBININBB453 Note: The participants should be mentioned the purpose of GIAN while the transaction and have to send the transaction details to cceoffie@iitm.ac.in OR Demand draft in favour of “CCE IIT Madras” payable at Chennai. The demand draft is to be sent to the course coordinator at the address given below.</p>
Accommodation	<p>The participants will be provided with accommodation on payment basis subject to availability. Request for hostel accommodation may be submitted through the link: http://hosteldine.iitm.ac.in/iitmhostel</p>
Registration Procedure	<p>Please follow the following steps for the registration:</p> <ol style="list-style-type: none"> 1. Go to GIAN website (http://www.gian.iitkgp.ac.in/GREGN/index) First time users need to register and pay a one-time fee of INR 500 / 2. Enroll for the course: Urban Air Pollution, Human Exposure Assessment and Public Policy. Once you enroll for the course, an Enrollment/Application number will be generated, and the course coordinators will be notified.

The Faculty



Peter Orris MD, MPH, FACP, FACOEM is professor of Environmental and Occupational Health Sciences at the UIC School of Public Health and chief of Occupational and Environmental Medicine for the University of Illinois Hospital and Health Sciences System. He had been an attending physician in the Divisions of General Internal Medicine and Occupational Medicine at the Stroger Hospital of Cook County (formerly Cook County Hospital). He

holds professorships as well in Internal Medicine at Rush University Medical College and Preventive Medicine at Northwestern University Feinberg School of Medicine. His research and teaching have focused on international health care systems, occupational and community effects of toxic chemicals, and more recently sustainable health care and climate change. He has published extensively in his field and served as an adviser to many labor unions, corporations, UN and government agencies, as well as nonprofit groups.



Shiva Nagendra, SM is presently working as Professor in Department of Civil Engineering, Indian Institute of Technology Madras, Chennai, India. He has more than 20 years' research experience mainly in the field of air quality monitoring, modelling, management, control and policy implications. He has published more than 75 research publications in international and national refereed journals, one reference book,

and 100 papers in conferences. He is coauthor of the book titled '**Artificial Neural Networks in Vehicular Pollution Modelling**' published by Springer-Verlag, Germany (SCI-41, ISBN-10: 3-540-37417-5). He has been part of numerous grants involving multiple national and international partners. Much of his research interests focus on air quality management which includes sensors for air quality monitoring, modelling of real time exhaust emissions, source apportionment, modelling, design and development of emission control system, development of air quality management system, personal exposure monitoring, environmental impact assessment, outdoor-indoor air pollution relationships and indoor air quality management including design and development of indoor air purifier. He is a professional member of several technical institutions and organizations of India.



Muraleedhran, VR is currently working as an Professor in the Department of Humanities and Social Sciences, Indian Institute of Technology Madras. His research interest includes Healthcare Economics and Policy; History of Healthcare in South India; Technology and Public Policy. He served as member of sub-groups on Health, Planning

Commission of India, during the preparation of 11th and 12th Five Year Plans.

Course Coordinator

Prof. Shiva Nagendra, SM
Phone: (044) 2257 4290
E-mail: snagendra@iitm.ac.in

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