

Water Quality and Aquatic Toxicology

Overview

Engineers and other applied scientists across India currently face the major challenge of improving water quality on a national scale. Water quality is generally poor, which is often due to inadequate waste management, loosely regulated industrial pollution, and due to overpopulation. Consequently, the government has established water quality regulations and guidance, which are targets to achieve wider and better quality water on local and national levels. Further, waste treatment options are available, which can effectively treat wastes, but they are often poorly managed or not appropriate to truly improve water quality at levels that will make a difference to community and environmental health.

Disconnection between developing viable technical solutions for India and improving water quality partially results from engineers and technologists not fully understanding what really controls water quality. The basis of regulatory water quality guidance also is not fully understood, especially linkages among contaminants and what defines “net quality” of a water in terms of different health and toxicological end-points. The purpose of the class is to teach engineers and applied scientists about the underpinning ecology of water quality, especially in large rivers like the Ganga. With this understanding, more sensible technical (and social) solutions can be developed and implemented to improve water quality in a more targeted and sustainable manner.

Course participants will learn these topics through lectures and interactive group tutorials. Case studies and short assignments that are relevant to India will be included to help develop new skills, especially related to assessing risk.

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| Module | February 5 to 17, 2018 Number of participants for the course will be limited to fifty. |
| You Should Attend If... | <ul style="list-style-type: none">▪ You are in your fourth or fifth years of undergraduate study or a graduate student (BTech/MSc/MTech/PhD), or Faculty from reputed academic institutions.▪ You are an engineer, scientist, or a researcher from industry, service, or a government organization, including R&D laboratories.▪ Want to understand the biological, chemical, physical and ecological basis of water quality, including balances and imbalances that result in better versus poorer quality water. |
| Fees | <p>The participation fees for taking the course is as follows:</p> <p>Students from other Academic Institutes : Rs. 7,500 Faculty members from other Academic Institutes : Rs. 15,000 Professionals from Industry/ Research Organizations : Rs. 20,000 Participants from abroad : US \$500</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> <p>Limited accommodation in the guest houses or student hostels may be available on payment basis. Traveling, boarding, and lodging expenses should be borne by the participants</p> |

The Faculty



Prof. David Graham is in the School of Engineering at Newcastle University, United Kingdom. His research interests include environmental engineering, applied microbiology, applied biochemistry, ecological theory in environmental engineering, and ecotoxicology.



Prof. Alistair Boxall is in the Environment Department at York University, United Kingdom. His research work focuses on understanding the fate, transport and environmental and human health effects of emerging environmental contaminants (including human and veterinary medicines, degradates and nanomaterials).



Prof. Z. A. Shaikh is working in the Department of Biochemical Engineering and Biotechnology, IIT Delhi, India. His research interests include Bioenvironmental Engineering, bioreactor design, fate and treatment of emerging contaminants; antibiotic resistance in the environment.

Course Co-ordinator

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