

Managing Floods and Droughts in a Changing Climate

Overview

Floods are caused by extreme hydro-meteorological actions while their evolution depends on geomorphologic agents, such as permeability and soil stability, vegetation cover, and the geometric characteristics of the river basins. As a consequence of climate change, the vulnerability of communities to floods has increased in most parts of the world, including India. Urban expansion and consolidation, changing demographic features within floodplains, changes in flood regime as a result of climate change, and human intervention in the ecological system are the major factors that lead to increased exposure of communities to flood risk. The occurrence of extreme precipitation is a major impact of climate change that leads to increase in the magnitude and frequency of extreme events such as droughts and floods. Increase in the total amount, frequency and intensity of precipitation will affect the timing and magnitude of runoff, but its decrease will cause drought like situations. It is expected that future climatic shifts would cause a great variation in the water accessibility in different regions. As a result, almost every facet of human life, including agricultural productivity, wildlife and fish management, energy use, industrial and municipal water supply, and flood control would be affected. Modeling and management of flood and drought risks is a crucial part of integrated water resources development. Hydrological modeling can, play a vital role in developing effective adaptation and mitigation strategies to counteract the adverse impacts of climate change.

Modules	Duration: January 15 - 20, 2018 Venue: Department of Civil Engineering Jamia Millia Islamia (Central University) New Delhi, India Modules: Six
You Should Attend If...	<ul style="list-style-type: none"> ▪ you are a civil or environmental engineer or research scientist/executive interested in flood and drought management and modeling, and climate change issues. ▪ you are a faculty interested in hydrological modeling, flood and drought management and climate change impacts evaluation techniques ▪ you are a student interested in learning how to conduct flood and drought modelling and develop strategies for their mitigation
Fees	The participation fees for taking the course is as follows: Participants from abroad : US \$250 Industry/ Research Organizations: ` INR 3000 Faculty from Academic Institutions: ` INR 2500 Students/Research Scholars INR 1500 The above fee includes all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hour free internet facility. The accommodation will be provided to the participants on payment basis.

Foreign Faculty



Hans Christian Ammentorp has more than 30 years of professional experience in water resources management. Over the years, he has contributed to a long range of projects in Europe, Africa, and the Asia-Pacific region, typically within flood management planning, development of flood forecasting systems, Integrated Water Resources Management, or establishment of Decision Support for water resources management. He has held several team leader positions for DHI, and was Head of the Water Resources Department of DHI Malaysia during 2013 and 2014, also supporting other DHI offices in the South East Asia region. His professional career has been at DHI since 1982 except for two years as Associate Professor at the Asian Institute of Technology in Thailand during 1994-1996.

Host Faculty



Azhar Husain is associate professor with the department of civil engineering at Jamia Millia Islamia (Central University) in New Delhi. He obtained his Masters degree in Hydraulics and Flood Control from Delhi Technological University (formerly Delhi College of Engineering) in 1997. He obtained his doctorate in water resources management from Jamia Millia Islamia in 2010. His research interests include evaluation of climate change impacts on water resource systems, flood modelling and management under the influence of climate change, and optimal operation of reservoir systems.



Mohammed Sharif is Professor with the Department of Civil Engineering at JamiaMilliaIslamia (Central University), New Delhi. Prof. Sharif received his PhD from the University of Edinburgh in1999. He has more than 20 years of experience in teaching, and research in the field of water resources management. He has gained considerable international experiencein Canada, UK, and Thailand. His research interests include hydro-climatology, flood modelling, climate change impact studies, water resources management, river engineering and management, and optimal operations of reservoir systems.

Course Co-ordinators

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