

Report on
TEQIP Sponsored Short Term Course on
“Recent Advancements in Water Resources and Environment Engineering”
IIT Indore, 22nd April – 27th April, 2019
Course Coordinator: Dr. Manish Kumar Goyal
Course Coordinator: Dr. Kiran Bala

The objectives of this short-term course are to discuss the latest findings about water resource and environment, to create awareness regarding the sustainable management of the water resources and environment, to identify suitable measures for the effective development, protection, and management of water resources and environment. Moreover, the course disseminates this information and motivate researchers in these and allied fields in institutes spread across the country to get involved in this initiative. The relevance of the proposed course is highlighted through a series of lectures delivered by prominent industry and academia experts. The day wise activities during the course are presented below.

Day 1 (22nd April 2019, Inauguration): Course coordinators Dr. Manish Kumar Goyal (Associate Professor, Discipline of Civil Engineering, IITI) and Dr. Kiran Bala (Associate Professor, Discipline of Biosciences and Biomedical Engineering, IITI) opened the program “Short term course on Recent Advancements in Water Resources and Environment Engineering” with the welcome address. In addition, Dr. Hem Chandra Jha (Assistant Professor and HOD, Discipline of Biosciences and Biomedical Engineering, IITI) welcomed all the participants and delegates to the short-term course.

Day 1 (22nd April 2019): In the first lecture Prof. V. V. Srinivas (IISc, Bangalore) addressed the prediction of hydro-meteorological variables over ungauged basins and discussed about its need, scope for future initiatives, Prof. Vinod Tare (IIT Kanpur) discussed about the integrated water management by giving the example of different river basins in India. In the afternoon session, all the participants visited the lab of Dr. Kiran Bala from the Discipline of Biosciences and Biomedical Engineering. In the last session of day 1, Dr. Manish Kumar Goyal demonstrated the hydrological modelling using Soil and Water Assessment Tool (SWAT) over a selected watershed.

Day 2 (23rd April 2019): Dr. Hem Chandra Jha discussed about the status of the current water pollution and stated different effective water pollution strategies to combat the water pollution. Dr. Kiran Bala deliberated the use of algae as a solution to the pollution problems. In the afternoon session, Dr. Manish Kumar Goyal addressed the resilience ecosystem and the hydrological system to the adverse impact of climate change.

Day 3 (24th April 2019): Prof. Vinod Garg stated the current water pollution status of the country and discussed some of the effective strategies to overcome the issues. In addition, Prof. Garg presented the baseline studies in the vicinity of nuclear power project. Dr. Parashram Shirage presented the application of nanotechnology in environmental engineering. Finally, Dr. Manish Kumar Goyal presented the non-stationary analysis as an advancement in water resources engineering and applications to the flood and drought over India.

Day 4 (25th April 2019): Dr. Harinarayan Tiwari, who has more than 10 years of experience in hydrodynamic modelling, demonstrated river flow analysis and flood plain modelling software packages. Hands on of the software packages was carried out by the participants. In the afternoon, session, Dr. Manish Kumar Goyal discussed about the copula application in effective modelling of the hydro-climatological variables by undertaking the whole India as a case study.

Day 5 (26th April 2019): A field visit was organized to Omkareshwar Dam, which is 63 km distance from the institute. The Omkareshwar Dam is a gravity dam on the Narmada River just upstream of Mandhata in Khandwa district, Madhya Pradesh, India. It is named after the Omkareshwar temple located just downstream. The dam was constructed between 2003 and 2007 with the purpose of providing water for irrigation of 132,500 ha (327,000 acres). An associated hydroelectric power station located at the base of the dam has an installed capacity of 520 MW.

Day 6 (27th April 2019): Dr. Vikrant Tyagi presented regarding different mechanisms, measures, and efforts to clean and rejuvenate the Ganga. In addition, he briefly discussed different policy measures for the same. As a concluding lecture to the short-term course, Dr. Vikas Choudhry presented the river revival technique.

Day 6 (27th April 2019, Valedictory): The certificates were distributed among the participants on the successful completion of the short-term course. At last with a group photo, program was closed.

The list of the presentations by the delegates with affiliation

Sl. No.	Name	Affiliation
1	Dr. Manish Kumar Goyal	IIT Indore
2	Dr. Kiran Bala	IIT Indore
3	Prof. V. V. Srinivas	IISc, Bangalore
4	Prof. Vinod Tare	IIT Kanpur
5	Dr. Vikas Choudhry	SSGVAAP, Indore
6	Prof. Vinod Garg	Central University of Punjab
7	Dr. Vikrant Tyagi	Project Coordinator, India EU Water Partnership
8	Dr. Harinarayan Tiwari	Floodkon
9	Dr. Parashram Shirage	IIT Indore
10	Dr. Hem Chandra Jha	IIT Indore

The list of the participants with Institute

Sl. No.	Name	Institute
1	Syed Nasir U Din	Panjab University, Chandigarh
2	Priyanka	Panjab University, Chandigarh
3	Neetu Tyagi	State Climate Change Centre, Uttarakhand
4	Tripti Jayal	State Climate Change Center, dehradun, uttarkhand
5	Bhagwat Saran	G.B.P.U.A&T PANTNAGAR
6	Daniel Prakash Kushwaha	G.B.P.U.A&T PANTNAGAR
7	Manish Kumar	G.B.P.U.A&T PANTNAGAR
8	Anuradha Kumari	G.B.P.U.A&T PANTNAGAR

9	Shreya Nivesh	G.B.P.U.A&T PANTNAGAR
10	Tarate Suryakant Bajirao	G.B.P.U.A&T PANTNAGAR
11	Mrinal Kashyap	IIT Indore
12	Sushma Tamta	G.B.P.U.A&T PANTNAGAR
13	Basant Ballabh Dumka	G.B.P.U.A&T PANTNAGAR
14	Ronak Mahajan	SGSITS INDORE
15	Anita	G.B.P.U.A&T PANTNAGAR
16	Harish Kumar Dwivedi	IPS ACADEMY INSTITUTE OF ENGG. & SC.
17	Nupur Verma	Madhav Institute of technology and science
18	Abhijeet Keskar	SVNIT Surat
19	Priya AK	KPR INSTITUTE OF ENGINEERING & TECHNOLOGY
20	Kalaivani.V	KPR INSTITUTE OF ENGINEERING & TECHNOLOGY
21	Chetan Sharma	MITS, Gwalior
22	Ms. Shikha Agnihotri	R.K University, Rajkot (Gujarat)
23	Dr. Hardeep Rai Sharma	Institute of Environmental Studies, Kurukshetra University, Kurukshetra, Haryana
24	Sandarbh Agrawal	JEC Jabalpur
25	Waqar Ul Hassan	IIT INDORE
26	Neeraj Mishra	IPS ACADEMY INSTITUTE OF ENGG. & SC.
27	Tanushree Sinha	IPS ACADEMY INSTITUTE OF ENGG. & SC.
28	Annadasankar Roy	BARC-Mumbai
29	Sitangshu Chatterjee	BARC-Mumbai
30	Atreyee Ghosh	IIT INDORE
31	Kanchan Samadhiya	IIT INDORE
32	Jew Das	IIT INDORE
33	Srinidhi Jha	IIT INDORE
34	Vikas Poonia	IIT INDORE
35	Saket Dubey	IIT INDORE
36	Jhिलam Sinha	IIT INDORE
37	Nikhil Kumar	IIT INDORE



Inauguration of the short-term course by the Coordinators and HOD of Biosciences & Biomedical Engineering, IIT Indore



During the course work



During the field visit to Omkareshwar Dam with the participants



Group photo with the participants after the valedictory