

FIVE Day FDP
on
Modelling of Water Resources Systems
(1st -5th November 2021)

Background:

The modelling approach can be of great help in predicting the behaviour or performance of proposed system infrastructure designs or management policies. For the last couple of decades, many advances have been made in modelling the engineering, economic, ecologic, hydrologic, and sometimes even the institutional or political aspects of large complex multipurpose water resource systems. Applications of models to real systems have improved our understanding of such systems and hence have often contributed to improved system design, management, and operation. As the water resources systems are complex, models are always based on numerous assumptions or approximations. A water resources model simulates the sources of water supplies and the moving of water around a water network over time, typically using estimates of water demand and water availability in rivers and groundwater. However, although these models look simple structure it involves a lot of

complexity. Taking into consideration the vast opportunities and challenges in Water Resources Modelling, the department is organizing a five-day online faculty development programme on "Modelling of Water Resources Systems" from November 1 to 5, 2021.

Objectives:

- To understand the basic concepts of hydrological models.
- To introduce various open-source modelling software for water resources.
- To impart practical knowledge about water resources modelling by using the SWAT and WEAP models.

Who Should Attend?

Faculties, Scientists, and Research Scholars, Students of Universities, NGOs and industry personnel are eligible to register and are requested to take advantage of the online training course.

Learning outcomes

After successful completion of this faculty development program, the candidates will have a better understanding of simulation of hydrological processes and water allocation strategies in water scarce river basin.

Further, the candidate will be familiar with the application of a couple of open-source water resources software. Finally, the candidate will be exposed to modelling with spatial data set and its preparation.

Compulsory assignments: Tutorials/Quizzes

Prerequisite: The program requires basic knowledge of water resources and geographical information systems (GIS).

Instructions

- ✓ Daily lectures and hands-on practice through the Webex/google meet platform will be conducted along with online discussions and assignments.
- ✓ The link ID and, password for joining the online sessions will be communicated through the WhatsApp group of the selected candidates.
- ✓ Participants who attend more than 75% time of the session will be marked present and attendance will be considered for the session.
- ✓ Certificates will be issued to those participants who will complete all online sessions, quizzes, assignments and 75% attendance.

About The Department:

The Department of Water Engineering and Management came into existence in July 2010 under the School of Natural Resource Management and now under the School of Engineering and Technology. The department was earlier offering a 5-year integrated M.Tech. and Ph.D. program in Water Engineering and Management. We have started two years M.Tech. in WEM since 2017. With a mission to encourage an innovative approach of thinking, the department is developing the capacity of highly skilled manpower. Also, our faculties with exceptional academic experience are dedicated to producing world leaders in the field of Water Engineering and Management.

CHIEF PATRON:

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Vice-Chancellor
Central University of Jharkhand, Ranchi,
India

PATRON:

Prof. S.L Harikumar
Registrar
Central University of Jharkhand

CONVENOR:

Prof. H. P. Singh
Dean, School of Engineering and Technology
Central University of Jharkhand, Ranchi

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One Week FDP
on
Modelling of Water Resources Systems
(1st -5th November 2021)



Sponsored by
AICTE Training and Learning (ATAL)
Academy Programmes



Organized by
Department of Water Engineering and
Management
<http://www.cuja.ac.in/WEMDepartment.php>
Central University of Jharkhand (CUJ)
Ratu-Lohardaga Road, Ranchi,
Jharkhand

**FIVE Day Workshop
on
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1. The FDP will be organised online using Google Meet.
2. The session of the Five Day FDP will be live-streamed on YouTube and Google as well.

Registration link:

The link is available on the AICTE Training and Learning (ATAL) Academy Programmes

<https://www.aicte-india.org/atal>

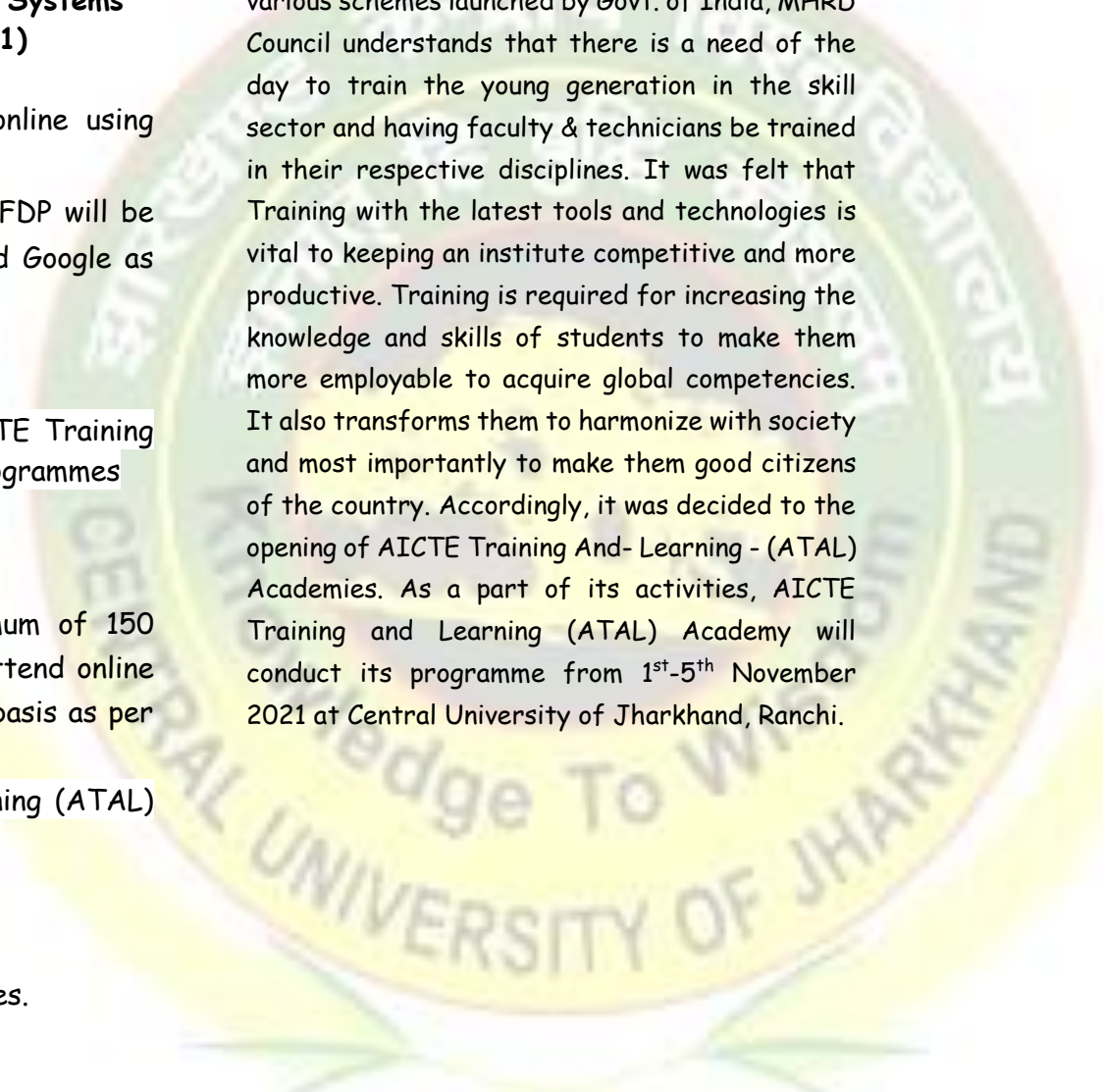
Number of Candidates: Maximum of 150 participants may be allowed to attend online FDP on a first come first serve basis as per the selection rules of AICTE.

About AICTE Training and Learning (ATAL) Academy

Selection Procedure:

As per the AICTE guidelines.

AICTE is committed to the development of quality technical education in the country by initiating various schemes launched by Govt. of India, MHRD Council understands that there is a need of the day to train the young generation in the skill sector and having faculty & technicians be trained in their respective disciplines. It was felt that Training with the latest tools and technologies is vital to keeping an institute competitive and more productive. Training is required for increasing the knowledge and skills of students to make them more employable to acquire global competencies. It also transforms them to harmonize with society and most importantly to make them good citizens of the country. Accordingly, it was decided to the opening of AICTE Training And- Learning - (ATAL) Academies. As a part of its activities, AICTE Training and Learning (ATAL) Academy will conduct its programme from 1st-5th November 2021 at Central University of Jharkhand, Ranchi.





Central University of Jharkhand, Ranchi-835205

Department of Water Engineering and Management

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on

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Programme Schedule



Date	Name of Resource Person	Topic	Time
01.11.2021	Prof. Ajai Singh, Dept. of Water Engineering and Management, Central University of Jharkhand, Ranchi	Overview of Hydrological Modelling of Water Resources Systems	10-12 noon
	Dr. Sangam Shrestha, Professor, AIT, Thailand	Catchment hydrology	12noon- 2 pm
		Break	
	Prof. Ajai Singh	Overview of SWAT Model	3-5 pm
02.11.2021	Prof. Ashok Mishra, AgFE Department IIT, Kharagpur, West Bengal	Case study with SWAT model and evaluation criteria	10–12 noon
	Prof. Ajai Singh	Model evaluation criterion	12noon-2 pm
		Break	
	Dr. Birendra Bharti, DWEM, CUJ, Ranchi	Hands-on with SWAT Model	3-5 pm
03.11.2021	Kirtan Adhikari College of Science and Technology Royal University of Bhutan, Bhutan	River Network Modelling in HES-RAS modelling	10-12 noon

	Dr. Pratibha Warwade, DWEM, CUJ, Ranchi	Preparation of spatial input for hydrological models	12-2 pm
		Break	
	Dr. P. K. Parhi DWEM, CUJ Ranchi	Hands-on with HEC RAS modelling	3-5 pm
04.11.2021	Mr. Mani Goyal, DHI India, New Delhi	2D Flood Modelling using MIKE+(MIKE FLOOD)	10 am-12 noon
	Mr. Pratik Singh Thakuri Centre of Research for Environment, Energy and Water (CREEW), Nepal	Hydrological models as a tool for water resources management	12-2:00 pm
		Break	
	Mr. Mani Goyal, DHI India, New Delhi	Hands-on with MIKE FLOOD	3-5 pm
05.11.2021	Prof. Ajai Singh, Dept. of Water Engineering and Management, Central University of Jharkhand, Ranchi	Introduction to WEAP Model	10-12 pm
	Prof. Prabhat Kumar Singh Dikshit Department of Civil and Infrastructure Engineering, IIT BHU, Varanasi	Hydrological and Sediment Yield modeling and Its Impact on Climate Change	12-2 pm
		Break	
	Ms. Pratibha Kumari DWEM, CUJ, Ranchi	Hands-on with WEAP Model	3-5 pm
	Feedback and Valedictory function		5-5.30 pm