Chief Patron:
Prof. Banshidhar Majhi
Vice Chancellor, VSSUT

Patron:
Prof. S.S. DAS
Head of the School of Infrastructure and Planning

Coordinator:
Dr. Anil Kumar Kar, Professor, Department of Civil Engineering, VSSUT

Co-Coordinator:
Miss Kirtisuta Bhoi, Assistant Professor, Department of Civil Engineering, VSSUT

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Scan to register

Topics & Resource Persons

1. **Forecasting & augmentation of cyclonic disaster**
2. **Climate change modeling with respect to extreme hydrological events**

Dr Sarat Ch Sahu (Ex. Regional Director IMD BBSR, Director of SOA Center for Enviorment & Climate BBSR ,Odisha)

Conceptualization, design & construction of plastic concrete diaphragm wall as a seepage barrier
Dr. Mahendra Kumar Bhuyan (Retired EIC DoWR Department of WRE, BBSR)

Future of GIS in the context of estimation of Water Resources and resolving the corresponding disputes
Er. Ashutosh Dash (EIC cum Special Secretary -II Interstate Issue, Govt. of Odisha DoWR)

Monitoring of Dam, Performance: Instrumentation and Measurement
Er. Jyotirmaya Behera (Superintendent Engineer Additional Spillway Division ,Burla, Sambalpur)

AI Technique applications in Water Resources and Smart irrigation
Dr. Ashutosh Rath (Professor Civil Engineering Silicon Institute of Technology Sambalpur Odisha)

Understanding the typical aspects river morphology and its implications
Prof. Kishanjit Kumar Khatua (Dept. of Civil Engineering, NIT Rourkela)

Utility of satellite imagery in civil engineering applications
Dr. Pradipta Mishra (Ex-Scientist F ORSAC, BBSR)

Critical Evaluation of water, air and noise pollutions and its impacts
Prof. Rakesh Roshan Dash (HOD Civil Engineering VSSUT, Burla)

Analysing Urban Flood Disaster in a Climate Change Scenario and steps for its mitigation
Dr. Anil Kumar Kar (Professor Civil Engineering Department VSSUT Burla)

AICTE Trainingand Learning (ATAL) Academy sponsored

Faculty Development Program (FDP)

on

Hydrological Analyses & GIS Application in Water Resources (HAGAWR)

during

12th – 17th Feburary 2024

Organized by

Department of Civil Engineering

Veer Surendra Sai University of Technology
Burla, Odisha, 768018

ABOUT ATAL ACADEMY

AICTE Training & Learning Academy (ATAL Academy) facilitates through trainings and workshops to up-grade the knowledge and skills of faculty members of AICTE approved Institutions, Research Scholars, PG Scholars, Participants from Govt, Industry and staff of host institution.

BACKGROUND

Water is a crucial natural resource for ecosystem preservation and human life. However, unequal distribution and pollution increase pressures on water resources and disaster management. Geographic Information Systems (GIS) and Remote Sensing (RS) are essential tools for water resource management, watershed modeling, and risk management. GIS plays a crucial role in watershed models, decision support systems, and the production, management, and delivery of spatially distributed data. Understanding and managing water resource issues requires understanding complex processes at the surface and subsurface of basins. The deployment of these technologies can reduce pressures on water resources and improve mitigation and response to drought and flood disasters. Hydrology, the study of water and the water cycle, focuses on surface water and groundwater on land. It involves understanding the natural movement of water and the human impact on water resources and quality. Understanding the hydrologic cycle is essential for sustainable, clean water supply, as many industries rely on it.

OBJECTIVES

- Surface and groundwater hydrology, including physical, chemical, biological, and ecological aspects
- Hydrological processes, hydrological extremes and the impact of anthropogenic change on hydrological systems.
- Methodological innovation regarding hydrological observations, data analysis, modelling and management.
- Hydrological analysis for the design, operation and management of engineered and natural water systems, and associated structures.
- Insightful analysis and new approaches to linking hydrology with the social, economic and legal aspects of water resource management.
- Innovative, integrated and holistic aspects of the water-energy-food nexus.
- Promoting conditions for environmentally sustainable, economically efficient and equitably allocated use of water resources.
- Increase the benefits and reduce the risk related to existing hydraulic infrastructure

TOPICS

- Climate Change and Extreme Hydrological Events
- Understanding and Predicting Flash Flood
- Radar supported precipitation remote sensing
- Climate Modelling (Flood, Cyclone, Urban Flood)
- Dam safety
- Flood Disaster
- Urban Flooding
- Water pollution
- River Engineering (Geomorphology)
- AI techniques Application in water resource
- Smart Irrigation
- Meandering of Rivers
- Role of architecture & planning in urban managing water related problem in cities
- Cracks in concrete gravity dam
- Streamlining of piers in bridge
- Offshore structure
- Watershed management
- Ground water pollution
- GIS in surface water monitoring and management
- GIS in groundwater monitoring and management
- Future of GIS in hydrology

TARGET GROUPS

Assistant Professors / Associate Professors / Ph.D. Scholar's / PG Students / Participants from the Higher Education Institutions / Industries

MODE

- In house (Offline) for both theory and practical / lab / experimental learning
- 1 industrial visit.

SESSION & PEDAGOGY PLANNING

Duration : Six days (Monday to Saturday)

- 25 hours of teaching in ten equal sessions
- 5 hours of practical
- 4 hours of article discussion of one hour each
- 3 hours, each for MCQs, reflective journal and feedback
- 3.5 hours for industrial visit

Pedagogy :
Collaborative, Experiential, and Outcome Based Teaching and Learning based live Sessions, Case Studies, Presentation, Videos, Research journals/article review discussions, debates, Presentation, Videos, labs, etc

IMPORTANT GUIDELINES

• Faculty members of the AICTE approved institutions, Research scholars, PG Scholars, participants from Government, Industry (Bureaucrats/Technicians Participants from Industry etc.) and staff of host institutions are eligible to apply for the FDP.

• There is no registration fee for the participants.

• Interested participants from industry, academic and research community are required to register compulsorily in the following link: https://www.aicte-india.org/atal

• Seats are limited (maximum 50) and the participants are selected by organizers on first come first serve basis.

• External Participants (traveling more than 20KM one side to attend the FDPs) who attend at least 90% of the sessions shall be reimbursed with the cost of traveling, with a blanket amount of Rs. 2000/- at the end of the FDP. There would be no provision for boarding/lodging from the end of ATAL Academy/ AICTE. However, refreshment & lunch would be provided for free.

- Last date of registration: 03/02/2024
- Intimation of selection by email: 05/02/2024

Important Links

No Objection Certificate for students and faculties: https://drive.google.com/file/d/1QK5GutSwRswBLbkcJ64Rfm6jzohzRdn5/view

EVENT DETAILS

The events of the seminar include:

- Inaugural Ceremony
- 10 Technical sessions @ 2 hours/session
- Q & A with experts
- Quiz Test and Valedictory Ceremony

1. All the sessions will be conducted OFFLINE at Civil Engineering Department.
2. Certificates shall be issued by the ATAL Academy to participants who have attended the

LEARNING OUTCOMES

After successful completion of this Faculty development program, the candidates will have a better understanding of familiarity with different aspects of water resources engineering, application of software modern techniques in resolving problems related to water resources, real-time exposer to critical & typical issues related to water resources and its adaptable solutions

FIELD VISIT

Exploring the vast expanse of knowledge through a field visit to a legendary structure where theory meets practice, and every step unveils a new dimension of learning.

Hirakud Dam

Veer Surendra Sai University of Technology (VSSUT), Burla, Odisha,768018

Department of Civil Engineering

One Week FDP

On

Hydrological Analyses & GIS Application in Water Resources (HAGAWR)

12th -17th February 2024

PROGRAMME SCHEDULE

Day 1 12.02.2024	Day 2 13.02.2024	Day 3 14.02.2024	Day 4 15.02.2024	Day 5 16.02.2024	Day-6 17.02.2024
9:00-9:30: Inauguration 9: 30-12 :30 Session 1: Forecasting & augmentation of cyclonic disaster (Dr. Sarat Ch. Sahu)	9:30-12:00 Session 5: Future of GIS in the context of estimation of Water Resources and resolving the corresponding disputes. (Er. Ashutosh Dash)	9:30-12:00 Session 3: Utility of satellite imagery in civil engineering applications. (Dr. Pradipta Mishra)	9:30-12:00 Session 4: Understanding the typical aspects river morphology and its implications. (Prof. K.K. Khatua)	9:30-1.00 Field Visit	9:30-12:00 Session 10: Analysing Urban Flood Disaster and steps for its mitigation. (Prof. A.K. Kar)
12:00-12:30 Article Discussion	12:00-12:30 Article Discussion	12:00-12:30 Article Discussion	12:00-12:30 Article Discussion		12.00-1.00 Reflection Journal
1:00-2:00 Lunch	1:00-2:00 Lunch	1:00-2:00 Lunch	1:00-2:00 Lunch	1:00-2:00 Lunch	1:00-2:00 Lunch
2:00-4:30 Session 2: Climate change modeling with respect to extreme hydrological events. (Dr. Sarat Ch. Sahu)	2:00-4:30 Session 6: Conceptualization, design, constructions of plastic concrete diaphragm wall as a seepage barrier. (Dr. Mahendra Kumar Bhuyan)	2:00-4:30 Session 7: AI Technique applications in Water Resources and Smart irrigation. (Dr. Ashutosh Rath)	2:00-4:30 Session 8: Monitoring of Dam, Performance: Instrumentation and Measurement. (Er. Jyotirmaya Behera)	2:00-4:30 Session 9: Critical Evaluation of water, air and noise pollutions and its impacts. (Prof. R.R. Dash)	2:00-4.30 MCQ. Feedback & Interaction.
4:30-5:30 Teaching Practice (Practical sessions)	4:30-5:30 Teaching Practice (Practical sessions)	4:30-5:30 Teaching Practice (Practical sessions)	4:30-5:30 Teaching Practice (Practical sessions)	4:30-5:30 Teaching Practice (Practical sessions)	4:30-5:30 Valedictory Session