

One Week Faculty Development Program on



Innovative Approaches in Dynamics of Soils and Structures



21st to 25th July 2025
(Online Mode)



Department of Civil Engineering

Harcourt Butler Technical University, Kanpur

Harcourt Butler Technical University, Kanpur. Established to foster excellence in technical education and innovation, HBTU stands tall as a distinguished center of learning and research in India. With a rich history spanning hundreds of years, we have continuously evolved to meet the ever-changing demands of the technological landscape. Nestled in the heart of Kanpur, Uttar Pradesh, Harcourt Butler Technical University boasts a sprawling campus with state-of-the-art infrastructure and modern facilities. Our commitment to providing a dynamic and conducive learning environment ensures students have the knowledge and skills necessary to excel in their chosen fields. At Harcourt Butler Technical University, we believe in nurturing academic excellence and personal growth, instilling values of integrity, empathy, and leadership. Our campus is a melting pot of cultures, ideas, and aspirations, providing a platform for students to engage in extracurricular activities, sports, and social initiatives.

About the FDP The Faculty Development Programme (FDP) on “Innovative Approaches in Dynamics of Soil and Structures” aims to provide a comprehensive platform for academic and industry professionals to explore emerging advancements in geotechnical and structural dynamics. The programme will delve into cutting-edge research themes such as the nonlinear dynamic behaviour of geomaterials under complex multiaxial stress paths and the application of geo-materials for ground vibration mitigation. It will also highlight the dynamic performance of hybrid structural systems subjected to near-fault ground motions, and the resilient design of elevated and slender structures under coupled wind–soil–structure interactions. Furthermore, the FDP will introduce advanced techniques like Real-Time Hybrid Simulation (RTHS) for soil–structure interaction testing and coupled Thermo-Hydro-Mechanical (THM) modeling for energy Geostructures. By integrating soil dynamics, structural dynamics, and soil–structure interaction, the

FDP seeks to foster a multidisciplinary understanding of dynamic behaviour and promote innovative solutions in infrastructure resilience and safety.

Important Dates:

Last Date for Registration: 14th July 2025

Schedule:

21st July 2025 to 25th July 2025

Chief Patron

Prof. Samsher

Hon'ble Vice Chancellor, HBTU Kanpur

Patron

Prof. Dipteeek Parmar

Pro Vice-Chancellor, HBTU Kanpur

Guest of Honour

Prof. Vinay Pratap Singh

Dean, School of Engineering

Organizing Committee

Chairman: Prof. Deepesh Singh

**Head, Department of Civil Engineering,
HBTU, Kanpur**

Convenor: Dr. Kavita Tandon

Convenor: Dr. Riya Catherine George

Convenor: Mr. Manish Kumar

Faculty Coordinators:

Dr. Rajiv Ganguly

Mrs. Kajol Priya

Ms. Shivani Koshtha

Mr. Jai Prakash Nayak

Civil Engineering HBTU Kanpur

As one of the university's flagship disciplines, our department has a long-standing legacy of excellence in producing skilled engineers and researchers who contribute significantly to our nation's infrastructure and development. With a strong emphasis on academic rigor, practical experience, and innovation, the Civil Engineering Department at HBTU, Kanpur, is committed to imparting comprehensive knowledge and cutting-edge skills to our students. Our esteemed faculty members, experts in their fields, foster a dynamic learning environment that encourages critical thinking and problem-solving. Moreover, the department actively promotes research and innovation, encouraging students to explore new frontiers and address contemporary challenges. Collaborative projects with industries and government bodies offer invaluable opportunities for practical exposure and industry-relevant skills.

Workshop Themes

This Faculty Development Program is designed to expose participants to advanced and interdisciplinary developments in the domain of soil and structural dynamics. The sessions are structured around six forward-looking themes that reflect current research trends, emerging technologies, and innovative modeling approaches relevant to dynamic loading conditions.

Theme 1: *Characterizing Nonlinear Dynamic Behaviour of Geomaterials under Multiaxial Stress Paths Explores advanced laboratory testing and constitutive models for*

capturing anisotropic and cyclic behaviour of soils under dynamic loads.

Theme 2: *Meta-materials and Engineered Barriers for Ground Vibration Mitigation, introduces wave-filtering geo-meta-materials and engineered periodic structures aimed at mitigating ground-borne vibrations in infrastructure projects.*

Theme 3: *Dynamic Performance of Hybrid Structural Systems under Near-Fault Ground Motions, Focuses on the seismic behaviour of base-isolated and hybrid structures under pulse-type ground motions, with insights into performance-based design.*

Theme 4: *Resilient Design of Elevated and Slender Structures under Dynamic Wind-Soil-Structure Coupling, Examines integrated wind-soil-structure interaction in tall and flexible structures subjected to dynamic aerodynamic loading.*

Theme 5: *Real-Time Hybrid Simulation (RTHS) Techniques in Soil-Structure Interaction Testing, Highlights the use of hybrid experimental-numerical setups to simulate real-time SSI behaviour of geotechnical systems.*

Theme 6: *Coupled Thermo-Hydro-Mechanical (THM) Modelling in Dynamic SSI for Energy Geostructures Discusses THM modeling frameworks for dynamic analysis of energy piles and geo-structures under cyclic thermal-mechanical loading.*

Registration Details

Registration Link:

Google Form:

<https://forms.gle/HPGgVqQWjdRULXPi9>

Early Bird Registration Fees: INR 200

Late Registration Fees: INR 250

Account Details: Central Bank of India

Account Name: Finance Controller

Account Number: 3569148950

Branch: Central Bank of India HBTU Kanpur

IFSC Code: CBIN0283288

WhatsApp Group Link:



<https://chat.whatsapp.com/G5wwZ9FVIAN9p7DbO>

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Information:

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