Report on Guest Lecture titled "Urban Flood: Risk Assessment, Mitigation and Resilience" organized by the Department of Civil Engineering, Integral University on 26th February 2026

The Department of Civil Engineering, Integral University, Lucknow, organized a guest lecture on **26th February 2026** on the topic *"Urban Flood: Risk Assessment, Mitigation and Resilience."* The lecture was delivered by **Dr. Ahmad Rashiq**, an expert in Water Resource Engineering. He completed his M.Tech from Indian Institute of Technology Roorkee and his Ph.D. from Indian Institute of Technology Patna. He has been associated with several research and consultancy projects in the field of water resources and environmental engineering.

The primary objective of the programme was to create awareness among students about the increasing environmental changes caused by global warming and the adverse effects of unsustainable construction practices on ground hydrology and society at large. The lecture aimed to highlight the growing challenges of urban flooding in rapidly developing cities and to emphasize the crucial role of civil engineers in risk assessment, mitigation planning, and the development of resilient infrastructure systems. A total of 29 students and 8 faculty members attended the programme.

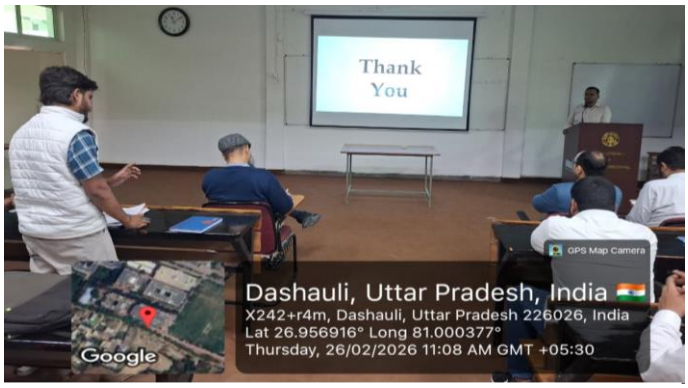
Dr. Ahmad Rashid during his lecture

In his address, Dr. Rashiq explained that urban flooding has become a recurring phenomenon due to rapid urbanization, encroachment upon natural drainage channels, excessive concretization of surfaces, inadequate stormwater management systems, and climate change-induced extreme rainfall events. He referred to major flood incidents in metropolitan cities such as Mumbai to illustrate how unplanned urban expansion significantly increases flood vulnerability. He further elaborated that global warming intensifies the hydrological cycle, resulting in high-intensity, short-duration rainfall events. In the absence of adequate permeable surfaces and efficient drainage networks, even moderate rainfall can cause severe waterlogging, traffic disruption, property damage, and public health hazards.

Dr. Rashiq emphasized the importance of scientific flood risk assessment, which includes hydrological modelling, watershed analysis, rainfall–runoff estimation, and GIS-based flood mapping. He discussed the application of modern tools such as Remote Sensing, Geographic Information Systems (GIS), and hydrodynamic modelling techniques for identifying flood-prone

Participants during the lecture

areas and designing effective mitigation strategies. He highlighted that resilience in urban infrastructure demands integrated planning, sound policy intervention, sustainable construction practices, and active community participation to reduce vulnerability and enhance adaptive capacity.



Students engaging with the speaker

The session was highly interactive, with students actively participating in discussions on real-world case studies, changing hydrological patterns due to climate change, and the responsibilities of civil engineers in promoting sustainable urban development. Dr. Rashiq encouraged students to adopt environmentally responsible construction approaches and incorporate sustainability principles into future infrastructure projects.

The lecture provided valuable insights into contemporary challenges in water resource engineering and inspired students to contribute meaningfully towards climate-resilient and sustainable infrastructure planning.

Dr. Rashiq responding to student's query

At the conclusion of the programme, the Department of Civil Engineering expressed its sincere gratitude to Dr. Ahmad Rashiq for delivering an enlightening and impactful lecture. Appreciation was also extended to **Prof. Syed Aqeel Ahmad**, Head of the Department of Civil Engineering, for his support in the successful organization of the event.

The themes discussed during the lecture were closely aligned with the following Sustainable Development Goals: **SDG 4 – Quality Education:** Promoting advanced knowledge and industry-relevant learning in climate resilience and sustainable infrastructure; **SDG 6 – Clean Water and Sanitation:** Emphasizing sustainable water management and groundwater recharge practices; **SDG 9 – Industry, Innovation and Infrastructure:** Encouraging the development of resilient and sustainable infrastructure systems; **SDG 11 – Sustainable Cities and Communities:** Addressing urban flood management and safe, inclusive urban development; **SDG 13 – Climate Action:** Highlighting mitigation and adaptation strategies to combat the impacts of climate change.

The programme successfully enhanced awareness among students regarding urban flood risks and underscored the importance of sustainable and resilient engineering solutions in addressing emerging environmental challenges.