भारतीय प्रौद्योगिकी संस्थान मंडी

INDIAN INSTITUTE OF TECHNOLOGY MANDI

Institute Colloquium

“New Paradigms for the IIT System: AI and Scale”

11th April, 2025

05:00PM

Auditorium, North Campus

Prof. Anindya Chatterjee

Department of Mechanical Engineering, Indian Institute of Technology, Kanpur

Title:

New Paradigms for the IIT System: AI and Scale

Abstract:

The IIT system is large, but it is still very small compared to our country and the world. We face many challenges. Well known challenges are extreme competition to get in, resulting burnout in many students, their skepticism about our teaching and how it relates to their employment, the sometimes-claimed irrelevance of our syllabi to the needs of employers, etc. We also face the growing power of artificial intelligence (AI) and its potential for transforming the meaning of work and the world of employment.

Yet, IITs remain important custodians of engineering education and knowledge in the country.

This talk is for faculty members in the IIT system, especially but not exclusively for teachers of technical subjects. I will present my thoughts, reasoning, and suggestions for facing the above challenges along two main themes.

One theme is AI. If any task reducible to a list of clear instructions can be done by AI, how might our teaching respond? What should be the goals of our teaching? The goal of education is transformation, not information. I will discuss the sort of transformation that we might aim for.

The other theme is scale. Our work is expanding in multiple directions including teaching, research, publishing, fundraising, and outreach. Student enrollments are increasing as well. I suggest that we can bring an engineering viewpoint to what we are aiming for and how much our efforts are multiplied by the time they lead to results. How can we build work amplification into how we do things?

I hope that the talk will offer something of interest to all teachers within the IIT system.

Brief Bio:

Prof. Anindya Chatterjee got his BTech in mechanical engineering from IIT Kharagpur, concurrent masters degrees in engineering mechanics and in applied mathematics from the University of Florida, a PhD in mechanics from Cornell University, and postdoc research experience at Penn State University. He has taught mechanical engineering at IISc Bangalore, IIT Kharagpur, and IIT Kanpur. He is presently a professor (HAG) at IIT Kanpur. He is a Fellow of INAE and NASI. His research interests are in applied mechanics and applied mathematics. He is interested in the career prospects of the next generation of Indian engineers. He also enjoys working with small engineering companies, which present opportunities for quick progress in multidisciplinary areas.