McGill

Mechanical Engineering Colloquium

PROFESSOR AMITABHA GHOSH

Distinguished Professor

Indian Institute of Engineering Science and Technology,

Shibpur, India

Tuesday, June 16, 11:00-12:30

Macdonald Engineering 267

CONCEPTUAL EVOLUTION OF NEWTONIAN MECHANICS: THE LITTLE KNOWN STORY OF *F = ma*

Abstract:

This talk presents the crucial steps for developing the conceptual foundation of the 'Science of Motion'. It unfurls the long and very slow conceptual evolutionary process that led to the emergence of the concept of force and its interaction with matter. The major role played by the progress in astronomy in the process is highlighted. How Kepler first grasped the existence of an entity like 'force' and how Huygens established the relation between 'force' and the crucial parameter 'acceleration' are elaborated. The talk ends with a discussion of Newton's final synthesis of the concepts.

Biographical Sketch:

Professor Amitabha Ghosh is currently a Distinguished Professor and INSA Senior Scientist at IIEST Shibpur, India. Prior to this, he was a Professor at IIT Kanpur. He served as the Director of IIT Kharagpur from 1997 to 2002.

Professor Ghosh has made extensive research contributions in many areas of mechanics. He is considered to be the first person to observe chaos in mechanical systems and conduct related experiments about 40 years ago. He was the first to set up a centre for robotic research in India, at IIT Kanpur. He has proposed the theory of 'inertial induction' that has important consequences in astronomy and cosmology.

Professor Ghosh is a Fellow of the Indian National Academy of Engineering, Indian Academy of Sciences, and National Academy of Sciences (India). He is an Honorary Life Fellow of the Association for Machines and Mechanisms, India.