INTENDED AUDIENCE: Chemical Engineering, Biotechnology and Food Engineering

COURSE OUTLINE:
Chemical engineering consists of several unit operations and unit processes. Before the reaction step, the raw materials should be processed through various unit operations and similarly after the reaction step as well either for product separation or for purity. Thus unit operations are essentially part of chemical engineering and hence, basic knowledge about the principles and equipment of solid-solid unit operations and solid-liquid unit operations is mandatory for any professional chemical engineer.

ABOUT INSTRUCTOR:
Dr. Nanda Kishore completed PhD from Indian Institute of Technology Kanpur in 2008 and presently is a Professor in the Department of Chemical Engineering of IIT Guwahati. He has been working in the area of computational fluid flow past solid and fluid spheres in variety of non-Newtonian fluids for last 15 years. He has published over 70 research articles in various international level reputed journals, published more than 35 papers in national/international conference proceedings and published 08 book chapters. He was a visiting researcher in Department of Chemical and Processing Engineering, University of Surrey, Guildford, United Kingdom in July 2016. He received Young Scientist Research Award in 2016 from DAE-BRNS; IEI Young Engineers Award for the year 2015-2016; Young Scientist Research Grant Award from Science and Engineering Research Board of Department of Science and Technology, Government of India, 2013.

COURSE PLAN:
Week 1: Introduction of Particulate Solids
Week 2: Screening
Week 3: Size Reduction
Week 4: Storage and Conveying of Bulk Solids
Week 5: Size Enlargement
Week 6: Flow past Bluff Bodies
Week 7: Flow Through Packed and Fluidized Beds
Week 8: Filtration
Week 9: Cross Flow Filtration and Membrane Separations
Week 10: Gravity Sedimentation
Week 11: Centrifugal Separations
Week 12: Floatation