THERMAL OPERATIONS IN FOOD PROCESS ENGINEERING: THEORY AND APPLICATIONS

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TYPE OF COURSE : Rerun I Core&Elective I UG/PG
COURSE DURATION : 12 weeks (20 Jul’20 - 09 Oct’20)
EXAM DATE : 18 Oct 2020

INTENDED AUDIENCE : Agricultural Engineering, Food Technology, Food Engineering, Chemical Engineering, Biotechnological Engineering, Thermal Engineering, Biotechnology
INDUSTRIES APPLICABLE TO : Any Processing Industry such as ITC, Hindustan Lever, Britannia etc.

COURSE OUTLINE :
This course will cover basics of processing and preservation technologies required in any processing industries. The basic knowledge on thermal processing is intermingled with most of the unit operations at some or other stage of processing. Since, these basic aspects of thermal operations is not taught in most of the engineering institutions elaborately, a comprehension of these aspects of thermal processing will enrich the knowledge base of the students in general.

ABOUT INSTRUCTOR :
Prof. Tridib Kumar Goswami, a NAAS, ISAE, IE, AABS Fellow, did his B.Sc. in Chemistry (Hons) from University of Calcutta, B.Tech. in Food Technology and Biochemical Engineering from Jadavpur University, Ph.D. from IIT Kharagpur. He has earned 5 Indian Patents, published 104 papers in peer reviewed reputed journals, 55 conference proceedings. He has written 4 books and 14 book chapters published by International publishers. One of his papers was awarded the prestigious N.N. Mohan Memorial Award for 2009 conferred by AIFPA, New Delhi for Best Paper of the year.

COURSE PLAN :
Week 1: Fundamentals of food processing and preservation
Week 2: One dimensional conduction heat transfer in Cartesian coordinate
Week 3: One dimensional conduction heat transfer in cylindrical coordinate
Week 4: Transient heat transfer by conduction
Week 5: Drying technology
Week 6: Preservation by high temperature processing
Week 7: Multiple effect evaporators
Week 8: Process time calculations
Week 9: Boiling and condensation
Week 10: Heat Exchangers
Week 11: Convective heat transfer
Week 12: Distillation used in food process industries