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. After serving Kwality Ice Cream, Bombay for 1½ years, he joined IIT Kharagpur in 1989 and is still continuing as a Professor. 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. He has travelled around the world for presenting papers and was specially invited by Jeonbuk National University, Korea with full sponsorship in 2009. He has guided 14 Ph.D., out of which 3 theses have been awarded the prestigious Jawaharlal Nehru Award offered by ICAR. 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 OUTLINE:

This course will cover basics of dairy (liquid food) food processing and preservation technologies required in any dairy and food processing industries. The basic knowledge on dairy food processing is intermingled with most of the unit operations at some or other stage of processing. Since, this basic aspect of food processing and preservations not taught in most of the Agricultural engineering institutions elaborately, a comprehension of these aspects of processing and preservation will enrich the knowledge base of the students in general.

COURSE PLAN:

Week 01: Basic principles and methods of food processing and preservation. Emerging Technologies in food processing. Food additives and preservatives.

Week 02: Food laws and standards. Effect of processing on acceptability and nutritive value of foods.

Week 03: Physico-chemical properties and structure of milk and milk constituents.

Week 04: Chemical and microbial spoilage of milk and milk products; Fluid milk processing, packaging and distribution.

Week 05: Common dairy processes – cream separation (standardization), pasteurization, sterilization and Homogenization.

Week 06: Process technology for manufacture of evaporated milk, condensed milk, dried milk, malted milk, infant and baby foods, ice-cream, cheese, butter, fermented milk and indigenous dairy products.

Week 07: Methods and procedures for sampling and testing of milk and milk products. Laws and standards for milk and milk products.

Week 08: Technological processes for industrially manufactured foods of commercial importance, from plant and animal origin.

Week 09: Cereals, vegetables, fruits, meats, poultry and egg products; Bakery, pasta and confectionary products, ready to eat foods, fermented foods, alcoholic and non-alcoholic Beverages, tea, coffee and cocoa, fabricated foods.

Week 10: Packaging materials; Characteristics, properties and their design. Packaging requirement for different processed and unprocessed foods.


Week 12: Gas packaging and modified atmosphere Package design. Shelf life prediction of foods in packages. Quality control in Food packaging. Product safety and packaging regulations.