Food Process Engineering-I 3(2-1)

Theory

Agricultural raw materials: physical, mechanical, biological, thermal and reheological properties. Engineering approach in materials handling: cleaning, sorting, grading, size reduction - equipments and their applications. Storage structures: refrigeration, air conditioning and freezing units. Mobile refrigeration units. Equipments used for packing of fruits, vegetables and their products. Extraction process for agricultural products: oil seeds, fruits. Cost analysis: engineering processes, finished products. Boilers, steam generators, retorts, f ans, blowers: types, selection. Recycling engineering: fundamentals, applications.

Practical

Materials handling: cleaning, sorting, grading of raw materials. Determination of different types of storage environment conditions for agricultural raw materials. Maintenance and operation of equipment used for engineering processes – refrigerant units, heat exchangers. Visit to cold stores and freezing units.

Books Recommended

1. Keith, W. 2007. Handbook of waste management and co-product recovery in food processing, Vol. I. CRC Press, Taylor & Francis Group, Boca Raton, Florida, USA.
2. Ramaswamy, H.S. and Marcotte, M. 2005. Food processing: principles and applications. CRC Press, Taylor & Francis Group, Boca Raton, Florida, USA.
3. Smith, J.S. and Hui, Y.H. 2004. Food processing: principles and applications. Blackwell Pub. Co., Oxford, England.