**FOOD PROCESSING TECHNOLOGY (4)**

**11:400:301**

Food processing is the set of methods and techniques used to transform raw ingredients into food for consumption by humans. In order to meet the sensory quality, safety, nutrition, health, economy and novelty demanded of food products by consumers, it is necessary to improve food processing operations. Food processing has moved on from being a craft to a modern technology. This course covers principles of operation and design of industrial equipment, used in the processing, storage and packaging of foods. Food quality and food safety aspects, related to food processing equipment, are emphasized. Food processing equipment is classified and described according to the basic unit operations, including mechanical transport, mechanical processing and separations, heat transfer operations, evaporation, dehydration, thermal processing, etc.
The descriptive information provides students with background on the process and the impact of the process on food product quality. Examples utilizing different food commodities are incorporated to ensure that the student gains an understanding of the relationship between commodities and processes.

## COURSE CONTENT FOR FS 301

## FOOD TECHNOLOGY AND PROCESSIN

### NON-CONVERSION OPERATION

- Food raw materials: physical, functional and geometric properties
- Cleaning of raw materials: cleaning methods and contaminations
- Sorting and grading of foods: weight, size, shape, buoyancy, photometry sorting

### FOOD CONVERSION OPERATIONS

- Size reduction and screening of solids: equipment, modes of operation. Disintegration of materials: slicing, dicing, shredding, pulping

- Mixing and emulsification
- Filtration and membrane separation: principles, design features and general applications
- Centrifugation: principles and applications
- Solid-liquid extraction and expression
- Heat processing (Part 1): modes of heat transfer,. Methods of applying heat to food.

**PRESERVATION OPERATIONS**

- Heat processing (Part 2): microbiological considerations. Methods of heat sterilization in containers. Pasteurization by heat processing
- Evaporation: evaporation principles and equipment
- Dehydration: water in food, drying (contact, radiation, sublimation)
- Freezing: freezing/thawing
- Food storage: storage conditions and packaging (materials, filing, closing and sealing equipment).
- Food products processing primer: dairy products, meat products, juice, vegetables