

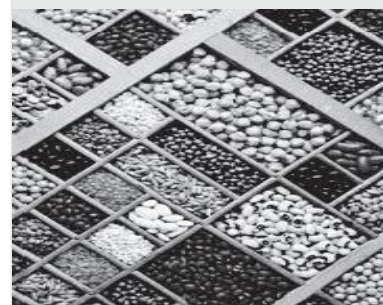
# 16FT302 CEREALS, LEGUMES AND OILSEEDS PROCESS TECHNOLOGY

Hours Per Week :

L	T	P	C
3	-	2	4

Total Hours :

L	T	P	WA/RA	SSH/HSB	CS	SA	S	BS
45	-	30	15	50	-	-	5	5



## Course Description and Objectives:

This course offers knowledge on various processing technologies of cereals, legumes and oil seeds. The objective of this course is to make students understand specific aspects related to processing, storage, product formulation and byproduct utilization from cereals, legumes and oil seeds.

## Course Outcomes:

The student will be able to:

- understand and identify the specific processing technologies used for cereals and cereal products.
- know about different legume processing aspects.
- learn about different milling and oil extraction techniques of cereals, legumes and oil seeds.
- know the utilization of by-products from cereals, legumes and oil seeds.

## SKILLS:

- ✓ Determine physico-chemical properties of cereals, pulses and oil seeds.
- ✓ Process major cereals and quality analysis of the cereal products.
- ✓ Handle cereal processing equipment.
- ✓ Extract oil from different oil seeds and quality analysis of oils.
- ✓ Identify and suggest appropriate storage conditions for grains.

**ACTIVITIES:**

- *Collect, identify and prepare a report on physico-chemical properties of different cereal, legumes and oil seeds.*
- *Design prototype milling equipment for grains.*

**UNIT - 1****L-12**

**GRAIN PROPERTIES, GRAIN DRYING AND TYPES OF DRYERS:** Physico-chemical properties of grains, Psychrometry, Theory of grain drying, Methods of grain drying, Grain dryers, Selection, Design, Specifications and testing of grain dryers.

**UNIT - 2****L-9**

**RICE PROCESSING:** Principles of parboiling of paddy, Hydrothermal treatments, Conditioning of paddy, Rice milling, Classification, Physicochemical characteristics, Cooking quality, By-products of rice milling and their utilization, Aging of rice, Quality changes, Processed products based on rice.

**UNIT - 3****L-9**

**MILLING OF CORN, WHEAT AND PULSES:** Corn milling-composition and structure, Corn dry milling and wet milling, Wheat milling, Flour milling, Milling of pulses, Varieties, Composition and structure, Traditional dry milling methods, Commercial milling of pulses by traditional methods, Modern methods of pulses milling.

**UNIT - 4****L-9**

**PROCESSING OF OILSEEDS AND RICE BRAN:** Processing of oilseeds- general, production and refining of cotton seed oil, solvent extraction of soybean oil, extraction of sunflower oil, extraction of coconut oil. Shortening: characteristics, uses, manufacturing process, types of shortening; margarine: mayonnaise: salad oil; peanut butter, vegetable ghee

**UNIT - 5****L-6**

**GRAIN STORAGE:** Grain storage principles, Parameters affecting grains during storage, Changes occurring in food grains storage, Chemical, Physical changes, Moisture migration, Grain storage pests and their control.