

**UNIT I**

Green house technology: Introduction, Types of Green Houses; Plant response to Green house environment, Planning and design of greenhouses, Design criteria of green house for cooling and heating purposes.

**UNIT II**

Green house equipments, materials of construction for traditional and low cost green houses. Irrigation systems used in greenhouses, typical applications, passive solar green house, hot air green house heating systems, green house drying.

**UNIT III**

Cost estimation and economic analysis. Important Engineering properties such as physical, thermal and aero & hydrodynamic properties of cereals, pulses and oilseed, their application in PHT equipment design and operation.

**UNIT IV**

Drying and dehydration; moisture measurement, EMC, drying theory, various drying method, commercial grain dryer (deep bed dryer, flat bed dryer, tray dryer, fluidized bed dryer, recirculatory dryer and solar dryer). Material handling equipment; conveyer and elevators, their principle, working and selection.

**Practical(s)**

- Study of different type of green houses based on shape.
- Determine the rate of air exchange in an active summer winter cooling system.
- Determination of drying rate of agricultural products inside green house.
- Study of green house equipments.
- Visit to various Post Harvest Laboratories.
- Determination of Moisture content of various grains by oven drying & infrared moisture methods.
- Determination of engineering properties (shape and size, bulk density and porosity of biomaterials).
- Determination of Moisture content of various grains by moisture meter.
- Field visit to seed processing plant. Storage structure