



Loyola Academy Degree & PG College, Alwal, Secunderabad 500 010

## TECHNOLOGY OF FOOD PRESERVATION & PROCESSING

**Credits : 4**

**Course Code : MFT13402 (B)**

**II Year/Semester: IV**

**No. of Lecture hours: 45**

### Objectives:

- To study the importance microorganisms in food preservation
- To introduce the basics of various food processing and preservation technologies.

### UNIT I

#### **Introduction & High Temperature Processing (9Hrs)**

- Food preservation and processing – Scope, historical developments, principles 1
- Processing and preservation by heat;
  - blanching, pasteurization, sterilization and UHT processing 3
  - canning, extrusion cooking, dielectric heating 3
  - Microwave heating, baking, roasting and frying, etc. 2

### UNIT II

#### **Low Temperature Processing (9Hrs)**

- Processing and preservation by low-temperature-
  - refrigeration, freezing 2
  - CA, MA 2
  - dehydro freezing 1
- Processing and preservation by
  - Drying– Types of dryers - suitability for different food products. 1
  - Concentration, evaporation 2
  - Crystallization 1

### UNIT III

#### **Membrane Technology (9Hrs)**

- Membrane technology - Introduction to pressure activated membrane processes:
  - micro- filtration 2
  - UF 2
  - NF 2
  - RO 2
- Industrial applications of Membrane technology 1

### Unit IV

#### **Food Additives & Fermentation (9Hrs)**

- Preservation by Food additives: types and functions 1
- Permissible limits and safety aspects. 2
- Use and application of;



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- Enzymes in processing and preservation of foods 2
- Microorganisms in processing and preservation of foods 2
- Food fermentations. 2

## UNIT V

### New Techniques of Preservation

(9Hrs)

- New techniques in food processing 1
- Processing and preservation by non-thermal methods
  - Irradiation 1
  - high pressure, high intensity light, 1
  - pulsed electric field, 1
  - ohmic heating 1
  - IR heating, inductive heating 1
  - pulsed X-rays 1
- Hurdle technology 1
- Nanotechnology: Principles and applications in foods 1

### Recommended Readings:

- Arsdel, W.B. Copley, M.J. and Morgan, A.I. 1973. **Food Dehydration**. 2<sup>nd</sup> Edition. Volume: I and II. New York: AVI Publications.
- Desrosier, N.W and James, N. 1977. **Technology of Food Preservation**. 4<sup>th</sup> Edition. New York: AVI Publications.
- Fellows, P.J. 2005. **Food Processing Technology: Principle and Practice**. 2<sup>nd</sup> edition. New York: CRC publications.
- Ramaswamy, H. and Marcotte, M. 2006. **Food Processing: Principles and Applications**. Florida: CRC publications.