- SEMETSER:- I
- COURSE NO.:- FST-111
- COURSE TITLE:- PRINCIPLES OF FOOD PROCESSING
- CREDITS:- 3(2+1)

➢ THEORY

NO. OF UNITS	TOPICS	NO. OF LECTURES
1	*Introduction, sources of food, scope and benefit of industrial food preservation, perishable, non perishable food, causes of food spoilage*	*2*
2	*Preservation by salt and sugar – Principle, method, equipment and effect on food quality*	*3*
3	*Thermal processing methods of preservation – Principle and equipments : Canning, blanching, pasteurization, sterilization, evaporation*	*4*
4	*Use of low temperature – Principle, equipment and effect on quality Chilling, cold storage, freezing*	*4*
5	*Preservation by drying dehydration and concentration – Principle, Methods, equipment and effect on quality :* *Difference, importance of drying and dehydration over other methods of preservation , equipments and machineries, physical and chemical changes in food during drying and dehydration Need and principle of concentration, methods of concentration – Thermal concentration, freeze concentration, membrane concentration, changes in food quality by concentration*	*6*
6	*Preservation by radiation, chemicals and preservatives* *Definition, methods of irradiation, direct and indirect effect, measurement of radiation dose, dose distribution, effect on microorganisms. Deterioration of irradiated foods- physical, chemical and biological; effects on quality of foods* *Preservation of foods by chemicals, antioxidants, mold inhibitors, antibodies, acidulants etc. Preservation by fermentation- Definition, advantages, disadvantages, types, equipments.*	*6*
7	*Recent methods in preservation:* *Pulsed electric field processing, High pressure processing, Processing using ultrasound, dielectric, ohmic and infrared heating. Theory, equipments and effect on food quality*	*7*
	TOTAL	**32**

➢ PRACTICALS

NO. OF UNITS	TOPICS	NO. OF EXPT.
1	*Demonstration of various machineries used in processing*	*1*
2	*Demonstration of effect of blanching on quality of foods*	*1*
3	*Preservation of food by heat treatment- canning, - canning of fruits and vegetables*	*1*
4	*Preservation of food by high concentration of sugar i.e. preparation of jam*	*1*
5	*Preservation of food by using salt- Pickle*	*1*
6	*Preservation of food by using acidulants i.e. pickling by acid, vinegar or acetic acid*	*1*
7	*Preservation of food by using chemicals*	*1*
8	*Preservation of bread, cake using mold inhibitors*	*1*
9	*Preservation of coconut shreds using humectants*	*1*
10	*Drying of pineapple slices, apple slices in cabinet drier*	*1*
11	*Demonstration on drying of green leafy vegetables*	*1*
12	*Drying of Mango/other pulp*	*1*
13	*Drying of semisolid foods using roller dryers*	*1*
14	*Drying of foods using freeze-drying process*	*1*
15	*Demonstration of preserving foods under cold v/s freezing process*	*1*
16	*Processing foods using fermentation technique i.e. preparation of sauerkraut*	*1*
	TOTAL	**16**

- *Reference Books:*

1) *Technology of Food Preservation* *N. W. Desroiser and N. W. Desrosier*
2) *Introduction to Food Science and Technology* *G. P. Stewart and M. A. Amerine.*
3) *Food Processing Operations Vol. III* *M. A. Joslyn and J. J. Heild.*
4) *Preservation of Fruits and Vegetables* *Giridhari Lal, G. S. Siddappa, & G. L. Tondon.*