

**OPJS UNIVERSITY,CHURU(RAJASTHAN)**



**SYLLABUS**

for

**DIPLOMA IN FOOD PRESERVATION  
TECHNOLOGY**

**(DFPT)**

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**School of Para Medical Science**

**Opjs University, Churu (Rajasthan)**

**2013-14**

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# Diploma in Food Preservation Technology

(DFPT)

(Duration : 1 Year)

S.No.	Paper code	Name of papers	M.M.(T.& S.)
1.	FPT-01	Food Chemistry & Food Microbiology	70+30
2.	FPT-02	Food Process Engineering	70+30
3.	FPT-03	Food Preservation Technology	70+30
4.	FPT(P)-04	Food Technology Lab.	70+30

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## Details of Syllabus:-

### FPT-01- FOOD CHEMISTRY & FOOD MICROBIOLOGY

#### Unit-I : Constituents of Food.

Carbohydrates classification- function of Carbohydrates- Digestion and Absorption – Metabolism – Regulation of blood sugar – sources of carbohydrate in diets – Diabetes Miletus - carbohydrate requirements lipids classification – properties of fats -sterols – cholesterols, Refined and hydrogenated oils – function of fats in diets – essential fatty acids – effect of deficiency –digestion of fats .

#### Unit-II :

Proteins – chemical comp. Structure, properties – classification - Digestion and absorption – Function of proteins – Protein metabolism –Nutrition values of

proteins – protein requirements and protein contents of food , protein calorie malnutrition in children – Energy value of food and energy requirements – energy yielding food factors – Determination of energy value of food-gross energy value of foods.

### **Unit-III :**

Vitamin and minerals – Classification of vitamin, sources of vitamin, nutrition value of vitamin – Diseases caused by deficiency of vitamins – vitamin requirements.

Minerals – food sources – requirements – metabolism – effects of deficiency – excess intake.

Trace elements and their metabolism- Toxic effects due excess amounts. Water balance – water intake and loss – composition of body fluids .

### **Unit-IV :**

Food and Microbiology : Food as a substrate for microorganism – microorganism in food Microbiology – contamination of foods – general principles underlying spoilage – Chemical change caused by microorganism .

### **Unit-V :**

Contamination – preservation and spoilage of different kinds of foods – cereal and cereal products, sugar and sugar products, vegetable and fruit, meat and meat products, fish and other sea foods – eggs, poultry, milk and milk products-Food and enzyme produced by microorganisms.

### **Suggested Readings:**

1. Dr. M. Swaminathan Bappco-Food Science Chemistry and Experimental Food ,II edn. 1987.
2. Dr. Westhoff & W.C. Frazier – Food Microbiology,

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## **FPT-02- FOOD PROCESS ENGINEERING**

### **Unit-I :**

Food products – Milk and Milk products, Meat – poultry and eggs – Sea foods fat, oils and related products, cereals , grains, legumes, oil seeds.

Physical properties of food – Rheology and Texture, Rheological behavior foods and its measurement – Non Newtonian behavior of food.

### **Unit-II:**

Mass Transfer : diffusion, extraction, crystallization as applicable to production of food products – Heat transfer – Heating, cooling, vaporization – Freeze and hot drying as application to food products. Equipments for fish processing and other foods.

### **Unit-III:**

Refined Foods processing – Wheat and corn flours – Rice and oats milling  
Minor cereal flours –Fats and oils- sugars, syrups – starches and gums.

### **Unit-IV:**

Drying and dehydration of foods- Types of dehydration, sun drying  
dehydration of fruits, vegetables, milk, butter and cheese.

### **Unit-V:**

Food packaging – Principles of food packing – Introduction- Types of containers – food packing materials and forms – package testing – package with special features – methods of packaging – safety of food packaging – Environmental consideration.

### **Suggested Readings:**

1. Warren L. McCabe, J.C.Smith and Petar Harriett – Unit Operation of Chemical Engineering.
2. Harry W. Von Keosecke – Drying and Dehydration of Foods.
3. Potter N.N. and J.H. Hotchkiss – Food Science.
4. Milton, E, Parker – Elements of Food Engineering.

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## **FPT-03- FOOD PRESERVATION TECHNOLOGY**

### **Unit-I:**

Principles of food preservation – Methods of food preservation – removal of Microorganisms – maintenance of anaerobic conditions – Food dehydration – Food Concentration.

### **Unit-II:**

Heat preservation and processing – Degrees of preservation – selecting heat treatment – Heat resistance of microorganisms – Heat transfer – Protective effects of Food contamination – Inoculated pack studies – different Temperature time combinations – Heating before of after packaging – Government regulations.

### **Unit-III:**

Cold preservation and processing – Distinction between refrigeration and freezing – refrigeration and cold storage – Freezing and frozen storage – Additional developments .

### **Unit-IV:**

Irradiation- Microwave and ohmic processing of foods – Foods Irradiation, Microwave heating and ohmic heating.

### **Unit-V:**

Preservations by food Additives – Classification and food additives – Nature and Characteristics of Additives in foods, Antimicrobial preservation – Added preservatives –Developed preservatives.

Fish curing and processing – chilled and frozen fish production – salting and marinating. Fish smoking.

### **Suggested Readings:**

1. Potter, N.N. & J.H. Hotchkiss – Food Science.
2. G. Subhulakshmi & Shoba A. Udipi -Food Processing and Preservation.
3. D.E. Merindol – Fish Curing and Processing.

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### **FPT-04- FOOD TECHNOLOGY LABORATORY**

1. Determination of Moisture in food products.
2. Determination of nitrogen compounds in feedstuffs.
3. Determination of carbohydrates.
4. Determination of lipids.
5. Determination of minerals in food.
6. Spectrophotometer method - Determination of organic compounds in foodstuffs.
7. Thin layer chromatography for protean determination.
8. Gas chromatography for determination of sugars, organic acids and alcohols.
9. High performance liquid chromatography for determination of alcohols and proteins.
10. Preparation of Jam, Squash.

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