

BHARATHIAR UNIVERSITY, COIMBATORE 641 046

**M.Phil. Degree Course**

**Food and Nutrition**

**Part I**

**PAPER III SPECIAL PAPER I**

**FOOD PROCESSING, QUALITY CONTROL AND FOOD SAFETY**

### **UNIT I**

**Status of food processing Industry in India:** Status, scope, need and major constraints in growth of food processing in India.

Production trends of cereals ( rice, wheat & corn ) pulses (tur dal, bengal gram and green gram ) fruits and vegetables and milk and milk products.

Food processing ; Production of bakery items, breakfast cereals, dhal milling, jams and squashes, milk powder – cost ,capacity and supplier of each of the equipment, setting up of pilot plant for bakery and fruit processing unit.

### **UNIT II**

#### **Principles of quality control and evaluation**

General principles of quality control, quality attributes of raw materials, process control and finished product evaluation , subjective and objective methods of evaluation of foods

Physico-chemical characteristics of bakery products (bread, biscuits, cookies, and cakes ), fruit and vegetable products (jam, squash & puree ) milk and milk products ( milk powder – toned & skimmed, cheese & ice cream )and pulses. Basic tests for identification of microbial contamination, water activity in processed foods – definition and importance.

### **UNIT III**

#### **Food safety and sanitation**

Food safety, hazards, food toxins, causes and effects, types of food toxicants endogenous naturally occurring and synthetic toxicants. Adulteration and tests to detect adulterants, heavy metal and pesticide contamination, risk assessment for chemical and biological food hazards, sanitation and safety – significance and hygienic management, safety measures adopted in food industry.

### **UNIT IV**

**National food laws and standards-** PFA, FPO, BIS, AGMARK, MPO, MMPO, APEDA, MPEDA

**International Standards- FDA, TQM, HACCP.**

## **UNIT V**

### **Packaging and Labelling**

Principles and characteristics of packaging materials, labeling and its types codex guidelines, FDA guidelines for nutrition claims, ensuring proper labeling – guiding principles. Recent developments on the food labeling front in India. Food fortification- definition, need, scope, kind of fortification in cereals, fruits, vegetables, milk and milk products.

### **References**

1. Journal of Food science and technology
2. Indian food packer
3. Processed food
4. Food Technology
5. Proceedings of International Food convention
6. Douglas M., Cousidine P.E and Glenn D. Comidine (1997) Food and food production Encyclopedia , CBS Publishers New Delhi
7. Robin M. Philip Convenience foods- Recent technology Boyes Data Corporation, New Jersey, USA.
8. Thomas Richards.m John W.Finley Chemical changes in food during processing –AVI Publication, West Port, Connecticut
9. Lal G.Sidappa, C.E.Tandon, Preservation of fruits and vegetables
10. Norman Desroisier (1970) Technology of preservation, The AVI Publishers Inc.

**PAPER-III SPECIAL PAPER II  
COMMUNITY AND PUBLIC HEALTH NUTRITION**

**UNIT-I**

**Nutrition for the community**

Nutrition of the individual, family and community – general concept, nutritional problems in changing societies with special reference to micronutrient deficiencies- prevalence, causes and remedies.

Effects of malnutrition through the life cycle.

Assessment of nutritional status – direct and indirect methods.

Nutrition for the tribal population.

**UNIT-II**

**Nutrition education**

Definition, planning, conducting and evaluation. Tools of nutrition education- merits and demerits, curriculum designs for nutrition education, nutrition education through health care systems.

Formulation of realistic developmental health plans based on needs with special reference to vulnerable group population and women.

Healthy nutrition through local produce by adequate intake of nutritious diet.

**UNIT-III**

**Population and Food availability**

Size and growth rate of population in India. The food problem and policy.

Measures to solve problem. New agricultural strategy.

Food security in India, estimates of hunger, problems of Food security in India, food deprivation.

Effective food security management.

Intra family food distribution, food fads and fallacies.

Demography, vital statistics and population control.

**UNIT-IV**

**Nutrition Intervention Programmes and Nutritional Health Programmes**

National- ICDS, Nutritious noon meal scheme, NNMB, PHC, MCH, MNP  
International - CARE, WHO, FAO, UNICEF.  
National Health Programmes- NTCP, NFCP, NLMP, MEP, AIDS control  
programme, National Immunisation Programme and IDDC.

## UNIT-V

**Determinants of health-** Menace of population- hazards of agriculture, water and sanitation, air and health.

Epidemiology and control of communicable diseases – definition, etiology, transmission of bacterial, viral, parasitic infections, HIV and Hepatitis.

Vaccine preventable diseases.

### References

1. Philips Foster and Howaid D. Leathers, (1999), The World Food Problem Tackling the Causes of Under Nutrition in the Third World, second edition. Lynne Rienner Publishers, Inc.
2. World Food Programme Enabling Development Food Assistance In South Asia, Publication Prepared By WFP Regional Office For South Asia.
3. Lillian Langseth, (1996), Nutritional Epidemiology- Possibilities And Limitations, International Life Sciences Institute.
4. Ghai O.P. And Gupta.P,(1999), Essential Preventive Medicine- A Clinical And Applied Orientation, Vikas Publishing House Pvt. Ltd.
5. The State Of Food Insecurity In The World(2000), Food And Agriculture Organizations Of The United Nations, Rome, Italy.
6. National Workshop On Alleviating Micronutrient Deficiency- Role Of Horticulture And Home Gardens – Background Papers Organized By M.S.Swaminathan Research Foundation, Chennai- 600113, Friday 29, 2001.
7. Food And Nutrition Bulletin,(1997), Supplement- Ending Malnutrition By 2020 An Agenda For Change In The Millennium.
8. National Conference On Opportunities And Challenges For Preventing Micronutrient Malnutrition Through ICDS, (1997), Sep 21-22, 2000. Conference Proceedinngs.
9. Preventing Micronutrient Malnutrition- A Guide To Food Based Approaches, (1997), A Manual For Policy Makers And Programme Planners Prepared By Food And Agriculture Organizations Of The United Nations And International Life Sciences Institute.
10. Ruedar Datt And Sundaram K.P.M, (1997), India Economy, S. Chand And Company Ltd., Ram Nagar, New Delhi-110055.

**PAPER III – SPECIAL PAPER III  
CLINICAL NUTRITION**

**UNIT-I**

Assessment of nutritional status of the hospitalized patients, Diet counseling.  
Role of Dietitian in assessing patients needs Based on Clinical, Bio clinical,  
Biophysical and personal data.  
Current trends in nutritional support: Parenteral and enteral nutrition- Feeding of  
premature and LBW babies- pre and post operative diets  
Incorporation of Novel Therapeutic foods in the exchange lists followed in  
Hospitals, Periodical nutritional screening of patients

**UNIT II**

Etiopathophysiology, metabolic and clinical aberrations, diagnostic features,  
complications, prevention and recent advances in the nutritional management of-  
Weight imbalances, diabetes Mellitus and other metabolic disorders,  
Cardio-vascular disorders and G.I tract disorders

**UNIT III**

Etiopathophysiology, metabolic and clinical aberrations, diagnostic features,  
complications, prevention and recent advances in the nutritional management of-  
Renal disorder, Cancer, Neurological disorders, Infection & febrile conditions and  
Respiratory problems

**UNIT IV**

Nutrition and management in- Musculo skeletal disorders, Immuno deficiency &  
AIDS disorders, Liver, gallbladder and pancreatic disorders, Stress & trauma.  
History and basic principles of different alternative medicine – ayurveda ,siddha and  
naturopathy

**UNIT V**

Herbs and medicinal plants – medicinal uses  
Functional foods: Types & medicinal uses  
Antioxidants- types role & mechanism of action in scavenging free radicals, role  
in health & disease  
Phytochemicals- Occurrence, types & role in health & disease  
Probiotic & Prebiotic foods for health benefits.

## References

1. Bakhru. H.K.(2001) Indian Spices & Condiments As Natural Healers, Jaico Publishing, Mumbai
2. Syed A.A. Sharma S.C (2000) Herbal Cure For Common & Chronic Diseases, Pushtak Mahal , New Delhi
3. Gala, R, Gala,D, Gala.S.(1999), NATURE Cure For Common Diseases, Navneet Publications (India) Ltd., Chennai.
4. Manohar Murali. C. H, (2000), Ayurveda For All, Pustrak Mahal. New Delhi.Pp133-136
5. Nutrition Principals And Applications In Health Promotion By Suitir & Crowley.
6. Food, Nutrition & Dietetics By Krause & Mahan, WB Saunders Co., Philadelphia, 1979.
7. Normal & Therapeutic Nutrition By Corinne H Robinson. Merlyn. R. Lawley. Mac Million Publishers & Co.
8. Maurice Shils, James Olson & Noshe, (1994), Modern Nutrition In Health & Disease 8<sup>th</sup> Edition, Vol I & II, Lea & Febiger Co, USA.
9. Human Nutrition And Dietetics By Davidson And Passmore. English Language Book Society,1985.
10. Garrow, J.S., James W.P.T., And Rajph,A,(2000), Human Nutrition And Dietetics, 10<sup>th</sup> Edition, Churchill Livingstone.

## Journals

1. Nutrition Update Series.
  2. World Review Of Nutrition And Dietetics.
  3. Journal Of The American Dietetic Association
  4. American Journal Of Clinical Nutrition
  5. Nutrition Review.
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