



# **K.R.COLLEGE OF ARTS & SCIENCE**

(Affiliated to Manonmaniam University, Tirunelveli)

**K.R.NAGAR, KOVILPATTI - 628503**

## **DEPARTMENT OF BIOCHEMISTRY**

### **OFFERS THE FOLLOWING COURSES**

- ✦ **Certificate Course in Principles of Nutrition (I Year UG Students)**
- ✦ **Diploma Course in Food And Nutrition (II Year UG Students)**
- ✦ **Advanced Diploma in Nutrition And Dietics (III  
Year UGStudents)**

**2021- 2022**

**(Onwards)**

**Dear Student,**

Welcome to the Special Programmes in the field of Food & Nutrition offered by Department of Biochemistry. You will naturally be curious to know something about it. Let us, therefore, acquaint you with the Course and its system of working.

### **1. Introduction to the Programme**

Eating is so much a part of life that we tend to assume that we know everything about food. It is generally believed that provision of proper nourishment is mainly a question of income. This is a fallacy, since nutritionally rich foods are available at a reasonable price.

Since food sustains life and accounts for a major portion of our living expenses, it will be useful for everyone to know about:

- The nutrients contained in different items of food;
- The needs of the human body in terms of various nutrients at different stages of life;
- Consequences of taking more/wrong types of food;
- Ways of selecting food articles, and the techniques for processing, cooking and preserving them.

The focuses of the Programmes are to enable you to make the best possible choice for meeting the nutritional needs of your family. At the same time it aims at helping you choose an adequate variety of foods to suit the taste of each individual in your family. In addition, you will learn about the nature of food-borne diseases and the importance of good food habits in preventing them. You will also be acquainted with schemes of quality control, consumer rights, etc.

## 2. Answers to Some Anticipated Questions

For whom is this Programme meant? Is it only for women?

A.1 The Programme is open to men as well as women who have concern for the health of the family and the community. However, the applicant must be 16 years of age.

Does the Programme have any job potential?

A.2 The basic objective of the Certificate Programme is to acquaint you with the importance of food in ensuring healthy living for yourself, your family and your community. It, however, has potential both for wage employment and self-employment.

Q.3 Will this Programme help in taking up some other advanced Programmes?

Yes, in fact, for admission to the Diploma Programme in Nutrition and Health Education Preference will be given to those who have done this Programme, provided they fulfill other essential conditions laid down for admission to that Programme.

Q.4 What kind of evaluation will be done to assess your performance?

There will be an examination at the end of every year.

## 3. Programme Details

### Programme Structure

This programme consists of a total of 12 credits with the following three courses with credit weightage as indicated:

Course Code	Course Title	Credits
CFN-1	Certificate Course in Food and Nutrition	4
DFN-2	Diploma in Food and Nutrition	4
AND-3	Advanced Diploma in Nutrition and Dietetics	4



Duration: 1 year

Medium of Instruction: English

### Evaluation

The evaluation consists of the term-end examination (weightage 70%) and assignments (30% weightage). The following is the scheme of awarding divisions and grades:

Based on the final score obtained, the following types of certificates will be provided to the Candidates,

1. Final Score less than 40% -- Course Certificate
2. Final Score between 40% - 59 % – Certificate type of Successfully Completed
3. Final Score between 60 % - 74 %– Certificate type of Elite printed at the Top
4. Final Score between 75% - 89%– Certificate type of Elite tag with Silver Medal
5. Final Score more than 90% – Certificate type of Elite tag with Gold Medal

For successful completion of a course the student should score at least 40% marks in the term- end examination individually.

To be eligible to appear in the term-end examination, you are required to fulfill the following conditions:

1. All the required assignments have been submitted within the due dates.
2. 80% of attendance is mandatory.

### CFN1 – CERTIFICATE COURSE IN PRINCIPLES OF NUTRITION

**Paper Title: Basics in Nutrition**

#### Objectives:

Total workload: 50

To enable students to:

- 1) Learn the role of nutrients in foods and deficiency diseases.
- 2) Understand the metabolism of nutrients in health and diseases
- 3) Understand the regulation of metabolism

Unit	Topics	No of Periods
1	<b>Introduction to nutrition.</b> ✓ Food as source of nutrients, ✓ Functions of food, definition of nutrition, nutrients & energy, adequate, optimum & good nutrition, malnutrition.	10

	✓ Interrelationship between nutrition & health.	
2	<b>Components of basic food - Carbohydrates</b> ✓ Carbohydrates : Definition ✓ Functions, ✓ Classification, ✓ Food sources in body.	10
3	<b>Components of basic food – Fats and Oils</b> ✓ Composition, ✓ Saturated and unsaturated fatty acids, ✓ Classification, ✓ Food sources, ✓ Function of fats.	10
4	<b>Components of basic food – Proteins</b> ✓ Composition, ✓ Sources, ✓ Essential & non-essential amino acids, ✓ Functions, ✓ Protein deficiency.	5
5	<b>Components of basic food - Vitamins</b> ✓ Vitamins (water & fat soluble) ✓ Definition, ✓ Classification ✓ Functions.	5
6	<b>Components of basic food – Minerals</b> ✓ Macro & micronutrients. ✓ Functions, ✓ Sources. ✓ Bioavailability and deficiency of Calcium, Iron, Iodine, Sodium & Potassium	5
7	<b>Components of basic food - Water</b> Water - as a nutrient, Function, Sources, Requirement, Water balance & effect of deficiency.	5

#### References:

1. Dasgupta, S. K., Biochemistry Vol. I; n & III, Mc Millan Co. of India Limited
2. Harper, H. A. et al, A review of physiological chemistry, Los Altos, Lange medical publications, 1985.
3. Orten J. M. & Newhaus O. V, Human Biochemistry, C. V Mosby Co 1982.
4. Chatterjee Textbook of Medical Biochemistry
5. Biochemistry, U Satyanarayna, U.Chakrapani 4th edition

## DFN2 –DIPLOMA COURSE IN FOOD AND NUTRITION

### Paper Title: Therapeutic Nutrition

#### Objectives:-

Total workload: 60

The course will enable the students:

- 1) To understand the etiology, physiologic and metabolic anomalies of acute and chronic diseases and patient needs.
- 2) To know the effect of the various diseases on nutritional status and nutritional and dietary requirements.
- 3) To be able to recommend and provide appropriate nutritional care for prevention/ and treatment of the various diseases.

Unit	Topic	No. of Periods
1	<b>Therapeutic Diets:</b> <ul style="list-style-type: none"><li>✓ Basic Concept</li><li>✓ Therapeutic Adaptation of Normal Diet</li><li>✓ Factors Considered</li><li>✓ Routine Hospital Diets</li><li>✓ Mode of feeding methods</li><li>✓ Role of dietitian in the Hospital and Community</li><li>✓ Patient Care and Counseling</li></ul>	12
2	<b>Diet in Gastro intestinal tract disorders</b> <ul style="list-style-type: none"><li>✓ Gastritis, Peptic ulcer</li><li>✓ Symptoms, clinical findings, treatment, dietary modification,</li><li>✓ Adequate nutrition, amount of food, and intervals of feeding.</li><li>✓ Chemically and mechanically irrigating foods,</li><li>✓ Four stage diet (Liquid, soft, convalescent, liberalized diet).</li></ul>	12
3	<b>Diet in Diabetes mellitus</b> <ul style="list-style-type: none"><li>✓ Incidence and predisposing factors.</li><li>✓ Symptoms-types and tests for detection.</li><li>✓ Metabolism in diabetes</li><li>✓ Dietary treatment &amp; meal management</li><li>✓ Hypoglycemic agent, insulin and its types.</li><li>✓ Complication of diabetes.</li></ul>	12
4	<b>Diet for Obesity and Cardiovascular diseases</b> <ul style="list-style-type: none"><li>✓ Role of nutrition in cardiac efficiency,</li><li>✓ Incidence of Atherosclerosis,</li><li>✓ Dietary principles,</li><li>✓ Hyperlipidemia,</li><li>✓ Obesity - Dietary treatment,</li><li>✓ Sodium restricted diet,</li><li>✓ Level of sodium restriction,</li><li>✓ Sources of sodium, danger of severe sodium restriction.</li></ul>	12



5	<b>Nutrition in Cancer</b> ✓ Precautions, ✓ Diet plan for avoiding cancer, ✓ Food sources rich in antioxidants, ✓ Foods rich in fibre, ✓ Food supplements during cancer therapy	12
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**Reference: -**

1. Mahan L. K., Escott- Stump, S. and Raymond J. L. (2012): "Krause's Food and the Nutrition Care Process", 13th Edition, Elsevier.
2. Ross, A.C., Caballero B., Cousins R. J., Tucker K.L. and Ziegler T. (2014) Modern Nutrition in Health and Disease. Wolters Kluwer Health/ Lippincott Williams and Wilkins. Ed 11th
3. Garrow, J. S., James, W.P.T. and Ralph, A. (2000): Human Nutrition and Dietetics. 10th Edition, Churchill Livingstone.
4. Nix Staci (2013) William's Basic Nutrition and Diet Therapy. Elsevier Ed. 14th

**AND3 –ADVANCED DIPLOMA COURSE IN NUTRITON & DIETICS**

**PaperTitle: Family Meal Management**

**Objectives:-**

**Total workload: 60**

To enable the students:

- 1) To focus on the promotion of good health through nutrition and the primary prevention of nutrition related problems .
- 2) To deal with nutritional epidemiology.
- 3) To be aware of public policies relevant to nutrition.

Unit	Topics	No. of periods
1	<b>Introduction to meal management</b> ✓ Balanced diet ✓ Food groups ✓ The planning of balance diet ✓ Importance of meal management	10
2	<b>Nutrition in Pregnancy</b> ✓ Physiological stages of pregnancy, ✓ Nutritional requirements ✓ Food selection ✓ Complications of pregnancy.	10
3	<b>Nutrition during lactation</b> ✓ Physiology of lactation, ✓ Nutritional requirements ✓ Food sources, ✓ Calorie intake, ✓ Meal planning	10

4	<b>Nutrition during infancy and childhood</b> ✓ Infancy - growth & development, ✓ Nutritional requirements, ✓ Breast feeding, ✓ Infant formula, introduction of supplementary foods. ✓ Early childhood - growth & nutrient need, ✓ Nutrition related problems, feeding patterns.	10
5	<b>Nutrition of school children and adolescents</b> ✓ School children ✓ Nutritional requirement, importance of snacks, school lunch. ✓ Nutrition during adolescence ✓ Growth & nutrient needs, food choices, ✓ Eating habits, factor influencing needs.	10
6	<b>Nutrition during adulthood and for geriatrics.</b> ✓ Adulthood - ✓ Nutritional requirements, feeding pattern. ✓ Geriatric nutrition ✓ Factors affecting food intake and nutrient use, ✓ Nutrient needs, ✓ Nutrition related problems.	8

#### REFERENCES:

1. Beaton GH and Bengoa JM. Nutrition in Preventive Medicine. WHO (1976).
2. FAO/WHO. Preparation and use of food based dietary guidelines. Report of a jointFAO/WHO consultation: Nicosia, Cyprus. Nutrition Programme, WHO, Geneva (1996).
3. Gibney M. J., Margetts B. M., Kearney J. M. and Arab L. Public Health Nutrition. Blackwell Publishing Company (2013).
4. National Nutrition Policy. Department of Women and child Development. Ministry of Human Resource Development, New Delhi, Government of India, 1993.
5. Park.K. (2017) Park's Textbook of Preventive and Social Medicine, 24th ed. M/s Banarsida Bhanot, Jabalpur.
6. Jelliffe, D. B and Jelliffe, E.F.P. (1989) Community Nutritional Assessment, Oxford University Press.
7. Wadhwa, A. and Sharma, S. (2003) Nutrition in the Community - A text book SCN News, UN ACC/SCN Subcommittee on Nutrition