**APPENDIX – 7(R)**  
**UNIVERSITY OF MADRAS**  
**B.Sc. DEGREE COURSE IN HOME SCIENCE – CLINICAL NUTRITION AND DIETETICS**

**CHOICE BASED CREDIT SYSTEM**  
*(w.e.f 2013-14)*

I. That in the Regulations relating to B.Sc. Degree Course in Home Science – Clinical Nutrition and Dietetics under Regulation No.6- Scheme of Examinations of I to VI semesters be modified as follows:

**REVISED Scheme of Examination:**

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<tr>
<th>SEMESTER I</th>
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</table>

**PART IV**  
1.(a) Not studied Tamil upto xii std., - shall take tamil compromising of two courses (level VI std..)  
(b) Studied Tamil upto xii std. – taken Non-Tamil under Part – I shall take advance Tamil comprising of two courses.  
9c) Others who do not comes under a & b can choose non-major elective comprising of two courses.

| Soft skills | 3  | 3 | 50 | 50 |

*Common syllabus to B.Sc. Home Science - Nutrition, Food Service Management and Dietetics.*
<table>
<thead>
<tr>
<th>S.NO</th>
<th>COURSE COMPONENT</th>
<th>NAME OF SUBJECT</th>
<th>CREDITS</th>
<th>THEORY HRS.</th>
<th>PRACT HRS.</th>
<th>EXAM HRS.</th>
<th>CIA</th>
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PART IV
1.(a) Not studied Tamil upto xii std., - shall take tamil compromising of two courses (level VI std.,)
(b) Studied Tamil upto xii std. – taken Non-Tamil under Part – I shall take advance Tamil comprising of two courses.
9c) Others who do not comes under a & b can choose non-major elective comprising of two courses.

Soft skills 3 3 50 50

NON – MAJOR ELECTIVE – PAPER I & II – CREDITS – 2X2=4
# SEMESTER – III

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* Common paper to B.Sc. Home Science - Nutrition, Food Service Management and Dietetics

# SEMESTER IV

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* Common syllabus to B.Sc. Home Science - Nutrition, Food Service Management and Dietetics

### SEMESTER VI

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UNIVERSITY OF MADRAS
CHOICE BASED CREDIT SYSTEM

B.Sc. DEGREE COURSE IN HOME SCIENCE - CLINICAL NUTRITION AND DIETETICS

REVISED SYLLABUS (w.e.f.2013-14)

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SEMESTER - II

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SEMESTER - III

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* Common paper to B.Sc. Home Science - Nutrition, Food Service Management and Dietetics
**SEMESTER - V**

| Core | Paper – IX  
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|      | Human Development I* |

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* Common syllabus to B.Sc. Home Science - Nutrition, Food Service Management and Dietetics

**SEMESTER - VI**

| Core | Paper XIV -  
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|      | Food Service Management -II* |

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* Common syllabus to B.Sc. Home Science - Nutrition, Food Service Management and Dietetics

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SEMESTER IV

CORE PAPER VII – ADVANCED DIETETICS

OBJECTIVES:
To enable the students to

1. Understand the modifications in nutrient requirements for various diseases.
2. Develop skills in planning and preparation of therapeutic diets for various diseases.

Unit I Gastrointestinal Diseases
Etiology, clinical findings and dietary modifications for peptic ulcer, ulcerative colitis, sprue, celiac disease, hepatitis, cirrhosis of liver, cholecystitis, cholelithiasis and pancreatitis

Unit II Metabolic Disorders
Diabetes mellitus - Predisposing factors, clinical findings, types, metabolic changes, complications and dietary management,
Gout - Nature and occurrence of uric acid crystals, causes, symptoms and dietary management.

Unit III Renal diseases
Predisposing factors, symptoms and dietary management of acute glomerulonephritis, nephrosis, renal failure and urinary calculi; Types of dialysis and modification of diet in dialysis

Unit I Cardiovascular diseases
Predisposing factors, clinical findings and dietary management of acute and chronic diseases of the heart - Hyperlipidemia, hypertension, atherosclerosis and congestive cardiac failure
Unit V Diet in Cancer

Causes, types, clinical symptoms and dietary modification

REFERENCES


CORE PAPER VIII – NUTRITION AND ADVANCED DIETETICS

PRACTICAL

OBJECTIVES:

To enable the students to

1. To gain skill in qualitative tests and quantitative estimation of nutrients.
2. Plan therapeutic diets.
3. Learn skills in the preparation of therapeutic diets.

1. Qualitative tests for minerals
2. Quantitative estimation of calcium
3. Quantitative estimation of phosphorus
4. Quantitative estimation of vitamin C
5. Demonstration Experiments.
   a) Estimation of Iron
   b) Qualitative tests for vitamin A
   c) Quantitative estimation of carotene

PLANNING AND PREPARATION OF DIETS FOR

1. Peptic Ulcer
2. Ulcerative Colitis
3. Hepatitis
4. Cirrhosis of Liver
5. Diabetes Mellitus
6. Gout
7. Nephritis
8. Nephrosis
9. Atherosclerosis & Hypertension

REFERENCES

ALLIED PAPER IV - COMMUNITY NUTRITION

OBJECTIVES:

1. To enable students to understand the importance of nutrition in national progress and the significance of assessment of nutritional statues.

2. To recognize the solutions to overcome problems of malnutrition in the company and the role of national and international agencies in this area.

Course Content

1. (a) Nutrition and health in National development
   (b) Nutritional problems confronting our country – The causes of malnutrition in India-
   Balances food production and population growth.

2. Methods of assessment of nutritional status
   - Sampling techniques.
   - Identification of risks groups.
   - Direct assessment – Diet surveys, Authropometry, Clinical and Biochemical estimations.
   - Indirect assessment – food balance sheets and Agricultural data, Ecological parameters and vital statistics.
   - Use of growth charts.

3. Nutrition intervention schemes in the company lecture and demonstration, nutrition exhibitions and visual aids.

4. National and International agencies in community nutrition
   ICDS, SNP, ANP, Midday meal programme, FAO, WHO, UNICEF, CARE, AID, ICMR, CSIR, NIN, CFTRI

5. Breast feeding and its implications, Hazards pf bottle feeding – Review

6. Weaning foods-planning, formulating and preparing importance of correct and timely weaning – Review


8. Recent advances in community nutrition research-Fortification & enrichment of foods.
REFERENCES

   Monograph series No. 53-geneva.
   Nutritional studies No.18 Rome
5. Shanti ghosh-1977. The feeding and care of infants and young children, voluntary
   Health Association of India-New Delhi.
   publishers, New Delhi.

PRACTICALS

The objectives of this practical course are to enable the students to learn and prepare
different types of visual aid for the community, to gain practical experience in giving
demonstration and conducting survey and other methods of assessments.

Course outline:

1. Diet and Nutrition suveys
   a) Identifying vulnerable and atrisk groups.
   b) Diet survey and breast feeding and weaning practices of specific groups.
   d) Use of anthropometric measurements in children.
2. Methods of Extension used in community-
   a) Preparation of visual aids-charts, posters models, etc. for exhibition.
   b) Lecture and Method Demonstrations to target groups.
3. Field visits to –
   a) Observe the working of nutrition programmes.
   b) Hospitals to observe nutritional deficiencies.
ELECTIVE I - ENTREPRENEURAL DEVELOPMENT

OBJECTIVES:

a) Creating an awareness about entrepreneurship as an effective to a “White collar job”.

b) Students can be taken to trade fairs to collect information on industrial products of their interest.

c) Students visits to financial institutions industrial association, research institutions and banks would help them in collecting information on availability of finance, technology, raw material and export potential.

Alumini Association-Ex-students of the institution who has set up their own enterprises can be invited to talk to the students to take up an entrepreneurial career.

UNIT I
Importance of entrepreneurship and its relevance in career growth.
Entrepreneur, entrepreneurship and enterprise.
Concept and development
Characteristics of entrepreneurs
Developing entrepreneurial competencies

UNIT II
Types of Enterprises and Ownership
Manufacturing, Service and Franchise.
Large, medium, SSIM tiny and cottage industries.
Limited, public limited, Private limited.
Partnership, Sole Proprietoeship.
Advantages and disadvantages of types of ownership.
Employment, Self employment and Entrepreneurship.

UNIT III
Financial management – Importance and Techniques
Management of working capital, reinforcement of the concept of working capital.
Factors to be controlled in managing working capital-Tools ad Techniques.
UNIT IV
Marketing management –Marketing for small business
Strategies for sales promotion-tools and techniques for sale promotion, pricing policy and its implications on sales.
Export marketing- Understand the International Business Environment-Procedures and formalities-Do’s and Dont’s for export
Inventory Control and Quality Management-Defining quality and its concept-Aspects of quality management-ISI 9000 certification-Total Quality Management (TQM)
Financial support from financial institutions

UNIT V
Legal complications
Income tax
Sales tax
Excise
Labour laws, factory act, pollution control etc.

REFERENCES
PRACTICALS

1) Visit to the Trade fair
2) Ex. Students enterprise-Visit
3) Visit to a Small Scale Industry, Financial Institution Association, Research Institution and bank

SEMESTER VI

CORE PAPER XIII - CLINICAL NUTRITION

OBJECTIVES

To enable the students to

1. Learn the basic principles of clinical nutrition.
2. Understand the clinical significance of biochemical findings.

THEORY

Unit I Metabolism

Review of digestion and absorption of proximate principles
Carbohydrate - Glucose transport, glycolysis, metabolism of lactate and pyruvate, citric acid cycle, gluconeogenesis, pentose phosphate pathway.
Amino acid - Intermediary metabolism and urea cycle
Lipid - Intestinal resynthesis of TG, transport, oxidation of fatty acids, biosynthesis of cholesterol.

Unit II Genetic control of metabolism

Nucleic acids, DNA replication, RNA – Synthesis, types and functions, Genetic code, protein biosynthesis, Recombinant DNA Technology

Unit III Biochemical changes due to disorders of metabolism

Diabetes mellitus, Inborn errors of metabolism with respect to lactose, galactose, phenylalanine and uric acid (Gout)
Unit IV Digestive System

Unit V Renal System
b. Water and electrolyte losses and replenishment. effect of dehydration and water intoxication.

REFERENCES
CORE PAPER XV - CLINICAL NUTRITION PRACTICAL

OBJECTIVES:
To enable the students to
1. Develop skills in analysis of urine and estimation in serum.

PRACTICAL
1. Analysis of urine
2. Collection of blood and separation of plasma and serum
3. Estimation of blood glucose
4. Estimation of total protein
5. Determination of A/G ratio
6. Estimation of serum urea
7. Estimation of serum creatinine
8. Estimation of cholesterol
9. Estimation of Bilirubin

REFERENCES
1. ICMR. 1978. Laboratory techniques in Nutrition. Hyderabad, NIN.