

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:

SEMESTER I

S.NO	COURSE COMPONENT	NAME OF SUBJECT	CREDITS	THEORY HRS.	PRACT HRS.	EXAM HRS	CIA	EXTERNAL
1.	PART I	Paper -I Language	3	6	-	3	25	75
2.	PART II	Paper –I English	3	6	-	3	25	75
3	CORE	Paper I - Food Science*	4	6	-	3	25	75
4	CORE	Paper II - Microbiology*	4	6	-	3	25	75
5	ALLIED- Paper – I	Paper I – Chemistry - I	5	4	2	3	25	75
	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.

SEMESTER II

S.NO	COURSE COMPONENT	NAME OF SUBJECT	CREDITS	THEORY HRS.	PRACT HRS.	EXAM HRS.	CIA	EXTERNAL
1.	PART I	Paper -II Language	3	6	-	3	25	75
2.	PART II	Paper –II English	3	6	-	3	25	75
3	CORE	Paper III - Human physiology*	4	6	-	3	25	75
4	CORE	Paper IV - Microbiology and physiology practical*	4	-	6	3	40	60
5	ALLIED	Paper II - Chemistry II	5	4	2	3	25	75
	<p>PART IV</p> <p>1.(a) Not studied Tamil upto xii std., - shall take tamil compromising of two courses (level VI std.,)</p> <p>(b) Studied Tamil upto xii std. – taken Non-Tamil under Part – I shall take advance Tamil comprising of two courses.</p> <p>9c) Others who do not comes under a & b can choose non-major elective comprising of two courses.</p>							
	Soft skills		3			3	50	50

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

SEMESTER – III

S.NO	COURSE COMPONENT	NAME OF SUBJECT	CREDITS	THEORY HRS.	PRACT HRS.	EXAM HRS.	CIA	EXTERNAL
1	PART - I	Paper III - Language	3	6	-	3	25	75
2	PART - II	Paper III - English	3	6	-	3	25	75
3	PART – III Core Courses	Paper V – Family Meal Management*	4	4	2	3	25	75
4		Paper VI – Nutrition – I*	4	4	2	3	25	75
5	ALLIED	Paper – III Biochemistry*	5	4	-	3	25	75
6	PART – IV 2. Soft Skill - III		3	-	-	3	50	50
7	3. Environmental Studies		-	2	-	Examinations will be held in IV Semester	-	Examinations will be held in IV Semester

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

SEMESTER IV

S.NO	COURSE COMPONENT	NAME OF SUBJECT	CREDITS	THEORY HRS.	PRACT HRS.	EXAM HRS.	CIA	EXTERNAL
1	PART - I	Paper IV - Language	3	6	-	3	25	75
2	PART - II	Paper IV - English	3	6	-	3	25	75
3	PART – III Core Courses	Paper – VII Advanced Dietetics	4	6	-	3	25	75
4		Paper – VIII Nutrition and Advanced Dietetics Practical	4	-	6	3	40	60
5	ALLIED	Paper – IV Community Nutrition	5	6	-	3	25	75
6	PART – IV 2. Soft Skill -IV		3	-	-	3	50	50
7	3.Environmental studies		2	-	-	3	25	75

SEMESTER V

S.NO	COURSE COMPONENT	NAME OF SUBJECT	CREDITS	THEORY HRS.	PRACT HRS.	EXAM HRS.	CIA	EXTERNAL
1	PART – III Core Courses	Paper – IX Human Development I*	4	6	-	3	25	75
2		Paper – X - Food Service Management - I*	4	6	-	3	25	75
3		Paper XI - Nutrition – II*	4	6	-	3	25	75
4		Paper XII - Sports Nutrition*	4	6	-	3	25	75
5	Project/ Elective 1	Entrepreneurial Development	5	6	-	3	25	75
6	PART - IV 4. Value Education		2	-	-			

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SEMESTER VI

S.NO	COURSE COMPONENT	NAME OF SUBJECT	CREDITS	THEORY HRS.	PRACT HRS.	EXAM HRS.	CIA	EXTERNAL
1	PART – III Core Courses	Paper XIII - Clinical Nutrition	4	6	-	3	25	75
2		Paper XIV - Food Service Management -II*	4	6	-	3	25	75
3		Paper XV - Clinical Nutrition Practical	4	6	-	3	40	60
4	Project/ Elective II	Health psychology*	5	6	-	3	25	75
5	Elective III	Human development – II*	5	6	-	3	25	75
6	PART V Extension Activities		1		-			

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

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)

SEMESTER - I

Core	Paper I - Food Science*
Core	Paper II - Microbiology*

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

SEMESTER - II

Core	Paper III - Human physiology*
Core	Paper IV - Microbiology and physiology practical*

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

SEMESTER - III

Core	Paper V – Family Meal Management*
Core	Paper VI – Nutrition – I*
Allied	Paper – III Biochemistry*

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

SEMESTER - V

Core	Paper – IX Human Development I*
Core	Paper – X - Food Service Management - I*
Core	Paper XI - Nutrition – II*
Core	Paper XII - Sports Nutrition*

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

SEMESTER - VI

Core	Paper XIV - Food Service Management -II*
Elective – II	Health psychology*
Elective – III	Human development – II*

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

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

1. Antia. F.P.. 1989. Clinical Dietetics and Nutrition. Bombay, Oxford University Press.
2. Passmore. P.and Eastwood. M.A. 1986. Human Nutrition and dietetics. London,ELBS.
3. Robinson. C.H. et al. 1994. Normal and Therapeutic Nutrition. New York, Macmillan and Co.
4. Williams. S.R. 1994. Nutrition and Diet Therapy. New York., Mosby Mirror Publishing Co.
5. Sri Lakshmi. B. 2002. Dietetics. New Delhi ,New Age International Pub. Ltd.
6. MAIhan,K.N.and Arlim(2002) Krauses Food Nutrition and Diet Therapy. W.B Saunders Company, Philadelphia.
7. Whitney, E.N. and Rolfes, S.R., 1999, Understanding Nutrition, West Wadsworth - An International Thomson Publishing Company, New York.

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.
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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

1. Antia. F.P.. 1989. Clinical Dietetics and Nutrition. Bombay, Oxford University Press.
2. Passmore. P.and Eastwood. M.A. 1986. Human Nutrition and dietetics. London,ELBS.
3. Robinson. C.H. et al. 1994. Normal and Therapeutic Nutrition. New York, Macmillan and Co.
4. Williams. S.R. 1994. Nutrition and Diet Therapy. New York., Mosby Mirror Publishing Co.
5. Sri Lakshmi. B. 2002. Dietetics. New Delhi ,New Age International Pub. L

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 statuses.
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, Anthropometry, 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
7. Nutrition and infection-relationship, immunization and its importance.
8. Recent advances in community nutrition research-Fortification & enrichment of foods.

REFERENCES

1. McLaren.D.S., ED-1983. Nutrition in the Community. John Weley and sons.
2. Jelliffe. D.B.-1996. The Assessment of Nutritional status on the community-WHO Monograph series No. 53-geneva.
3. Reh, Emma-1976. Manual on Household Food consumption surveys, FAO. Nutritional studies No.18 Rome
4. Shukla, P.K.- 1982. Nutritional problem of India-prentice Hall of India Pvt. Ltd., New Delhi.
5. Shanti ghosh-1977. The feeding and care of infants and young children, voluntary Health Association of India-New Delhi.
6. Ibrahim. G.J-1983. Nutrition in mother and children Health. London, Macmillan.
7. Ritchey, S.J. and J. Taper-1983. Maternal and child Nutrition. Harper and Row 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 - ENTREPRENEURIAL 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 associationa, 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 enterprice.

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.

Books of Account- Importance of accounting assessment. Different books and its relevance. Support. Stationery and its use. Operating mechanism

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

- 1) Jain P.C, (1998). Handbook of New Entrepreneurs, Oxford University Press.
- 2) Jan Narayan Vyas, (1947). Small Scale Industry Handbook, Grantjistran.
- 3) Shiv Khera, (1998). You Can Win, MacMillan, India.
- 4) Charles Hozgrew, (1997). Cost Accountancy, A Managerial Emphasis, PHI.
- 5) Mitch McGremmon, (1995). Unleash the Entrepreneur Within, FT-Pitman.
- 6) Holt, (1997). Entrepreneurship, New Venture creation, PHI.
- 7) Philip Kotter, (1997). Marketing Management, Prentice Hall, India, (PHI).
- 8) Pandey, I.M, (1998). Management Accounting, Vikas.
- 9) Everette Adam, (1997). Production and Operational Management, PHI.
- 10) Azhav Kazmi, (1997). Business Policy, Tata McGraw Hill (TMH).

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, phenyl alanine and uric acid (Gout)

Unit IV Digestive System

- a. Diarrhoea, constipation. Gastritis, ulcers, colitis, malabsorption syndrome -Nutritional implications.
- b. Metabolic and nutritional implications of Hepatitis. Cirrhosis of liver. Hepatic coma. Pancreatitis. Cholecystitis and Cholelithiasis.

Unit V Renal System

- a. Metabolic and nutritional implications of Nephritis. Nephrotic syndrome. Renal failure. Renal calculi and Dialysis.
- b. Water and electrolyte losses and replenishment. effect of dehydration and water intoxication.

REFERENCES

1. Bamji et al. 1996. Text Book of Human Nutrition. New Delhi, Oxford and IBH Publishing Co. Pvt. Ltd.
2. Devlin. T.M.. 1997. Text book of Clinical Biochemistry. New York, John Wiley and Sons.
3. Harper. H.A.. 1997. Review of Physiological Chemistry. 21st edition. Los Angeles, Lange Medical Publications.
4. Leninger. A. L.. 1992. The molecular basic of cell structure and functions. New Delhi, Kalyani Publishers.
5. Ramakrishnan. S. and Venkat Rao.. 1995. Nutritional Biochemistry. Chennai, T.R. Publications.
6. Shils et al. 1994. Modern Nutrition in Health and Disease. Vol. I and II. New York, Lea and Febiger.
7. Williams S.R.. 1993. Nutrition and Diet Therapy. New York, Mosby Publishers.

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.
2. Oser. B.L. 1965. Hawk's Physiological Chemistry. New Delhi, Tata McGraw Hill Publishing Co.
3. Chawla. R. 1995. Practical Clinical Biochemistry. Methods and Interpretations. New Delhi, Jaypee Brothers. Medical Publishers (P) Ltd.
4. Pattabiraman. T.N. 1998. Laboratory Manual in Biochemistry. New Delhi, All India Publishers and distributors..
