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VEER NARMAD SOUTH GUJARAT UNIVERSITY

University Campus, Udhna-Magdalla Road, SURAT - 395 007, Gujarat, India.

વીર નર્મદ દક્ષિણ ગુજરાત યુનિવર્સિટી

યુનિવર્સિટી કેમ્પસ, ઉદના-મગદલા રોડ, સુરત - ૩૯૫ ૦૦૭, ગુજરાત, ભારત.

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ક્રમાંક : એકે./પરિપત્ર/૫૯૨૫/૨૦૨૦

તા. ૧૮/૦૭/૨૦૨૦

પ્રતિ,
આચાર્યશ્રી,
શેઠ પી.ટી.મહિલા કોલેજ ઓફ
આર્ટ્સ એન્ડ હોમસાયન્સ,
વનિતા વિશ્રામ,
અઠવાગેટ, સુરત.

વિષય:- P.G.Diploma in Dietetics નો રીવાઈઝ અભ્યાસક્રમ અંગે.

સુજા શ્રી,

સવિનય જણાવવાનું કે, P.G.Diploma in Dietetics નો રીવાઈઝ અભ્યાસક્રમ અંગે ચર્ચા કરતા હોમસાયન્સ વિષયની અભ્યાસસમિતિની તા.૨૧/૦૩/૨૦૨૦ની સભાનાં ઠરાવ ક્રમાંક: ૫ અન્વયે નીચે મુજબ ભલામણ કરેલ છે જે ભલામણ વિનયન વિદ્યાશાખાનાં અધ્યક્ષશ્રીએ વિનયન વિદ્યાશાખાની મંજૂરીની અપેક્ષાએ વિનયન વિદ્યાશાખાવતી મંજૂર કરી એકેડેમિક કાઉન્સિલને કરેલ ભલામણ એકેડેમિક કાઉન્સિલે તેની તા.૩૦/૦૬/૨૦૨૦ ની સભાનાં ઠરાવ ક્રમાંક: ૧૨૭ અન્વયે મંજૂર કરેલ છે. તેની જાણ સંબંધકર્તા શિક્ષકો અને વિદ્યાર્થીઓને કરવી, તદ્દઉપરાંત તેનો અમલ કરવો.

હોમસાયન્સ વિષયની અભ્યાસસમિતિની તા.૨૧/૦૩/૨૦૨૦ની સભાનાં ઠરાવ ક્રમાંક: ૫

:: આથી ઠરાવવામાં આવે છે કે, શૈક્ષણિક વર્ષ ૨૦૨૦-૨૧ થી અમલમાં આવનાર P.G. Diploma in Dietetics નો રીવાઈઝ અભ્યાસક્રમ સર્વાનુમતે સ્વીકારી તે મંજૂર કરવા વિનયન વિદ્યાશાખાને ભલામણ કરવામાં આવે છે.

એકેડેમિક કાઉન્સિલે તેની તા.૩૦/૦૬/૨૦૨૦ ની સભાનાં ઠરાવ ક્રમાંક: ૧૨૭

:: આથી ઠરાવવામાં આવે છે કે, હોમસાયન્સ વિષયની અભ્યાસસમિતિએ તેની તા.૨૧/૦૩/૨૦૨૦ની સભાનાં ઠરાવ ક્રમાંક: ૫ અન્વયે ભલામણ કરેલ તેમજ વિનયન વિદ્યાશાખાના અધ્યક્ષશ્રીએ વિનયન વિદ્યાશાખાવતી સ્વીકારેલ શૈક્ષણિક વર્ષ ૨૦૨૦-૨૧ થી અમલમાં આવનાર P.G. Diploma in Dietetics નો રીવાઈઝ અભ્યાસક્રમ મંજૂર કરવામાં આવે છે.

બિડાણ : ઉપર મુજબ

R. B. R. K. A.
2007 m
ઈ.ચા. કુલસચિવ

પ્રતિ,

- ૧) અધ્યક્ષશ્રી, વિનયન વિદ્યાશાખા.
- ૨) પરીક્ષા નિયામકશ્રી, પરીક્ષા વિભાગ, વીર નર્મદ દ. ગુ. યુનિવર્સિટી, સુરત.
- ૩) પી.જી. વિભાગ, વીર નર્મદ દ. ગુ. યુનિવર્સિટી, સુરત.

...તરફ જાણ તેમજ અમલ સારૂ.

MANAGED BY VANITA VISHRAM

SHETH P. T. MAHILA COLLEGE OF ARTS AND HOME SCIENCE



**POST GRADUATE DIPLOMA IN DIETETICS
2020-2021**

DURATION- 1 YEAR INCLUSIVE OF INTERNSHIP

Department of Food Science and Nutrition
Sheth P. T. Mahila College of Arts and Home Science
Vanita Vishram, Surat, Gujarat, 395001

Eligibility:

Students who have obtained any one of the following degrees from any recognized University and have obtained the minimum percentage as specified below are eligible to apply for the P.G. Diploma Programme:

A: Minimum percentage is 45% or B grade for students who have the following degrees: B.Sc. Foods and Nutrition, B.Sc. Clinical Nutrition and Dietetics/Nutrition and Dietetics, B.Sc. Public Health and Nutrition and B.Sc. Applied Nutrition

B. Minimum percentage is 45% or B grade for students with bachelor degree in the following:

1. Pure Sciences/life science (Biosciences, Botany, Zoology, Chemistry, Biochemistry, Microbiology, Biotechnology, Medical Technology, Physiology, Clinical Research, Clinical and Laboratory Sciences)
2. Medical and Para-medical sciences (MBBS, BAMS, BHMS, BDS, BPT, PGDMLT and Nursing).

NOTE: *Students should have passed Standard XII in Science stream.

Objectives:

This programme will enable:

1. Students to develop as professionals with expertise in medical nutrition management/dietetics for services in hospitals and clinics
2. To develop capabilities to provided preventive and promotive care across the life cycle

PRINCIPAL

POST GRADUATE DIPLOMA IN DIETETICS

SEMESTER I

Sr. No.	Subject	L	P/T	Internal evaluation	External evaluation	Total
1	Nutritional Biochemistry (Th)	04	00	30	70	100
2	Physiology (Th)	04	00	30	70	100
3	Medical Nutrition Therapy I- (Th)	04	00	30	70	100
4	Medical Nutrition Therapy I- (Pr)	00	04	50	50	100
5	Advanced Nutrition (Th)	04	00	30	70	100
6	Research Project	00	04	100	--	100
		16	08	270	330	600

SEMESTER II

Sr. No.	Subject	L	P/T	Internal evaluation	External evaluation	Total
1	Medical Nutrition Therapy II- (Th)	04	00	30	70	100
2	Medical Nutrition Therapy II- (Pr)	00	04	50	50	100
3	Dietetic Techniques and Patient Counseling (Pr)	00	04	50	50	100
4	Pediatric Nutrition (Th)	04	00	30	70	100
5	Internship	00	08	100	100*	200
		08	16	260	340	600

*** External Evaluation is done by the Dietitian of the institution where students are placed for internship.**

Ist

SEMESTER

SEMESTER 1

NUTRITIONAL BIOCHEMISTRY (Th)

Objectives:

This course will enable the students to:

1. Augment the knowledge of biochemistry acquired at the undergraduate level
2. Understand the mechanisms adopted by the human body for regulation of metabolic pathways
3. Develop an insight into interrelationships between various metabolic pathways
4. Understand integration of cellular level metabolic events to nutritional disorders and imbalances.
5. Apply the knowledge for medical nutrition management in various disease conditions

Course	Hours/week	Credit	Exam hours	Marks-Internal	Marks-external	Total
Nutritional Biochemistry	4	4	3	30	70	100

Module No	Topics and Details	No. of Lectures
1	<ul style="list-style-type: none">a. Membrane structure, composition and Transport of metabolites across membranesb. Acid base balance and its regulationc. Enzymes<ul style="list-style-type: none">- Enzyme specificity, regulation of enzyme activity and synthesis- Enzymes in clinical diagnosisd. Detoxification in the body-metabolism of xenobiotics (Phase I and Phase II enzymes)e. Cell Signalling: Overview of extracellular cell signalling, G protein couple receptors and their effectors, enzyme linked receptors and their effectors, second messengers, map kinase pathwaysf. Free radicals, ROS and oxidative damage	20
2	<p>Carbohydrate Metabolism:</p> <ul style="list-style-type: none">a. Intestinal transport of carbohydrates,b. Transport of glucose across various cells,c. Cellular metabolism of carbohydratesd. Glycogen metabolism.e. Regulation of carbohydrate metabolism at substrate level, enzyme level, hormonal level and organ level,f. Disorders of carbohydrate metabolism. <p>Metabolism of Lipids:</p> <ul style="list-style-type: none">a. Intestinal transport of lipids,b. Cellular uptake and metabolism of lipids (beta-oxidation, denovo synthesis	20

	<p>of fatty acids, synthesis and breakdown of unsaturated fatty acids, cholesterol, phospholipids and triacylglycerol)</p> <p>c. Lipoprotein metabolism, -VLDL and LDL ('Forward' Cholesterol transport) -VLDL and LDL (Endogenous TAG transport), -HDL ('Reverse' Cholesterol transport),</p> <p>d. Regulation of lipid metabolism at substrate level, enzyme level, hormonal level and organ level,</p> <p>e. Disorders of lipid metabolism, Dyslipidemias, Lipid storage diseases</p> <p>Protein Metabolism:</p> <p>a. Metabolism of amino acids- biosynthesis and catabolism - energy, glucose and ketone bodies, protein amino acids, non-protein amino acids (including urea cycle, transamination, one-carbon metabolism), Creatine and creatinine,</p> <p>b. Plasma proteins – Nature, properties and functions,</p> <p>c. Biologically active peptides, polypeptides and transport proteins,</p> <p>d. Inborn errors of amino acid metabolism</p> <p>Intermediary Metabolism:</p> <p>a. Review of regulation of intermediary metabolism-</p> <p>b. equilibrium and non-equilibrium reactions,</p> <p>c. committed steps, allosteric modifications,</p> <p>d. Cross-over theorem,</p> <p>e. starve-feed cycle,</p> <p>f. caloric homeostasis and futile cycles,</p> <p>g. Tricarboxylic acid cycle</p> <p>Biological Oxidation : Electron transport chain and oxidative phosphorylation</p>	
3	<p>Biochemical aspects of purine and pyrimidines</p> <p>a. Metabolism of purines</p> <p>b. Metabolism of pyrimidines</p> <p>c. Role of purine and pyrimidine nucleotides in metabolism.</p> <p>Biochemistry of Nucleic Acids</p> <p>a. Metabolism of DNA</p> <p>b. Metabolism of RNAs</p> <p>c. DNA replication, mutation, repair and recombination concepts</p> <p>d. Disorders of nucleic acid metabolism</p>	15
4	<p>Nutrient and drug interactions.</p> <p>a. Effect of drugs on ingestion, digestion, absorption and metabolism of food and nutrients.</p>	5

References:

1. Murray, R.K., Granner, D.K., Mayes, P.A. and Rodwell, V.W. (2000): 25th Ed. Harpers Biochemistry. Macmillan Worth Publishers.
2. Nelson, D.L. and Cox, M.M. (2000): 3rd Ed. Lehninger's Principles of Biochemistry, Macmillan Worth Publishers.
3. Devlin, T.M. (1997): 4th Ed. Text book of Biochemistry with Clinical Correlations, Wiley Liss Inc
4. Stryer, L. (1998): 4th Ed. Biochemistry, WH Freeman and Co.
5. Conn, E.E., Stumpf, P.K., Bruening, G. and Doi, R.H. (2001): 5th Ed. Outlines of Biochemistry, John Wiley and Sons.
6. Voet, D. Voet, J.G. and Pratt, C.W. (1999). Fundamentals of Biochemistry.
7. Tietz, N.W. (1976) Fundamentals of Clinical Chemistry. WB Saunders Co.
8. King, E.J. and Wootton, I.D.P. (1956). 3rd ed. Micro-Analysis in Medical Biochemistry. J and A Churchill Ltd.
9. Plummer, D.T. (1987). 3rd ed. An Introduction to Practical Biochemistry. McGraw-Hill Book Co.

PHYSIOLOGY (Th)

Objectives:

This course will enable students to:

1. Advance their understanding of some of the relevant issues and topics of human physiology.
2. Understand the integrated functions of all systems and the grounding of nutritional science in Physiology.
3. Understand alterations of structure and function in various organs and systems in disease conditions.

Course	Hours/week	Credit	Exam hours	Marks-Internal	Marks-external	Total
Physiology	4	4	3	30	70	100

Module No	Topics and Details	No. of Lectures
1	<p>Unit 1. Cell Structure Levels of cellular organization Types of cell organelles, tissues, organs and systems Cell Multiplication</p> <p>Unit 2. Tissues Structure, physiological properties and function of Epithelial, Muscle, Nervous and skeletal (Bone and cartilage) tissue</p>	10
2	<p>Unit 1. Gastrointestinal system Structure, physiology and functions of different organs and role of hormones and enzymes</p> <p>Unit 2. Excretory System Components of Excretory System, Kidney: Structural and functional relation Urine formation Regulation of water balance Regulation of acid base balance</p>	15
3	<p>Unit 1. Heart and Circulation Blood and its constituents, Lymph, Basic Structure of Heart, Cardiac cycle, cardiac output, ECG Systematic, pulmonary, coronary and portal circulation Blood pressure homeostasis</p> <p>Unit 2. Respiratory System Structural components of Respiratory System External and Internal respiration Mechanical, Chemical and Neural control of respiration</p>	15
4	<p>Unit 1: Brain and Nervous system Central and autonomic nervous system, Structure and properties of nerve, transmission of impulse, resting and action potential, Reflex action, reflex arc.</p>	15

	<p>Unit 2: Reproductive System Female Reproductive System – Structure and function of Ovary, Uterus, Menstrual cycle Male reproductive system – Structure and Function of Testis, Spermatogenesis.</p>	
	<p>Unit 1. Endocrine System Different endocrine glands and their major functions, Hormone-Receptors, mode of action, second messenger system, negative feed back control.</p>	5

References:

1. West, J.B.: Best and Taylor's Physiological Basis of Medical Practice, 11th Edition.
2. Chatterjee, C.C. (2002): Human Physiology: Medical Allied Agency, Calcutta.
3. Guyton and Hall (2003): Text Book of Medical Physiology, 9th Edition, Prism Books Pvt. Ltd., W.B. Sanders Company, USA.
4. Tortora (2003) Principles of Anatomy and Physiology, John Wiley and sons.
5. Keel and Neil: Samson and Wright's Applied Physiology (12th edition), Oxford University Press. London.
6. Ross and Wilson: Anatomy and physiology in Health and Illness, 8th Edition, Church Hill Livingstone, N.Y.

MEDICAL NUTRITION THERAPY – I (Th)

Objectives:

The course will enable the students to:

- Understand the etiology, physiologic and metabolic anomalies of acute and chronic diseases and patient needs.
- Know the effect of the various diseases on nutritional status and nutritional and dietary requirements.
- Be able to recommend and provide appropriate nutritional care for prevention/ and treatment of the various diseases.

Course	Hours/week	Credit	Exam hours	Marks-Internal	Marks-external	Total
Medical Nutrition Therapy I	4	4	3	30	70	100

Module No	Topics and Details	No. of Lectures
1	<p>Unit 1. Nutritional screening and assessment of nutritional status of hospitalized and outdoor patients.</p> <p>Identification of high risk patients. Assessment of patient needs based on interpretation of patient data – clinical, biochemical, biophysical, personal etc.</p> <p>Unit 2. Exchange list as a tool for planning diets</p>	15
2	<p>Unit 1. Nutritional care for weight imbalance</p> <p>1. Obesity- Aetiology, types, dietary principles and management Behaviour modification Non dietary management- Pharmacological, Surgical, Physical activity and exercise</p> <p>Unit 2. Underweight</p> <p>Aetiology Dietary principles and management Eating disorders – Anorexia Nervosa and Bulimia</p>	15
3	<p>Etiopathophysiology, metabolic and clinical aberrations, complications, prevention and recent advances in the medical nutritional management of the following:</p> <p>Unit 1. G.I. Tract Disorders</p> <ul style="list-style-type: none"> • Pathophysiology and diet therapy of all G.I. disorders and their nutritional care- Disorders of oesophagus, stomach, small intestine, large intestine • Malabsorption syndrome • Diagnostic tests for G.I. disease 	15

	<p>Unit 2. Liver and Biliary System</p> <ul style="list-style-type: none"> • Physiology and function of liver gall bladder and pancreas • Pathophysiology and its implications • Disorders and diet therapy 	
4	<p>Etiopathophysiology, metabolic and clinical aberrations, complications, prevention and recent advances in the medical nutritional management of the following:</p> <p>Unit 1. Respiratory Disorders</p> <ul style="list-style-type: none"> • Dietary management in following disorders – • Bronchitis • Respiratory distress syndrome • Cystic fibrosis • Chronic obstructive pulmonary disorder (COPD) • Asthma • Aspiration • Pneumonia • Lung cancer <p>Unit 2. Food Allergy</p> <ul style="list-style-type: none"> • Mechanism of food allergy • Biochemical and immune-testing • History and food record • Elimination diets <p>Unit 3. Disorders of Adrenal Cortex, Thyroid and Parathyroid</p> <p>Functions of the gland, hormones, imbalance of hormones, symptoms and dietary care</p>	15

References:

1. Mahan, L.K. and Escott-Stump, S. (2000): Krause's Food Nutrition and Diet Therapy, 10th Edition, W.B. Saunders Ltd.
2. Shils, M.E., Olson, J.A., Shike, M. and Ross, A.C. (1999): Modern Nutrition in Health and Disease, 9th Edition, Williams and Wilkins.
3. Escott-Stump, S. (1998): Nutrition and Diagnosis Related Care, 4th Edition, Williams and Wilkins.
4. Garrow, J.S., James, W.P.T. and Ralph, A. (2000): Human Nutrition and Dietetics, 10th Edition, Churchill Livingstone.
5. Williams, S.R. (1993): Nutrition and Diet Therapy, 7th Edition, Times Mirror/Mosby College Publishing.
6. Davis, J. and Sherer, K. (1994): Applied Nutrition and Diet Therapy for Nurses, 2nd Edition, W.B. Saunders Co.
7. Walker, W.A. and Watkins, J.B. (Ed) (1985): Nutrition in Pediatrics, Boston, Little, Brown & Co.
8. Guyton, A.C. and Hall, J.E. (1999): Textbook of Medical Physiology, 9th Edition, W.B. Saunders Co.
9. Ritchie, A.C. (1990): Boyd's Textbook of Pathology, 9th Edition, Lea and Febiger, Philadelphia.
10. Fauci, S.A. et al (1998): Harrison's Principles of Internal Medicine, 14th Edition, McGraw Hill.
11. World Cancer Research Fund (1997). Food, Nutrition and the Prevention of Cancer- A Global perspective, Washington E.D. WCRF.

MEDICAL NUTRITION THERAPY I(Pr)

Objectives:

This course will enable students to:

- a. Prescribe diets and counsel patients to provide appropriate therapeutic nutritional care and counselling
- b. Develop standards of dietetic practice

For each of the topics, the practicals should focus on:

Commonly used tests for diagnosis of various diseases – system – wise

- Interpretation of patient data and diagnostic tests and drawing up of patient diet prescription, using a case study approach.
- Follow up – acceptability of diet prescription, compliance, discharge diet plan for each of the diseases discussed in the theory.
- Planning and preparation of diets for patients with common multiple disorders and complications and discharge diet plans.

Course	Practical Hours/week	Credit	Exam hours	Marks-Internal	Marks-external	Total
Medical Nutrition Therapy I (Practical)	8	4	4	50	50	100

Module No	Topics and Details	No. of Practical
1	Standardization of portion sizes for different food preparations. Assessment of Nutritional status	30
2	Review of Hospitals diets Preparation of normal routine diets generally served in a hospital 1. Modifications in Consistency and Fibre <ol style="list-style-type: none"> a. Different types of liquid diets b. Different types of semisolid / soft diets – General mechanical and pureed c. Bland Diets d. Low Fibre Diets e. Low Residue diets f. High fibre diets 	30
3	Energy Modifications <ol style="list-style-type: none"> A. Assessment of weight status and estimating energy requirements B. Energy Modifications <ol style="list-style-type: none"> a. Low Calorie Preparations b. Use of artificial sweeteners in deserts and beverages and adjuncts. c. Low Calorie Diets 	30

	<p>d. Adult weight reduction</p> <p>C. High calorie diets</p> <p>a. High calories protein diets for underweight fevers, anaemias and convalescing patients</p>	
4	<p>Bland diets</p> <p>High calories, high protein, fibre and residue restricted diets for peptic ulcer and ulcerative colitis etc. Hiatus hernia, Gastritis, Irritable bowel, Achalasia etc.</p> <p>High calorie, High Protein, moderate and fat restricted diet in Liver disease and disease of pancreas and gallbladder</p> <p>Low protein diets in hepatic encephalopathy</p> <p>Elimination diets for Allergy</p>	30

ADVANCED NUTRITION (Th)

Objectives:

This course will prepare the students to:

- 1) To understand the fundamentals of the science of nutrition.
- 2) To understand the underlying biological, chemical, & regulatory mechanism.
- 3) To understand contemporary issue in the context of current scientific knowledge.
- 4) To understand interrelationship between Nutrients.
- 5) To understand latest developments in Human Nutrition.

Course	Hours/week	Credit	Exam hours	Marks-Internal	Marks-External	Total
Advanced Nutrition	4	4	3	30	70	100

Modu l No	Topics and Details	No. of Lecture s
	<p>Body Composition and RDA</p> <ul style="list-style-type: none"> • Significance of body composition and changes through the life cycle. • Human Nutritional Requirements, methods determining human nutrient needs. <p>Energy</p> <ul style="list-style-type: none"> • Components of energy requirements: BMR, RMR, thermic effect of feeding, physical activity. • Factors affecting energy requirements, methods of measuring energy expenditure. • Regulation of energy metabolism and body weight 	10
	<p>Carbohydrates and Dietary Fibre</p> <ul style="list-style-type: none"> • Introduction of Carbohydrates, Functions, RDA, Sources and deficiency • Dietary fibre Types, sources, role and mechanism of action. • Resistant starch 	10
	<p>Proteins</p> <ul style="list-style-type: none"> • Introduction of Protein, Functions, RDA, Sources and deficiency • Amino acid and its physiological significance. • Protein Quality and supplementary protein 	10
	<p>Fats</p> <ul style="list-style-type: none"> • Introduction of Fats, Functions, RDA, Sources and deficiency • Nutritional significance of fatty acids – SFA, MUFA, PUFA • Role of n-3 and n-6 fatty acids and Prostaglandins. • Trans Fatty Acids 	10

	<ul style="list-style-type: none"> • Visible and invisible fats in diets. 	
	<p>Fat Soluble vitamins- A, D, E, K</p> <p>Structure, sources, absorption, transport, utilization, storage, excretion, functions, RDA, deficiency, toxicity, assessment of status.</p> <p>Water Soluble Vitamins- B Complex and C</p> <p>Structure, sources, absorption, transport, utilization, storage, excretion, functions, RDA, deficiency, toxicity, assessment of status.</p>	10
	<p>Minerals: (Calcium, Phosphorus and Iron)</p> <p>Structure, sources, absorption, transport, utilization, storage, excretion, functions, bioavailability, requirements and RDA, deficiency, toxicity, assessment of status</p>	10

References:

- Mahan, L.K. and Escott-Stump, S. (2000): Krause's Food Nutrition and Diet Therapy, 10th Edition, W.B. Saunders Ltd.
- Shils, M.E., Olson, J.A., Shike, M. and Ross, A.C. (1999): Modern Nutrition in Health and Disease, 9th Edition, Williams and Wilkins.
- Escott-Stump, S. (1998): Nutrition and Diagnosis Related Care, 4th Edition, Williams and Wilkins.
- Garrow, J.S., James, W.P.T. and Ralph, A. (2000): Human Nutrition and Dietetics, 10th Edition, Churchill Livingstone.
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- Davis, J. and Sherer, K. (1994): Applied Nutrition and Diet Therapy for Nurses, 2nd Edition, W.B. Saunders Co.
- Walker, W.A. and Watkins, J.B. (Ed) (1985): Nutrition in Pediatrics, Boston, Little, Brown & Co.
- Robinson. Passmore M.A. Eastwood, Human Nutrition & Dietary -. ELBS English language book society.
- Helen Guthrie: Introductory Nutrition, Times Mirror Publishing
- M. Swaminathan: Advanced Text book on Food and Nutrition Vol.-I & Vol. – II
- Mantab S. Bamji, N. Prahlad Rao, Vinodini Reddy Textbook of Human Nutrition,

IInd

SEMESTER

SEMESTER II

MEDICAL NUTRITION THERAPY – II (Th)

Objectives:

The course will enable the students to:

- Understand the etiology, physiologic and metabolic anomalies of acute and chronic diseases and patient needs.
- Know the effect of the various diseases on nutritional status and nutritional and dietary requirements.
- Be able to recommend and provide appropriate nutritional care for prevention/ and treatment of the various disease

Course	Hours/week	Credit	Exam hours	Marks-Internal	Marks-external	Total
Medical Nutrition Therapy II	4	4	3	30	70	100

Module No	Topic and Details	No of Lectures
1	Etiopathophysiology, metabolic and clinical aberrations, complications, prevention and recent advances in the medical nutritional management of: Diseases of Circulatory System <ul style="list-style-type: none">• Atherosclerosis: Pathophysiology, risk factors including dietary factors• Genetic hyperlipidemias• Congestive Cardiac Failure and Cachexia• Prevention of coronary heart diseases• Cardiac transplantation and cardiac bypass surgery. Hypertension <ul style="list-style-type: none">• Definition – Classification, Prevention, Dietary management	15
2	Etiopathophysiology, metabolic and clinical aberrations, complications, prevention and recent advances in the medical nutritional management of: Diabetes Mellitus & Hypoglycemia Diabetes Mellitus, classification, Aetiology, pathophysiology, Diagnosis, Management of DM <ol style="list-style-type: none">1. Monitoring<ol style="list-style-type: none">a. Home glucose monitoringb. Glycosylatedc. Urine testing2. Blood glucose lowering agents<ol style="list-style-type: none">a) Insulinb) Oral hypoglycemic agents3. Exercise	15

	<p>4. Nutritional Management/Therapy</p> <ol style="list-style-type: none"> a. Nutrient contents of diabetic diets b. Diet planning for NIDDM – IDDM (Type 1 and type 2) c. Special foods – sweeteners/sugar sub d. Alcohol <p>5. Special conditions</p> <ol style="list-style-type: none"> a. Pregnancy b. Elderly c. Surgery d. Illness <p>6. Acute complications</p> <ol style="list-style-type: none"> a. Hypoglycemia b. Ketoacidosis c. Somogyi effect d. Dawn phenomenon <p>7. Long term complication</p> <ol style="list-style-type: none"> a. Macrovascular b. Microvascular c. Patient education <p>8. Hypoglycemia</p> <ol style="list-style-type: none"> a. Pathophysiology b. Diagnosis c. Types d. Treatment 	
<p>3</p>	<p>Etiopathophysiology, metabolic and clinical aberrations, complications, prevention and recent advances in the medical nutritional management of:</p> <p>Renal Disorders</p> <ol style="list-style-type: none"> 1. Physiology and function of the kidney (in brief) 2. Diseases of the kidney – causes, symptoms and dietary treatment for the following <ul style="list-style-type: none"> • Nephritic syndrome (Acute glomerular nephritis/Chronic glomerular nephritis) • Nephrotic syndrome • Acute renal failure • Chronic renal failure/CKD • ESRD, Dialysis, Renal transplant <p>Renal calculi</p> <p>Neurological disorders</p> <ul style="list-style-type: none"> • Diet therapy for the following <ul style="list-style-type: none"> Parkinson’s Alzheimer’s Multiple sclerosis Epilepsy Migraine <p>Feeding problems in patients suffering from neurological disorders and its effect on their nutritional status.</p>	<p>15</p>
<p>4</p>	<p>Etiopathophysiology, metabolic and clinical aberrations, complications, prevention and recent advances in the medical nutritional management of:</p> <p>Stress and Trauma</p>	<p>15</p>

	<ul style="list-style-type: none"> • Burns • Surgery & SIRS/MODS • Enteral and Parenteral Nutrition <p>Cancer</p> <p>Immuno-deficiency Disorders</p> <p>HIV / AIDS</p> <p>Musculo-skeletal Disorders</p> <ul style="list-style-type: none"> • Sarcopenia • Gout • Rheumatoid Arthritis • Osteo Arthritis 	
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References:

1. Mahan, L.K. and Escott-Stump, S. (2000): Krause’s Food Nutrition and Diet Therapy, 10th Edition, W.B. Saunders Ltd.
2. Shils, M.E., Olson, J.A., Shike, M. and Ross, A.C. (1999): Modern Nutrition in Health and Disease, 9th Edition, Williams and Wilkins.
3. Escott-Stump, S. (1998): Nutrition and Diagnosis Related Care, 4th Edition, Williams and Wilkins.
4. Garrow, J.S., James, W.P.T. and Ralph, A. (2000): Human Nutrition and Dietetics, 10th Edition, Churchill Livingstone.
5. Williams, S.R. (1993): Nutrition and Diet Therapy, 7th Edition, Times Mirror/Mosby College Publishing.
6. Davis, J. and Sherer, K. (1994): Applied Nutrition and Diet Therapy for Nurses, 2nd Edition, W.B. Saunders Co.
7. Walker, W.A. and Watkins, J.B. (Ed) (1985): Nutrition in Pediatrics, Boston, Little, Brown & Co.
8. Guyton, A.C. and Hall, J.E. (1999): Textbook of Medical Physiology, 9th Edition, W.B. Saunders Co.
9. Ritchie, A.C. (1990): Boyd’s Textbook of Pathology, 9th Edition, Lea and Febiger, Philadelphia.
10. Fauci, S.A. et al (1998): Harrison’s Principles of Internal Medicine, 14th Edition, McGraw Hill.
11. World Cancer Research Fund (1997). Food, Nutrition and the Prevention of Cancer- A Global perspective, Washington E.D. WCRF.

Journals and Other Reference Series

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. European Journal of Clinical Nutrition
6. Nutrition Reviews

MEDICAL NUTRITION THERAPY II PRACTICALS

Course	Hours/week	Credit	Exam hours	Marks-Internal	Marks-external	Total
Medical Nutrition Therapy II (Practical)	8	4	4	50	50	100

Module No	Topic and Details	No of Practical
1	<p>Diseases of Circulatory System</p> <p>Formulation of preparations with modified fat and sodium Formulations of content. Low cholesterol and low sodium diets for cardio vascular diseases – acute, chronic and Convalescent conditions. Diet in Hypertension. Progressive dietary management for cardiac transplantation and cardiac surgery.</p>	15
2	<p>Diseases of Carbohydrate Metabolism</p> <p>I. Diabetes Mellitus</p> <ol style="list-style-type: none"> a. Formation of food preparations for diabetics- snacks, desserts and beverages b. Without Insulin c. With Insulin – Adult d. Diabetes in Pregnancy e. Diabetes and Illness <p>II Hypoglycaemic conditions</p> <p>Diets for specific metabolic disorders: Gout</p>	15
3	<p>Protein Modifications and mineral Modifications in Renal Disease.</p> <p>Glomerulonephritis – Acute and Chronic</p> <p>Nephrotic Syndrome</p> <p>Nephrolithiasis</p> <p>Renal Failure – Acute and Chronic</p> <p>Dialysis</p> <p>Renal Transplant</p>	15
4	<p>High Risk Management (hospital based)</p> <p>Nutrition Assessment</p> <p>Review of Existing Practices in Hospitals</p> <p>Oral Supplements indigenous / home-base and commercial for stressed patients e.g. burns, cancer, surgery, debilitated patients, management of patients with feeding problems tube feed – all forms</p> <p>Elemental diets, Parenteral and Enteral Nutrition</p> <p>Diet in Neoplasia</p> <p>Dietary Management for patients with multiple ailments.</p>	15

DIETETIC TECHNIQUES AND PATIENT COUNSELLING (Pr)

Objectives:

This course will prepare the students to:

- Understand the principles and procedures of nutrition counseling and the role of the counsellor.
- Develop an understanding how: (a) lifestyles influence health and well-being; (b) acute and chronic disease affects the emotional and psychological state and the behaviour of the individuals.
- Be familiar with various techniques used in counseling.
- Be able to use various types and techniques of counseling to motivate patients to achieve well-being.
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Course	Hours/week	Credit	Exam hours	Marks-Internal	Marks-External	Total
Dietetic Techniques and Patient counselling	8	4	3	50	50	100

Module No	Topics and Details	No. of Practical
1	<p>Counselling – Definition, Expectations, goals, scope and limits.</p> <p>Counsellor – Characteristics of an effective counselor</p> <p>The Client – Characteristics, expectations</p> <p>The Counselling Process:</p> <p>Techniques for obtaining relevant information</p> <ol style="list-style-type: none"> 1. Clinical Information 2. Medical History and General Profile 3. Dietary Diagnos <ul style="list-style-type: none"> • Assessing food and nutrient intakes • Lifestyles, physical activity, stress 4. Nutritional Status 5. Correlating relevant information and identifying areas of need <p>Stage I: Problem exploration and clarification</p> <p>Stage II: Developing new perspectives and setting goals</p> <p>Stage III: Implementation follow up and evaluation</p> <p>Counselling Theories and Approaches: Key Concepts and Techniques</p> <p>Counselling techniques, strategies and communication skills</p> <p>Rapport building and opening techniques</p> <p>Questioning, listening, reflecting, acceptance, silence, leading reassurance, non-verbal behaviour, terminating skills.</p> <p>Group Counselling</p>	30
2	Developing resources and aids for education and counselling	15
3	<p>Working with:</p> <p>Hospitalised patients and Out patients (adults, pediatric, elderly, handicapped), adjusting and adopting to individual needs</p> <p>Follow up Monitoring and Evaluation of outcome: Home visits.</p>	15

References:

1. Gable, J. (1997): *Counselling Skills for Dieticians*, Blackwell Science.
2. Holli, B.B. and Calabrese, R.J. (1998): *Communication and Education Skills for Dietetics Professionals*. Lippin Cott Williams & Wilkins, New York.
3. Curry, R.K. and Jaffe, A. (1998): *Nutrition Counselling and Communication Skills*, W.B. Saunders Co. London.
4. Hosking, G. and Powell, R. (1985): *Chronic Childhood Disorders*; Wright, Bristol.
5. O'Deughterty, M.M. (1983): *Counselling the chronically ill child*; The Lewis Publishing Co. Verment, 1983.
6. *Shillitee Psychology and Diabetes*, Chapman & Hall Ltd., London, 1988

PEDIATRIC NUTRITION (Th)

Course	Hours/week	Credit	Exam hours	Marks-Internal	Marks-external	Total
Pediatric Nutrition	4	4	3	30	70	100

Module No	Topics and Details	No of lectures
1	<p>Growth, Development and Nutritional Needs: Infancy through Adolescence</p> <ul style="list-style-type: none"> • Growth, Development and Body composition, Milestones during infancy, preschool, childhood, puberty and adolescence • Nutritional Requirements at different stages: infancy, childhood, adolescence, factors affecting food intake formation of food habits, Feeding children and adolescents, packed lunch • Infant and Young Child Feeding Practices; Breast feeding, Composition of human milk, recommendations for breastfeeding, Pre-lacteal feeds and risks, exclusive breastfeeding, duration of breastfeeding, Advantages of Breast feeding • Contraindications and types of infant formulas. • Complementary feeding- issues and concerns, recommendations • Preterm/ VLBW infants – Complications, Role of parenteral and enteral nutrition (trophic feeds – gut priming) • Undernutrition in childhood – PEM, FTT, SAM, Fe deficiency, vitamin A deficiency – causes, consequences, management (in brief) Catch up growth 	15
2	<p>Nutritional considerations for special conditions –</p> <ul style="list-style-type: none"> • Overnutrition - causes, consequences, management • Nutritional Management of Inborn Errors of Metabolism - PKU, Maple syrup urine disease, Homocystinemia, Tyrosinemia, Galactosemia, Glycogen storage disorder, Wilsons disease. • Diarrhea and constipation - causes, consequences, management • Epilepsy and dietary approaches – ketogenic diet, Atkins and recent advances • Role of diet and nutritional challenges in developmental disabilities- autism spectrum disorders, cerebral palsy, Attention-deficit hyperactivity disorder, Feeding challenges for developmental disabilities, feeding devices • Type 1 DM – Impact on growth and management, nutritional requirements and managements • Nephrotic syndrome and CKD in children - Impact on growth and management, nutritional requirements and managements • Food Allergies 	30

Module No	Topics and Details	No of Practical
1	<p>Pediatric Nutritional Assessment:- Anthropometric measurements, biochemical parameters, clinical and dietary assessment methods. Measuring, recording and plotting growth on growth charts. Use of growth reference/standards (Field work)</p> <p>Normal nutrition for infants – Guidelines on breastfeeding and complementary feeding. Market survey of infant formulae and complementary foods. Planning complementary feeds as per the guidelines. Preparation of ARF.</p> <p>Nutrition in childhood and adolescence: Planning for preschool child, the school-aged child and adolescents</p>	15

Practicals are to be done through the following:

1. Case studies of children with different ailments and planning of diets
2. Visit to Pediatric ward /Pediatric hospital and Centre dealing with inborn errors of metabolism
3. Visit to Centres/Schools dealing with Children with Special needs e.g Spastic Society of India,

INTERNSHIP: THREE MONTHS.
