

00

M.Sc.

NUTRITION

&

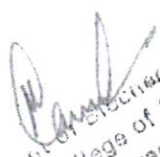
DIETETICS

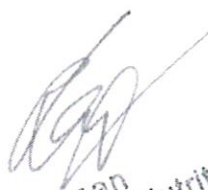
M.Sc. (Nutrition and Dietetics)
Choice Based Credit system (CBCS) Syllabus
Effective from 2022-23 admitted batch

COURSE OUTLINE AND SCHEME OF EXAMINATION

FIRST SEMESTER

Paper No.	Title	Instruction Hrs/ Week	Duration of Examination (Hrs)	Credits	Maximum Marks
Theory					
ND 101 T (CORE)	Human Nutrition	3	3	3	100 (70+30)
ND 102 T (CORE)	Nutritional Biochemistry I	3	3	3	100 (70+30)
ND 103 T (CORE)	Human Physiology	3	3	3	100 (70+30)
ND 104 T (CORE)	Principles of Dietetics	3	3	3	100 (70+30)
Practical					
ND 151 P	Human Nutrition	4	3	2	50
ND 152 P	Nutritional Biochemistry	4	3	2	50
ND 153 P	Human Physiology	4	3	2	50
ND 154 P	Principles of Dietetics	4	3	2	50
	Total	28		20	600


 Department of Biochemistry
 University College of Science
 Osmania University,
 Hyderabad - 7.


HEAD
 Department of Biochemistry
 University College of Science
 Osmania University,
 Board of Studies in Nutrition
 Osmania University,
 Hyderabad-500 007.

SEMESTER I
ND 101 T Human Nutrition (CORE)
(5credits: Theory credit= 3 + Practical credits =2)

Objectives:

- To understand the role of adequate nutrition in stages of life cycle.
- To know the nutritional requirement and meal management of athletes.

UNIT I: PRINCIPLES OF NUTRITION (15 h)

Energy value of foods

- Estimation of energy value of foods by Bomb Calorimeter and
- Estimation of energy value of foods Benedict's oxy Calorimeter
- Measurement of Basal metabolism- Atwater and Benedicts Roth

Factors affecting energy requirements;

- Factors affecting BMR, SDA,
- Energy requirement during work, physical activity ratio and physical activity level
- RDA and derivation of RDA.

Basic food groups

- Four, Five Food groups, Nutritional contribution from each group,
- Balanced diet, My Food Pyramid, Food plate
- Food composition tables and Food Exchange list

Basics of meal planning

- Steps in meal planning
- Principles of meal planning
- Guidelines for planning a menu

Nutritional requirements of

- Dietary guidelines for Indians
- An adult man and
- An adult woman

UNIT II: NUTRITION DURING THE PHASES OF - PREGNANCY, LACTATION AND INFANCY 15 (h)

Changes during Pregnancy:

- Pre conceptual nutrition
- Physiology of pregnancy (stages of human fetal changes)
- Maternal Physiological changes and Maternal weight gain

Nutritional requirement and complications

- Nutritional requirements during pregnancy
- Diet and eating pattern during pregnancy
- Complications of pregnancy

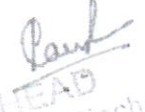
Lactation:

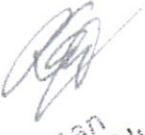
- Development of breast, Physiology of lactation
- Nutritional requirements during lactation, Lactogogues
- Nutritional component of colostrum and mature milk

Breast Feeding

- Composition of different types of milk – cow, buffalo, goat and camel, formula milk
- Breast feeding Vs bottle feeding- advantages and disadvantages
- Feeding of Low birth weight and premature infants, Human Milk Banks


Department of Biochemistry
University College of Science
Osmania University,
Hyderabad - 7.


HEAD
Department of Biochemistry
University College of Science
Osmania University,


Chairman
Board of Studies in Nutrition
Osmania University,
Hyderabad-500 007.

ND 102 T NUTRITIONAL BIOCHEMISTRY- I (CORE)
(5credits: Theory credit= 3 + Practical credits =2)

Objectives:

- To enable students to understand the role of nutrients in the body.
- To know the classification, functions and metabolism of carbohydrates, amino acids, proteins and nucleic acids.

UNIT I: CARBOHYDRATES AND THEIR METABOLISM (15h)

Carbohydrates:

Classification and functions

- Nutritional Classification and sources
- Chemical classification and sources
- functions and requirements of carbohydrates

Utilization

- Digestion, absorption and maintenance of blood glucose levels
- factors affecting absorption
- Transport (GLUT's) and storage

Metabolism of simple sugars:

- Glycolysis
- TCA cycle
- Electron transport chain

Metabolism other sugars

- Pentose phosphate pathway
- Glycogenesis and Glycogenolysis
- alcohol metabolism

Inborn errors of Carbohydrate Metabolism-

- Glycogen storage diseases
- Lactose intolerance and Galactosemia
- Fructose intolerance

UNIT II: AMINO ACIDS AND THEIR METABOLISM (15h)

Classification and functions of Amino Acids

- Chemical composition- Based on solubility, Polarity, Chemical Nature
- Nutritional classification
- Specific nutritional functions

Oxidation of Amino acids (glycogenic and ketogenic)

- Transamination
- Oxidative deamination and non oxidative deamination and decarboxylation
- Urea cycle

Metabolism of Aromatic Amino Acids

- Phenylalanine
- Tyrosine
- Tryptophan

Metabolism of Branched chain amino acids

- Leucine
- Isoleucine
- Isoleucine

Paul
Department of Biochemistry
University College of Science
Osmania University,
Hyderabad - 7.

Paul
HEAD
Department of Biochemistry
University College of Science
Osmania University,
RGP
Chairman
Board of Studies in Nutrit
Osmania University
Hyderabad-500 00