

Syllabus

Certificate Course on Low Carbohydrate High fat Nutritional Dietetics

ORBITO ASIA DIAGNOSTICS

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Affiliated to



BHARATHIAR UNIVERSITY

(A state University, Accredited with “A” Grade by NAAC,
Ranked 13th among Indian Universities by MHRD- NIRF,
World Ranking: Times – 801 – 1000, Shanghai – 901 -1000,
URAP -982)

Coimbatore – 641 046, Tamil Nadu, India

2022 – 2023 Onwards

About Us:

Orbito Asia Diagnostics is a comprehensive healthcare facility for imaging and diagnostic facilities, under one roof with NABL, NABH & ISO accreditation. We are one of the largest COVID RT PCR testing laboratory with the capacity of >25000 tests per day with fully automated robotic liquid handling systems. It prides of housing the latest infrastructure, the best possible medical facilities, accompanied with the most competitive prices and thorough individual care so that the customer can have the diagnostic tests done at the most efficient and cost effective means at a single point by our experienced and certified doctors and friendly supportive staff. We strive to provide ultimate diagnostic services to our clients with accurate results, highest quality imaging and comprehensive health check-up services with complete care, courtesy and compassion to our customers. Orbito Asia provides diagnostic solutions that improve patient health and ensure consumer safety. Orbito Asia is determined to continue to play a pioneering role by innovating and designing the diagnostics of the future to address the major challenges for public health. Orbito Asia offers more than 300 different tests and special profiles in pathology and diagnostic and scan services. With more than 20 collection centres across the state, our diagnostic services are unsurpassed. We believe one of the most important facets of being an outstanding reference laboratory is the quality assurance we provide in every result.

Program Highlights:

- This certification course of 3 months is designed to fulfil the need for highly skilled dietitians for giving best diet chart and advice to the treatment of diseases caused by improper and unhealthy food style.
- This practical intensive curriculum is delivered through lectures by the renowned faculty of Orbito Asia Diagnostics and various studies comparing the blood results of patients before and after diet.
- Regular theory and practical session will be conducted along with seminars carried out by healthcare professionals from various divisions.
- Experiential learning at Orbito Asia Diagnostics and case studies conducted by Paleo diet experts will mould the students into a Nutritional diet expert.
- The course is associated with department of Biotechnology – Bharathiar University for guest lectures and higher end Practicals using their advanced facility with the help of the distinguished faculty members of the department.

Eligibility:

- B.Sc/M.Sc (Nutritional dietetics, Microbiology, Molecular biology, Biochemistry and Allied sciences)
- B.Tech/M.Tech (Biotechnology, Food Technology and Allied science)
- MBBS/MD
- Candidates working in a clinical lab, hospital, academic/research institution, Pharmaceutical, Food industry and any health sector with an interest to learn Low Carbohydrate High Fat Nutritional Dietetics with a minimum graduation degree.

| Year | Subject Code | Title of the course | Hours/Week |
|--------------------|--------------|---|------------|
| 2022 -2023 onwards | 22LCHFND | Low Carbohydrate High Fat Nutritional Dietetics | 25 |

Program Educational Objectives (PEOs):

This objective of this programme is to develop qualified dieticians with the following competencies.

PEO 1: To prepare competent graduates for careers in nutrition and dietetic-related fields.

PEO 2: To provide a scientific foundation for expertise in the translation of food, nutrition, and medical science while promoting health and nutritional well-being.

PEO 3: Interpreting a nutritional diagnosis, evaluating nutritional aspects of a clinical record and implementing a dietary treatment plan for individuals.

Program Outcomes (POs):

On completion of the certificate course on Low Carbohydrate High Fat Nutritional Dietetics, the participants will be able to

PO 1: Understand the metabolic and physiological responses of the body to food and diet and the role of nutrients in the cause, treatment, and prevention of disease

PO 2: Assess nutritional status and needs of individuals and groups

PO 3: Provide nutrition education to individuals and groups for disease prevention/disease management

PO 4: Advice on nutrition and diet for general good health and prevention of diseases

PO 5: Contribute towards the development of policies and programmes in nutrition and health

Assessment Criteria:

| Sr. No. | Guidelines for Assessment |
|---------|--|
| 1. | A combination of theory and practical courses will be offered in this certificate course. The courses will be offered with 60% practical and 40% theory. |
| 2. | Duration : 3 months |
| 3. | Credit: 20 |
| 4. | Grade and examination pattern: Semester pattern (both internal and external) as per the Bharathiar University Examination norms |
| 5. | Evaluation: As per the Bharathiar University Examination norms |
| 6. | Certificate: Based on the report of the post – training assessment jointly conducted by Bharathiar University and Orbito Asia Diagnostics |

Certificate Course on Low Carbohydrate High Fat Nutritional Dietetics

Scheme of Examinations

| S.No | Subject | Hours | | Exam | | Total marks | Credits |
|---|--|-----------|------------|------------|------------|-------------|-----------|
| | | T | P | CIA | ESE | | |
| Course Duration – 3 months | | | | | | | |
| Lecture | | | | | | | |
| Application of Nutritional dietetics for Wellness | | 90 | - | 50 | 50 | 100 | 6 |
| 1 | Introduction and potential benefits of LCHF | | | | | | |
| 2 | Causes and risk factors of diseases/disorders: Importance and types of LCHF diet | | | | | | |
| 3 | Phlebotomy techniques, Lab diagnosis and interpretation | | | | | | |
| 4 | Wellness counselling ,Health benefits and finer details | | | | | | |
| 5 | LCHF diet recipes, Fasting, types and benefits | | | | | | |
| Practical | | | | | | | |
| 2. | Planning, preparations with correlating the Biochemical values and calculations of diets with modified- (a) Consistency (b) Fibre and residue (c) Diet for Diarrhoea and constipation (d) Diet for pepticulcer (e) Diet tor liver disease. | 90 | 45 | 45 | 90 | 6 | |
| | Planning, preparation and calculation of diets in fever and infections. | | | | | | |
| | Planning, preparation and calculation of diets for type I and type ii diabetes. | | | | | | |
| 3. | Planning, snacks; desserts and beverages for diabetes. | 90 | 45 | 45 | 90 | 6 | |
| | Planning, preparation and calculation of diet for weight loss | | | | | | |
| | Phlebotomy techniques and wellness counselling | | | | | | |
| 4. | Mini Project | 30 | 10 | 10 | 20 | 2 | |
| Total | | 90 | 210 | 140 | 140 | 300 | 20 |

CIA continuous Internal Assessment: **ESE** End Semester Examination

| Year | Course Code | Title of the paper | L | T | P | C |
|--------------------|----------------|---|---|---|---|---|
| 2022 -2023 onwards | 22LCHFND 01 | Application of Nutritional dietetics for Wellness | 5 | 5 | - | 6 |

Course Objectives:

The main objectives of this course are to:

1. Make students understand the basics of LCHF
2. Make students understand the importance of LCHF
3. Inculcate knowledge about phlebotomy techniques, lab diagnosis and interpretation
4. Provide an in-depth knowledge about wellness counselling and health benefits
5. Make students learn the LCHF diet recipes, fasting types and benefits
6. Make students learn about post diet follow up

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

| | | |
|----|--|---------|
| 1. | Understand the basics of LCHF | K1 & K2 |
| 2. | Understand the importance of LCHF | K1 & K2 |
| 3. | Learn fundamentals of phlebotomy, lab diagnosis and interpretation | K1 & K2 |
| 4. | Knowledge about wellness counselling | K1 & K2 |
| 5. | Learn different diet recipes | K2 & K3 |
| 6. | Post diet follow-up | K3 & K4 |

K1 – Remember; **K2** – Understand; **K3** – Perform; **K4** - Analyse

| | | |
|---|---|--|
| Subject code | 22LCHFND01 | Application of Nutritional dietetics for wellness |
| Unit:1 | Introduction and potential benefits of LCHF | 20 hours |
| General overview of food and nutrition ; Clinical nutrition and dietetics ; Glycaemic index (GI) ; Public health nutrition ; Carbohydrate controlled diets ; LCHF diet ; Limitations ; Introduction to diet therapy ; Principles and concepts of diet therapy ; Therapeutic nutrition for changing need ; therapeutic diets ; LCHF diet benefits to a number of health conditions; Policies and programmes in nutrition and health | | |
| Unit:2 | Causes and risk factors of diseases/disorders: Importance and types of LCHF diet | 20 hours |
| Nutrition care ; Nutrition assessment ; Nutrition interventions ; Risk factors ; Diet in addictive behaviour ; Nutrient drug interaction ; Ketosis ; Lipid response ; Renal function ; Mortality and cardiovascular safety Healthy LCHF foods ; Foods to avoid Therapeutic adaptation of normal diet ; Dietary modification ; Types of LCHF diet ; Importance of LCHF diet | | |
| Unit:3 | Phlebotomy techniques, Lab diagnosis and interpretation | 20 hours |
| Introduction to phlebotomy ; Importance of safe phlebotomy ; phlebotomy equipment and supplies ; Successful Specimen Collection by Venipuncture ; Complications during specimen collection by venipuncture ; Capillary blood collection ; Safety and Infection control ; Occupational exposure ; Inventory Management ; Alanine aminotransferase (ALT) ; Fasting blood glucose ; Haemoglobin ; Complete lipid panel ; Creatinine ; Optional blood tests ; Complete Blood Count (CBC) ; Electrolytes ; C peptide ; High sensitivity C reactive protein (hs - CRP) Nuclear magnetic resonance (NMR) lipoprofile ; Thyroid stimulating hormone (TSH) ; Uric acid | | |
| Unit:4 | Wellness counselling ,Health benefits and finer details | 20 hours |
| Dietetics programs ; Dietary counselling ; Counselling techniques and methods ; Implications for dietetics professional ; Follow up and evaluation Nutritional management ; Nutrition care Process ; Evaluation of nutritional care ; Nutritional therapy ; Health benefits of LCHF diet | | |
| Unit:5 | LCHF diet recipes, Fasting, types and benefits | 20 hours |
| LCHF vegetarian diet recipes ; Non -vegetarian LCHF diet recipes ; Low carb vegan recipes Introduction to fasting ; Rules for all fasting diets ; 16:8 fasting diet 5:2 fasting diet ; Eat stop eat fasting diet ; 4:3 fasting diet (alternate day fasting) ; Health benefits Scope of nutrition and dietetics ; Tools ; Adapting LCHF diets ; Importance ; Overall wellbeing | | |
| Total theory hours | | 100 hours |
| References | | |
| <ol style="list-style-type: none"> 1. Antia F.P., Philip Abraham, Clinical Dietetics and Nutrition, Oxford University Press; 4th edition. 2. Kathleen Mahan L., Sylvania Escott-Stump, Krause's food, nutrition and diet therapy (11th edition). Saunders company, London. 3. Passmore R. and Davidson S. (1986) Human nutrition and Dietitics. Liming stone publishers. 4. Robinson C.H. Careme, Chenometh W.L., Garmick A.E. (1986) 16th edition Normal Therapeutic nutrient. Publish by Mc Millan Company New York. | | |

5. Shil's M.E., Alfon J.A., Shike M (1994), Modern nutrition in health and diseases eighth edition. William S.R., Nutrition and Diet Therapy fourth edition C.V. Mos Company.
6. Arora K., Gupta K.V., : Theory of cooking
7. Bennen Marion : Introductory foods Lavies. (1998) : Food commodities.
8. Heinemann Ltd, London Lowe Bella : Experimental cookery
9. Norman N Potter, Joseph H Hotchkiss (1999) : Food science Technology
10. Peckham : Foundation of food preparation Srilakshmi : Food Science. New Age International Publishers, New Delhi.
11. Antia, F.P. (2005): Clinical Nutrition and Dietetics, Oxford University Press, Delhi
12. Gordon M Ward law (1999) Perspectives in Nutrition 4th ed.WCB/Mcgraw Hill. International edition.
13. Mahan, L.K., Arlin, M.T. (2000): Krause's Food, Nutrition and Diet therapy, 11th edition, W.B.Saunders Company, London.
14. Passmore, R and Davidson S (1986) Human Nutrition and Dietetics.Living stone Publishers.
15. Robinson,C.H;Lawler,M.R.Chenoweth,W.L;and Garwick,A.E(1986):Normal and Therapeutic Nutrition,17th Ed., Mac Millan Publishing Co
16. Shil's M E, Alfon J A, Shike M (1994) Modern Nutrition In health and Diseases 8th ed.
17. Shubhangini A Joshi (2002): Nutrition and Dietetics2nd edition, Tata Mc Graw-Hill Publishing Company Limited, New Delhi.
18. Srilakshmi,B.(2005):Dietetics,5th edition, New Age International(P) Limited Publishers, New Delhi Vincent Hegarty© (1988, Decissions in Nutrition.Times Mirror/Mosby College Publishing, St.Louis.
19. Williams's (1989): Nutrition and diet Therapy.6th edition. Times Mirror/Mosby College Publishing, St.Louis

Mapping with Programme Outcomes

| COs | PO1 | PO2 | PO3 | PO4 | PO5 |
|-----|-----|-----|-----|-----|-----|
| CO1 | S | S | S | S | S |
| CO2 | M | S | S | S | L |
| CO3 | M | S | S | S | L |
| CO4 | M | M | S | S | L |
| CO5 | M | S | L | L | L |

*S- Strong; M – Medium; L- Low

| Year | Course Code | Title of the paper | L | T | P | C |
|--------------------|--------------|--------------------|---|---|---|---|
| 2022 -2023 onwards | 22LCHFND P01 | Practical - I | - | - | 3 | 6 |

Course Objectives:

The main objectives of this course are to:

1. Make students prepare, calculate and plan LCHF diets
2. Make students analyse and prepare diets for clinical diagnosis.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

| | | |
|----|---|---------|
| 1. | Prepare, calculate and plan LCHF diets | K3 & K4 |
| 2. | Analyse and prepare diets for clinical diagnosis. | K3 & K4 |

K1 – Remember; **K2** – Understand; **K3** – Perform; **K4** - Analyse

| Subject code | 22LCHFNDP01 | Practical - I |
|---|--|-----------------|
| Unit:1 | Diet planning and preparations | 30 hours |
| Planning, preparations with correlating the Biochemical values and calculations of diets with modified- (a) Consistency (b) Fibre | | |
| Unit:2 | Diet planning for abnormal conditions | 30 hours |
| Planning, preparation and calculation of diets in 1.)Fever and infections, 2.) Diarrhea and constipation, 3.) Peptic ulcer, 4.) liver disease | | |
| Unit:3 | Diet planning for type I andtype II diabetes. | 30 hours |
| Planning, preparation and calculation of diets for type I andtype II diabetes. | | |
| Total | | 90 hours |
| References | | |
| <ol style="list-style-type: none"> 1. Antia F.P., Philip Abraham, Clinical Dietetics and Nutrition, Oxford University Press; 4 th edition. 2. Kathleen Mahan L., Sylina Escott-Stump, Krause’s food, nutrition and diet therapy (11th edition). Saunders company, London. 3. Mahan, L.K., Arlin, M.T. (2000): Krause’s Food, Nutrition and Diet therapy, 11th edition, W.B.Saunders Company, London. | | |

Mapping with Programme Outcomes

| COs | PO1 | PO2 | PO3 | PO4 | PO5 |
|------------|------------|------------|------------|------------|------------|
| CO1 | S | S | S | L | L |
| CO2 | M | S | S | L | L |

***S- Strong; M – Medium; L- Low**

| Year | Course Code | Title of the paper | L | T | P | C |
|--------------------|--------------|--------------------|---|---|---|---|
| 2022 -2023 onwards | 22LCHFND P02 | Practical - II | - | - | 3 | 6 |

Course Objectives:

The main objectives of this course are to:

1. Make students plan and prepare LCHF diets for healthy lifestyle
2. Make students perform phlebotomy techniques and wellness counselling.

Expected Course Outcomes:

On the successful completion of the course, student will be able to:

| | | |
|----|---|---------|
| 1. | Plan and prepare LCHF diets for healthy lifestyle | K3 & K4 |
| 2. | Perform phlebotomy techniques | K3 & K4 |
| 3. | Perform wellness counselling | K3 & K4 |

K1 – Remember; **K2** – Understand; **K3** – Perform; **K4** - Analyse

| Subject code | 22LCHFNDP01 | Practical - II |
|--|---|-----------------|
| Unit:1 | Healthy diet preparation | 30 hours |
| Planning meals snacks; desserts and beverages for healthy life style | | |
| Unit:2 | Weight loss diet | 30 hours |
| Planning, preparation and calculation of diet for weight loss | | |
| Unit:3 | Phlebotomy techniques and Wellness counselling | 30 hours |
| Types of container, Order of draw, training to draw blood, Dietary counselling, Follow up and evaluation Nutritional management | | |
| Total | | 90 hours |
| References | | |
| <ol style="list-style-type: none"> 1. Mahan, L.K., Arlin, M.T. (2000): Krause's Food, Nutrition and Diet therapy, 11th edition, W.B.Saunders Company, London. 2. Arora K., Gupta K.V., : Theory of cooking 3. Bennen Marion : Introductory foods Lavies. (1998) : Food commodities. 4. Heinemann Ltd, London Lowe Bella : Experimental cookery | | |

Mapping with Programme Outcomes

| COs | PO1 | PO2 | PO3 | PO4 | PO5 |
|------------|------------|------------|------------|------------|------------|
| CO1 | S | S | S | L | M |
| CO2 | S | S | S | L | M |
| CO3 | L | S | S | S | S |

***S- Strong; M – Medium; L- Low**

| MINI PROJECT | 30 hours |
|--|-----------------|
| The students will be asked to submit a report on diagnosing, interpreting, diet planning and counselling | |