



# **SATHYABAMA**

**INSTITUTE OF SCIENCE AND TECHNOLOGY  
(DEEMED TO BE UNIVERSITY)**

**Accredited "A" Grade by NAAC | 12B Status by UGC | Approved by AICTE**

**[www.sathyabama.ac.in](http://www.sathyabama.ac.in)**

## **Department of Clinical Nutrition & Dietetics**

### **1.1.2 Courses Revised and Introduced during 2022 – 2023**

#### **CONTENTS**

| <b>S. No.</b> | <b>Course Code</b> | <b>Course Name</b>        | <b>Page No.</b> |
|---------------|--------------------|---------------------------|-----------------|
| 1             | SACA2102           | Human Physiology Lab      | 3               |
| 2             | SACA2304           | Food Science Lab          | 4               |
| 3             | SACA1101           | Basic Nutrition           | 5               |
| 4             | SACA1502           | Community Nutrition       | 6               |
| 5             | SACA1501           | Advanced Dietetics        | 7               |
| 6             | SACA1502           | Community Nutrition       | 9               |
| 7             | SACA1503           | Dietetics and Counselling | 11              |



# SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY  
(DEEMED TO BE UNIVERSITY)

Accredited "A" Grade by NAAC | 12B Status by UGC | Approved by AICTE

www.sathyabama.ac.in

## DEPARTMENT OF CLINICAL NUTRITION & DIETETICS BOARD OF STUDIES – 2022-2023 [NON-SEMESTER]

### Minutes of the Meeting

The committee on Board Of Studies held on Monday, June, 13, 2022 between 10.00 am to 12. 30pm. The discussion with the BOS members of B.Sc. (Clinical Nutrition & Dietetics) suggested the following inclusions and exclusion in the laboratory work of SACA2102 and SACA2304. With respect to theoretical few related topics have been included in the SACA1101, SACA1502 to enrich the advanced learning in clinical nutrition arena.

#### SACA2102 - Human Physiology Lab

Ms. Roshni M, suggested on introducing Microscopic study of different tissues – epithelial, Connective, Muscular and Nervous.

#### SACA2304 – Food Science Lab

Ms. Priya S, gave her recommendation on Microscopic study of different starches to be included in the lab work.

#### SACA1101- Basic Nutrition

External Member proposed on introducing terms on Energy needs of the body :- BMR, RMR, definition, factors influencing BMR, the energy cost of physical activities and method of determination, calculation of total caloric requirements, factorial method for determining total energy needs. She also advised to be specific to course and suggested to remove few topics.

#### SACA1502 – Community Nutrition

Dr.L.Inbathamizh submitted to include Role of Audio visual aids: - Classification, Importance in Public health nutrition.

Advanced Dietetics, Community Nutrition and Dietetics and Counselling syllabi are proposed for consideration as new course.

**The above revision is based on meet the industry demands to enrich the knowledge the technical skill, latest and updated methods of learning techniques.**

#### Members of BoS - Clinical Nutrition & Dietetics.

#### EXTERNAL MEMBERS

Mrs. Premakumari. C, Assistant professor, Post Graduate Department of Home Science – NFSMD, Anna Adrash College for Women, Madras University.

#### INTERNAL MEMBERS

1. Dr. L. Inbathamizh, HOD, Department of Clinical Nutrition & Dietetics.
2. Ms. S. Priya, Assistant Professor, Department of Clinical Nutrition & Dietetics.
3. Ms. S. Kanya, Assistant Professor, Department of Clinical Nutrition & Dietetics.
4. Ms. M. Roshni Assistant Professor, Department of Clinical Nutrition & Dietetics.

| SACA2102 | HUMAN PHYSIOLOGY LAB | L | T | P | Credits | Total |
|----------|----------------------|---|---|---|---------|-------|
|          |                      | 4 | 0 | 0 | 5       | 100   |

#### Course Objectives:

- To learn the basic physiology lab procedures
- To apply the physiological aspects to clinical studies

#### List of Experiments

1. Compound Microscope
2. Determination of Blood groups
3. Measurement of Human blood pressure
4. Respiratory rate and pulse rate
5. Estimation of hemoglobin
6. RBC Estimation
7. WBC Estimation
8. ESR Estimation
9. Microscopic study of different tissues – epithelial, Connective, Muscular and Nervous

#### Course Outcomes:

On completion of the course, students will be able to

- CO1** Identify the use of compound microscope  
**CO2** Determine blood groups  
**CO3** Measure blood pressure, respiratory rate and pulse rate essential during therapies and surgeries  
**CO4** Estimate hemoglobin, thereby predict anemia and other related diseases  
**CO5** Determine blood cell count indicative of pathological conditions  
**CO6** Predict infections and inflammations by estimating ESR

 Added Content

 Deleted Content

| SACA2304 | FOOD SCIENCE LAB | L | T | P | Credits | Total |
|----------|------------------|---|---|---|---------|-------|
|          |                  | 0 | 0 | 3 | 2       | 100   |

#### Course Objectives:

- To identify the microbes in food products
- To apply the equipment and methods in diagnostic field and food industry

#### List of Experiments

1. Detection of toxins and adulterants of some of the common foods.
2. Preparation of some confectionary products.
3. Preparations of some traditional, fermented and other products.
4. Preparation of soya bean products and their acceptability test.
5. Survey of marketed processed and labeling of processed food items.
6. Nutritional value & criteria of food selection in Indian diet according to ICMR.
7. Visit to confectionaries.
8. Microscopic study of different starches

#### Course Outcomes:

On completion of the course, students will be able to

**CO1** Acquire knowledge of toxins and adulterants of some of the common foods

**CO2** Attain knowledge of chocolates and other confectionery products

**CO3** Understand the concept of different fermentation processes

**CO4** Acquire knowledge of different types of soya and soya based products

**CO5** Understand the nutritional value and criteria of food selection in Indian diet

**CO6** Attain knowledge of the standards and regulations, quality parameters for various food products

 Added Content

 Deleted Content

|          |                 |   |   |   |         |       |
|----------|-----------------|---|---|---|---------|-------|
| SACA1101 | BASIC NUTRITION | L | T | P | Credits | Total |
|          |                 | 4 | 0 | 0 | 5       | 100   |

#### Course Objectives:

- To understand the relation between nutrition and health.
- To acquire knowledge about the main nutrients and its functions in the body.

**Unit I Introduction to nutrition** - Food as source of nutrients, functions of food, definition of nutrition, nutrients & energy, adequate, optimum & good nutrition, malnutrition. **Nutrition - Fitness, Athletics & Sports** Food guide - Basic five food groups How to use food guide (according to R.D.A.) Interrelationship between nutrition & health: - Visible symptoms of good health, **Use of food in body - Digestion, Absorption, transport & utilization.**

**Energy needs of the body :- BMR, RMR, definition, factors influencing BMR, the energy cost of physical activities and method of determination, calculation of total caloric requirements, factorial method for determining total energy needs**

**Unit II Carbohydrates** - Functions, classification, food sources, storage in body, Digestion, Absorption, transport & utilization.

**Unit III Proteins** - Composition, sources, essential & non-essential amino acids, functions, Protein deficiency. Digestion, Absorption, transport & utilization.

**Unit IV Fats & Oils** - Composition, saturated and unsaturated fatty acids, classification, food sources, function of fats. Digestion, Absorption, transport & utilization.

**Unit V - Vitamins** (water & fat soluble) - Definition, classification & functions.

**Unit VI - Minerals** (macro & micronutrients) - Functions, sources. Bioavailability and deficiency of Calcium, Iron, Iodine, Sodium & Potassium

**Unit VII Water** (as a nutrient) - Function, sources, requirement, water balance & effect of deficiency.

**Unit VIII Food Processing and Sanitation** - Effect of cooking & heat processing on the nutritive value of foods. Processed supplementary foods. Food sanitation in hygiene.

#### Course Outcomes:

On completion of the course, students will be able to

**CO1** Utilize knowledge from foundational sciences as a basis for understanding the role of food and nutrients in health and disease

**CO2** Identify and apply food principles to food and nutrition systems

**CO3** Utilize knowledge from the physical and biological sciences as a basis for understanding the role of food and nutrients in health and disease processes

**CO4** Educate others about holistic Nutrition, life style, wellness and healthy living

**CO5** Design and critique evidence-based nutrition intervention for prevention and control of chronic diseases

**CO6** Understand thoroughly basis of human nutritional requirements and recommendations throughout human life cycle



**Added Content**



**Deleted Content**

| SACA1502 | COMMUNITY NUTRITION | L | T | P | Credits | Total marks |
|----------|---------------------|---|---|---|---------|-------------|
|          |                     | 4 | 0 | 0 | 5       | 100         |

### Course Objectives:

- To list the basic goals of a community assessment.
- To describe how a community assessment can be conducted including specification of the types of data that are relevant.

**Unit I** Nutrition and health in National development, Malnutrition- meaning. factors contributing to malnutrition, over nutrition.

**Unit II** Nutritional disorders- Epidemiology, clinical features, prevention and dietary treatment for Protein Energy malnutrition, nutritional anaemias & vitamin deficiency disorders.

**Unit III** Methods of assessing nutritional status: a) Sampling techniques, Identifications of risk groups, b) Direct assessment - Diet surveys, anthropometric, clinical and biochemical estimation. c) Indirect assessment- Food balance sheet, ecological parameters and vital statistics.

**Unit IV** Improvement of nutrition of a community: a) Modern methods of improvement or nutritional quality of food, food fortification, enrichment and nutrient supplementations. b) Nutrition education themes and messages in nutrition and health, Antenatal and postnatal care.

**Unit V** Nutritional and infection relationship: Immunization and its importance.

**Unit VI** Food borne infection and intoxication diseases, foods involved, methods of prevention, Infestation of food borne diseases, Outbreak, Prevention signs and control of infection.

**Unit VII** National and International agencies in uplifting the nutritional status -WHO, UNICEF, CARE, ICMR, ICAR, CSIR, CFTRI. Various nutrition related welfare programmes, ICDS, SLP, MOM, and others

**Unit VIII** Community nutrition programme planning - Identification of problem, analysis of causes, resources constraints, selection of interventions, setting a strategy, implementations and evaluation of the programme

**Role of Audio visual aids: - Classification, Importance in Public health nutrition**

### Course Outcomes:

On completion of the course, students will be able to

**CO1** Able to interpret and apply nutrition concepts to evaluate and improve the nutritional health of communities

**CO2** Plan a community intervention based upon a needs assessment

**CO3** Advocate for a public policy related to nutrition programs or health care

**CO4** Provide nutrition counseling and education to individuals, groups, and communities throughout the lifespan using a variety of communication strategies

**CO5** Provide culturally competent nutrition services for individuals and communities

**CO6** Competence in the skills of assessment, planning, management and evaluation of food service, nutrition and dietetic services in institutional food, community nutrition, and clinical dietetics settings

 **Added Content**

 **Deleted Content**

|          |                    |   |   |   |         |       |
|----------|--------------------|---|---|---|---------|-------|
| SACA1501 | ADVANCED DIETETICS | L | T | P | Credits | Total |
|          |                    | 4 | 0 | 0 | 5       | 100   |

## Course Objectives

- To know the importance and principles of dietetics as a distinct therapy for diseases.
- Gain knowledge on the types and role of dietitians.

### Unit I

Concept of Diet therapy: growth and source of dietetics, purpose and principles of therapeutic diets, modification of normal diet, classification of therapeutic diets.

### Unit II

Role of Dietician: Definition of nutritional care, interpersonal relationship with patient, planning and implementary dietary care, Team approach to nutritional care.

### Unit III

Routine hospital diets: Preoperative and postoperative diets, study and review of hospital diet. Basic concepts and methods of - (a) Oral feeding (b) Tube feeding (c) Parental nutrition (d) Intravenous feeding.

### Unit IV

Diet in surgical conditions, burns and cancer, Obesity and leanness- causes, complication and health effects, dietary treatment and other recommendation, Diet in fever and infections- Types- metabolism in fever, general dietary consideration diet in influenza, typhoid fever, recurrent malaria and tuberculosis.

### Unit V

Diet in gastritis, peptic ulcer- symptoms, clinical findings, treatment, dietary modification, adequate nutrition, amount of food, and intervals of feeding, Chemically and mechanically irrigating foods, four stage diet (Liquid, soft, convalescent, liberalized diet), Diet in disturbances of small intestine and color. • Diarrhoea- (child and adult)- classification, modification of diet, fibre, residue. Fluids & nutritional adequacy. • Constipation- flatulence - dietary considerations. • Ulcerative colitis (adults)- symptoms, dietary treatment. • Spruce, coeliac disease- disaccharide intolerance, dietary treatment.

### Unit VI

Diet in diseases of the liver, gall bladder and pancreas, a) Etiology, symptoms and dietary treatment in - Jaundice, hepatitis, cirrhosis and hepatic coma. b) Role of alcohol in liver diseases. c) Dietary treatment in cholecystitis, cholelithiasis and pancreatitis, Gout- Nature and occurrence of uric acid, causes, symptoms and diet.

### Unit VII

Diet in allergy and skin disturbances: Definition, classification, manifestations, common food allergies and test and dieteric treatment, Diet in Diabetes mellitus: a) Incidence and predisposing factors. b) Symptoms-types and tests for detection. c) Metabolism in diabetes d) Dietary treatment & meal management e) Hypoglycemic agent, insulin and its types. f) Complication of diabetes.

### Unit VIII

Diet in Renal diseases: Basic renal function, symptoms and dietary treatment in acute and chronic glomerulonephritis, Nephrosis, renal failure, dialysis. urinary calculi-causes & treatment, acid and alkali producing and neutral foods and dietary treatment, Diet in Cardiovascular diseases: Role of nutrition in cardiac efficiency, incidence of Atherosclerosis, dietary principles, Hyperlipidenmia, Hypertension- causes and dietary treatment, Sodium restricted diet, level of sodium restriction, sources of sodium, danger of severe sodium restriction.

**Course Outcomes:**

On completion of the course, students will be able to

**CO1** Interpret and apply nutrition concepts to evaluate and improve the nutritional health of individuals with medical conditions

**CO2** Integrate knowledge and skills in food and nutrition with issues affecting the nutrition and/or dietetics field

**CO3** Apply principles and theories of management to the administration of human, physical and financial resource in food and nutrition services

**CO4** Utilize advanced principles of health literacy, including critical thinking skills, literature searches, data collection and interpretation

**CO5** Apply counseling methods to patients with different diseases

**CO6** Utilize basic nutrition knowledge and the dietary guidelines for making food choices that will promote optimal health

**Text / Reference books**

1. Modern Nutrition in Health & Disease – Eds – Maurice E. Shils, James A. Olson, 2012.

2. Clinical Dietetics and Nutrition – F P Antia and Philip Abraham, 2002.

3. Nutrition and Metabolism – Michael J. Gibney, Marinos Elia, OlleLjungqvist, Julie Dowsett (Eds.) Nutrition Society Textbook series, Blackwell Publishers, 2005

4. Nutrition Science – B Sri Lakshmi, New Age International Publishers, 2017.

5. Normal and Therapeutic Nutrition – Robinson & Lawler, 17th edition, Mac Millan Publishers, 2001.

6. Text Book of Human Nutrition – Mahtab S Bamji, N PrahladRao, Vinodini Reddy, 2nd edition, Oxford & IBH Publishing Co. Pvt. Ltd, 2003.

**END SEMESTER EXAMINATION QUESTION PAPER PATTERN**

Max. Marks: 100

Exam Duration: 3Hrs

PART A: 10 Questions – 2 marks each – No choice

20 Marks

PART B: Short Answers – 5 Questions 8 marks each – 5 out of 8

40 Marks

PART C: Long Answers – 2 Questions 20 marks each – 2 out of 3

40 Marks

 New course

|                 |                            |          |          |          |                |              |
|-----------------|----------------------------|----------|----------|----------|----------------|--------------|
| <b>SACA1502</b> | <b>COMMUNITY NUTRITION</b> | <b>L</b> | <b>T</b> | <b>P</b> | <b>Credits</b> | <b>Total</b> |
|                 |                            | <b>4</b> | <b>0</b> | <b>0</b> | <b>5</b>       | <b>100</b>   |

### Course Objectives:

- To list the basic goals of a community assessment.
- To describe how a community assessment can be conducted including specification of the types of data that are relevant. .

### Unit I

Nutrition and health in National development, Malnutrition- meaning. factors contributing to malnutrition, over nutrition.

### Unit II

Nutritional disorders- Epidemiology, clinical features, prevention and dietary treatment for Protein Energy malnutrition, nutritional anaemias & vitamin deficiency disorders.

### Unit III

Methods of assessing nutritional status: a) Sampling techniques, Identifications of risk groups, b) Direct assessment - Diet surveys, anthropometric, clinical and biochemical estimation. c) Indirect assessment- Food balance sheet, ecological parameters and vital statistics.

### Unit IV

Improvement of nutrition of a community: a) Modern methods of improvement or nutritional quality of food, food fortification, enrichment and nutrient supplementations. b) Nutrition education themes and messages in nutrition and health, Antenatal and postnatal care.

### Unit V

Nutritional and infection relationship: Immunization and its importance.

### Unit VI

Food borne infection and intoxication diseases, foods involved, methods of prevention, Infestation of food borne diseases, Outbreak, Prevention signs and control of infection.

### Unit VII

National and International agencies in uplifting the nutritional status -WHO, UNICEF, CARE, ICMR, ICAR, CSIR, CFTRI. Various nutrition related welfare programmes, ICDS, SLP, MOM, and others

### Unit VIII

Community nutrition programme planning - Identification of problem, analysis of causes, resources constraints, selection of interventions, setting a strategy, implementations and evaluation of the programme

### Course Outcomes:

On completion of the course, students will be able to

**CO1** Able to interpret and apply nutrition concepts to evaluate and improve the nutritional health of communities

**CO2** Plan a community intervention based upon a needs assessment

**CO3** Advocate for a public policy related to nutrition programs or health care

**CO4** Provide nutrition counseling and education to individuals, groups, and communities throughout the lifespan using a variety of communication strategies

**CO5** Provide culturally competent nutrition services for individuals and communities

**CO6** Competence in the skills of assessment, planning, management and evaluation of food service, nutrition and dietetic services in institutional food, community nutrition, and clinical dietetics settings

### Text / Reference books

1. Park K(2017): Textbook of Preventive and Social Medicine,24th Ed. BanarsidasBhanot Publishers.
2. King MH, King PMA, Morley D and AP Burgess(2015):Nutrition for Developing Countries, ELBS Oxford University Press.

3. SeshubabuVVR(2011): Review in Community Medicine, 2nd Ed, Paras Medical Books Pvt Ltd.
4. Mahajan BK, Roy RN, Saha I, Gupta, MC (2013): Text book of Preventive and Social Medicine, 4th Ed. Japee Brothers.
5. VirSC(2011): Public Health Nutrition in Developing Countries, Woodhead Publishing India.
6. Bamji MS, Krishnaswamy K and Brahmam GNV(2017): Textbook of Human Nutrition , 4th Ed. Oxford & IBH Publishing Co. Pvt. Ltd

#### END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks: 100

PART A: 10 Questions – 2 marks each – No choice

PART B: Short Answers – 5 Questions 8 marks each – 5 out of 8

PART C: Long Answers – 2 Questions 20 marks each – 2 out of 3

Exam Duration: 3Hrs

20 Marks

40 Marks

40 Marks

 New course

|                 |                                  |          |          |          |                |                    |
|-----------------|----------------------------------|----------|----------|----------|----------------|--------------------|
| <b>SACA1503</b> | <b>DIETETICS AND COUNSELLING</b> | <b>L</b> | <b>T</b> | <b>P</b> | <b>Credits</b> | <b>Total marks</b> |
|                 |                                  | <b>3</b> | <b>0</b> | <b>0</b> | <b>5</b>       | <b>100</b>         |

### Course objectives:

- To understand principles of diet therapy, modification of normal diet for therapeutic purposes and the role of dietitian.
- To demonstrate counseling techniques to facilitate behavior change.

### Unit I

Practical consideration in giving dietary advice and counseling - a) Factors affecting and individual food choice. b) Communication of dietary advice c) Consideration of behaviour modification d) Motivation.

### Unit II

Counseling and educating patient: Introduction to nutrition counseling, determining the role of nutrition counselor, Responsibilities of the nutrition counselor

### Unit III

Practitioner v/s client managed care, Conceptualizing entrepreneur skills and behavior, Communication and negotiation skills

### Unit IV

Teaching aids used by dietitians- charts, leaflets, posters etc., preparation of teaching material for patients suffering from Digestive disorders, Hypertension, Diabetes, Atherosclerosis & Hepatitis and cirrhosis.

### Unit V

Computer application: Use of computers by dietitian, Dietary computations.

### Unit VI

Dietetic management, Education/ training, Information storage, Administrations, Research

### Unit VII

Computer application a) Execution of software packages b) Straight line, frequency table, bar diagram, pie chart, Preparation of dietary charts for patients.

### Unit VIII

Statistical computation- mean, median, standard deviation, conclusion and regression test

### Course Outcomes:

On completion of the course, students will be able to

**CO1** Understand principles of diet therapy

**CO2** Realize the roles and responsibilities of a nutrition counselor

**CO3** Demonstrate awareness of counseling techniques

**CO4** Recognise dietetic management, education/ training

**CO5** Understand principles of diet therapy and counseling

**CO6** Familiarize with the teaching aids and software tools used by dietitians in counseling

### Text / Reference books

1. Nutrition in clinical Practice – David L. Katz, Lippincott, Williams & Wilkins, 2008.
2. Clinical Dietetics and Nutrition – F P Antia and Philip Abraham, 2002.
3. Perspectives in Nutrition – WardlawKessel, McGraw Hills, 2001
4. Food, Nutrition and Diet Therapy – Kathleen Mahan & Krause, Sylvia Escott Stump, 2003

5. Clinical Nutrition – Ed Michael J Gibney, Marinos Elia, Olle Ljungqvist and Julie Dowsett, 2012. 6. Basics of Clinical Nutrition, 2nd Edition, Joshi, Jaypee Publishers, 2009.
7. Gable J, Counselling skills for dieticians Blackwell publishing house, 2016.
8. Computer Fundamentals, P.K. Sinha & Prithi Sinha, 2004

END SEMESTER EXAMINATION QUESTION PAPER PATTERN

Max. Marks: 100

Exam Duration: 3Hrs

PART A: 10 Questions – 2 marks each – No choice

20 Marks

PART B: Short Answers – 5 Questions 8 marks each – 5 out of 8

40 Marks

PART C: Long Answers – 2 Questions 20 marks each – 2 out of 3

40 Marks



New course