

TELANGANA MAHILA VISWAVIDYALAYAM
DEPARTMENT OF FOOD AND NUTRITION
COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH

B. Sc. I YEAR SEMESTER I PAPER I DSC -1A

Code BS 104 BASICS OF NUTRITION AND PUBLIC HEALTH (Theory)

Discipline Specific Course

CREDITS -4

60 HOURS

Objectives:

- ❖ To enable the students to understand the basic concepts of nutrition and public health
- ❖ To know the concept of health and disease, role of national and international agencies to combat malnutrition.

UNIT I: NUTRIENTS

(15 HOURS)

Functions, dietary sources and clinical manifestations of deficiency/ excess of the following nutrients:

- Carbohydrates, lipids and proteins
- Carbohydrate metabolism (Basic steps of Glycolysis , TCA) Basic steps of protein synthesis, lipid metabolism (Beta Oxidation)
- Fat soluble vitamins-A, D, E and K and Water soluble vitamins – thiamin, riboflavin, niacin, pyridoxine, folate, vitamin B12 and vitamin C
- Minerals – Calcium, Iron and Iodine

UNIT II: FOOD GROUPS

(15 HOURS)

Composition and nutritive value, role in cookery for the following food groups:

Plant foods

- Cereals and Pulses; Nuts and Oil seeds
- Fruits and vegetables

Animal foods

- Milk & milk products
- Egg, Meat, poultry and fish

B. Soumya

T. Jyothsna

PSC

Abulhasan

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Arslobin

Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P.J.T.S. Agril. University, Saifabad,
 Hyderabad-500 004. Telangana State.

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UNIT III: INTRODUCTION TO HEALTH AND DISEASE**(15 HOURS)**

- Health, Public Health, incidence, prevalence and magnitude –Definition ; Dimensions of Health, Positive health, Quality of life index (PQLI, HDI)
- Determinants of health - Biological determinants, Behavioural and socio-cultural conditions, Environment, Socioeconomic conditions, Health services, Ageing of the population, Gender & other factors
- Health indicators - Mortality Rates and Morbidity (Incidence and Prevalence), Measurements of Burden of disease: (DALY, HALE, QALY)
- Disease and disorder - Definition; Concept of disease, Germ theory of disease and Epidemiological triad, immunization schedule. (National)

UNIT IV: MALNUTRITION, NUTRITIONAL DISORDERS AND AGENCIES TO COMBAT MALNUTRITION**(15 HOURS)**

- Malnutrition- Definition, types; Protein Energy Malnutrition (PEM) -causes, signs and symptoms and prevention
- Prevention of malnutrition at – Family level, Community level, National level and International level; Impact of malnutrition on national development
- Common nutritional disorders and prophylaxis program- Iron deficiency anemia, Iodine deficiency disorders, Vitamin A deficiency disorders and Fluorosis
- Role of national and international agencies to combat malnutrition- ICMR, ICDS, ICAR and WHO, UNICEF

Books Recommended:**Text Books:**

- ❖ Srilakshmi B- Nutrition Science, 5th Edition, New Age International Publishers, New Delhi – 110002, 2011.
- ❖ Suryatapa Das- Text book of Human Nutrition 1st Edn, Feb 2021, Academic publishers.

Reference Books:

- ❖ Srilakshmi B- Food Science, 8th Edition, New Age International Publishers, New Delhi – 110002, 2018.

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 M
 T. Jyothsna
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 Anilobha

Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P.J.T.S. Agril. University, Salfabad,
 Hyderabad-500 004, Telangana State.

I - SEMESTER
BS 104 DISCIPLINE SPECIFIC COURSE IA- (DSC 1A)
Code BS 104 BASICS OF NUTRITION AND PUBLIC HEALTH
(Practical)

15 HOURS

CREDITS-1

Objectives:

- ❖ To impart basic cooking skills and healthy cooking practices
- ❖ To understand the calculation of Health Indicators

I. Standardization, Preparation and Nutritive value calculation of the recipes based on the following food group and combination

1. Cereal preparation
2. Millet preparation
3. Pulse and legume preparation
4. Cereal-pulse combination
5. Vegetable preparation
6. Fruit preparation- custard/ salad
7. Awareness Survey and Report writing on Health, Balanced diet and Five food Groups
8. Develop a model representing epidemiological triad of a disease (communicable)
9. Calculate mortality indicators of health- Crude death rate, Specific death rates, Maternal Mortality rate, Infant mortality rate
10. Calculate morbidity indicators of health- Incidence and Prevalence

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Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P.J.T.S. Agril. University, Saifabad,
 Hyderabad-500 004, Telangana State.

COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH
B. Sc. I YEAR SEMESTER II Paper 2 DSC- 1B
CODE: BS 205 FAMILY AND COMMUNITY NUTRITION

Discipline Specific Course

CREDITS -4

60 HOURS

Objectives:

- ❖ To provide an overview of the critical role of diet as a determinant of health and nutritional status.
- ❖ To study the changes in human body composition and influence of nutrition during the different stages of life cycle.

UNIT -1 FUNDAMENTALS OF NUTRITION

(15 HOURS)

- **Food-** Source of nutrients, Classification of foods- Origin, Chemical composition, Function and Nutritive value, Definition of nutrition, nutrients
- **Balanced Diet-** Definition and Importance; Food guide-basic five food groups - My pyramid, My Plate
- **Recommended dietary Allowances (RDA)-** Derivation of RDA, factors affecting RDA and its applications
- **Planning of balanced diets-** Principles of menu planning, Steps of meal planning

UNIT II: NUTRITION THROUGH LIFE CYCLE

(15 HOURS)

- **Adulthood**– Nutritional Requirements for an Adult Man and Adult Woman
- **Pregnancy**– Physiological Changes, Increase in Nutritional Requirement ~~Complications of Pregnancy~~
- **Lactation**– Role of hormones in milk production, Increase in Nutritional Requirement and Lactogogues
- **Infancy** – Nutritional Requirement, Importance of Breastfeeding, Artificial Feeding (~~Comparison of various milks Vs Human Milk~~), Weaning and Supplementary Food

UNIT III: NUTRITION THROUGH LIFE CYCLE (contd...)

(15 HOURS)

- **Pre-Schoolers** – Nutritional Requirement, ~~Factors affecting Nutritional Status~~ *Dietary guidelines*
- **School Going Child** – Nutritional Requirement and School Lunch Programs (*Mid Day meal*)
- **Adolescence** – Nutritional Requirement, Eating Disorders
- **Geriatrics** – Nutritional Requirement, Physiological changes and Dietary Modification

PSC
B. Sanyal

M
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T. Jyoti

M. S. Sanyal
S. J.

22/10/24

Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P. J. T. S. Agril. University, Saifabad,
 Hyderabad-500 004, Telangana State.

UNIT IV: METHODS TO ASSESS NUTRITIONAL STATUS**(15 HOURS)**

- **Anthropometry** – Height, Weight, BMI, Height / Weight, Height / Age, Weight/ Age, Head and Chest Circumference, Mid Upper Arm Circumference and Skin fold Thickness
- **Biochemical Assessment** – Laboratory Test for Assessment of Nutritional Status, Hemoglobin, stools and urine
- **Clinical Assessment** – Signs and Symptoms of Malnutrition, Classification of Clinical Signs and Symptoms used in Nutritional Surveys
- **Diet Surveys** – Food Balance Sheet Method, Inventory method, Weighment Method, Expenditure Pattern, Diet History, Oral Questionnaire Method, Duplicate Sample, Dietary score and Recording Method

Books Recommended:**Text Books:**

- ❖ Srilakshmi B- Dietetics, 7th Edition, New Age International Publishers, New Delhi – 110002, 2022
- ❖ Suryatapa Das- Text book of Community Nutrition 1stEdn, Feb 2021, Academic publishers.

Reference Books:

- ❖ Srilakshmi B- Food Science, 8th Edition, New Age International Publishers, New Delhi – 110002, 2018.

DSC

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A

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S. Jyothsna

Anusha P

A2810014

B. Sanyal

S

Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P. J. S. Agril University, Sakrabad,
 Hyderabad-500 004, Telangana State.

B.Sc. NUTRITION AND PUBLIC HEALTH
First year - Second Semester
BS 204 FAMILY AND COMMUNITY NUTRITION
Practicals

CREDIT - 1

15 HOURS

1. Standardization of Weights and Measures
2. Planning, Preparation of Diet Calculation and for
 - 1) Adulthood- Male and Female
 - 2) Pregnancy
 - 3) Lactation
 - 4) Infancy -Weaning Mix
 - 5) Preschoolers
 - 6) School Going Child- Packed Lunch
 - 7) Adolescence- Boy and Girl
 - 8) Geriatrics
4. Assessment of Nutritional Status by Anthropometry and Report
5. Assessment of Nutritional Status by Diet Survey by Oral questionnaire Method
6. Consolidation of Data Collected and Report writing

PSC

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T. Jyothirmay

S

Anushail

Sh

K. S. S. S.

M. S. S.

B. S. S.

S

Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P.J.T.S. Agril. University, Saifabad,
 Hyderabad-500 004, Telangana State.

COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH
B. Sc. II YEAR SEMESTER III SEC-2
CODE: BS 302 HEALTH CARE SYSTEM
Skill Enhancement Course (Sec)

CREDITS - 2

30 HOURS

Objectives:

- ❖ To enable the students to understand the importance of health planning.
- ❖ To acquaint the students about health care system in India.

UNIT I: HEALTH PLANNING AND ADMINISTRATION

(15 HOURS)

- Health Planning- Needs and demand, Objectives, Pre-planning, Planning cycle
- Health Administration in India-Central Level, State level, - *Organization and Function*
- District Level - *Organization and Function*
- Panchayat Raj - *3 tier structure*

UNIT II: HEALTH CARE

(15 HOURS)

- Health Care - Changing concepts of Health Care - Comprehensive Health Care; Basic health care; Primary health care; Elements and principles of primary health care
- Levels of health care- Primary Health Care; Secondary Health Care; Tertiary Health Care
- Health care systems- Public Health sector- Primary Health Care, Hospitals/Health Centres, Health Insurance Schemes, Other Agencies; Private sector; Indigenous systems of medicine; Voluntary Health Agencies; National health programmes
- Health Care services-Primary health care in India- Village level; Sub-centre level, Primary health centre level; Community health centres

Books Recommended:**Text Books:**

- ❖ K Park, p Textbook of Preventive and Social Medicine, 23rd edition Bansaridas Bhanot Publishers, Jabalpur, M.P.
- ❖ Mahajan and Gupta, Textbook of Preventive Medicine, Fourth Edition, Jaypee Publishers

*PSC**M**T. Jyothirmay**M. Phani**S**Anusha P**A. Lakshmi**B. Soumya*

Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P. J. S. Agril. University, Saifabad,
 Hyderabad-500 004, Telangana State.

COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH
B. Sc. II YEAR SEMESTER III Paper 3 DSC- 1C
CODE: BS 305 THERAPEUTIC NUTRITION
Discipline Specific Course

CREDITS - 4

60 HOURS

Objectives:

- ❖ To understand the importance of diet in health and disease conditions
- ❖ To know the modifications of normal diet as per the disease condition
- ❖ To enlighten on the dietary modifications.

UNIT I: INTRODUCTION TO THERAPEUTIC NUTRITION (15HOURS)

- Role of Dieticians in Hospital, Nutritional Support Team
- Therapeutic modifications of normal diets based on Nutrients and Consistency – Clear Fluid, Full Fluid, Soft Diet and Special feeding methods - Enteral feeding and Parenteral feeding
- Underweight and Obesity- Causes, Symptoms, Dietary Modification, Foods to Be Included and Foods to Be Avoided
- Fevers - Causes, Symptoms, Dietary Modification, Foods to Be Included and Foods to Be Avoided

UNIT II: NUTRITION IN GASTRO – INTESTINAL AND LIVER DISEASES (15HOURS)

Causes, Symptoms, and Dietary Modifications, Foods to Be Included and Foods to Be Avoided

- ~~G~~, Peptic Ulcer
- Diarrhoea, Constipation
- Liver – Hepatitis, Cirrhosis, Gall Stones
- Pancreas - Pancreatitis

UNIT III: DIETARY MODIFICATIONS IN KIDNEY AND CARDIOVASCULAR DISEASES (15 HOURS)

Causes, Symptoms, and Dietary Modifications, Foods to Be Included and Foods to Be Avoided

- ~~Kidney~~ – Nephritis, Nephrosis
- Renal Failure
- Atherosclerosis
- Hypertension

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M
Ashlesha P
B. Sanyal

N. K. Phani
T. Jyothsna
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Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P. J. T. S. Agril. University, Saifabad,
 Hyderabad-500 004, Telangana State.

UNIT IV: DIETARY MODIFICATIONS IN OTHER CONDITIONS(15 HOURS)

Causes, Symptoms, and Dietary Modifications, Foods to Be Included and Foods to Be Avoided

- Diabetes Mellitus- Type I and Type II
- Cancer
- Acquired Immunodeficiency Syndrome

Books Recommended:

Text Books:

- ❖ Srilakshmi B – Dietetics, 5th edition, New Age International publishers, 2002.

Reference Books:

- ❖ Antia F.P - Clinical Dietetics and Nutrition, Oxford University Press, New Delhi – 110001, 2003.
- ❖ Mahtab S. Bamji, Prahlad Rao N, Vinodini Reddy -Text book of Human Nutrition, 2nd edition, Oxford and IBH publishing Co. Pvt. Ltd, 2004.
- ❖ Swaminathan, M - Essentials of Food and Nutrition, Vol 2, Bangalore Printing and Publishers Co Ltd, Bangalore, 1985.

PSC

W

S. Jothimay

A

Amleshwar

Ashobini

Shub

Professor & University Head
Department of Foods and Nutrition,
College of Community Science,
P.J.T.S. Agril. University, Saifabad,
Hyderabad-500 004. Telangana State.

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B.Sc. NUTRITION AND PUBLIC HEALTH
Second year - Third Semester
BS 305 THERAPEUTIC NUTRITION
Practicals

CREDIT - 1

15 HOURS

- Planning, Calculation and Preparation of Diets for
 - Clear Fluid & Full Fluid
 - ~~Full Fluid~~
 - Soft Diet
 - Diarrhea
 - Constipation
 - Peptic Ulcer
 - Hepatitis
 - Cirrhosis
 - Gallstones
 - Cancer
 - T₂DM

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Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P. J. T. S. Agril. University, Saifabad,
 Hyderabad-500 004, Telangana State.

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COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH
B. Sc. II YEAR SEMESTER IV SEC-4
CODE: BS 402 DISASTER MANAGEMENT
Skill Enhancement Course (SEC)

CREDITS - 2

30 HOURS

Objectives:

- ❖ To know the concepts of disasters and its impact and response.
- ❖ To enable the students to protect themselves before, during and after emergencies.

UNIT I: EMERGENCIES AND DISASTERS

(15HOURS)

- Definition, General Concepts, Classification- Natural and manmade
- Typical course of a disaster, Disaster assessment
- Short term effect of major disaster
- Disaster impact and response, Relief phase

UNIT II:DISASTER MANAGEMENT

(15HOURS)

- Epidemiological surveillance and disease control, vaccination
- Nutrition and rehabilitation , Mitigation
- Disaster preparedness
- Personal protection in different types of emergencies- floods (what to do before hand, during a flood, after a flood), Storms, Hurricanes and tornadoes (what to do before hand, during a flood, after a flood), Earthquakes (what to do before hand, during a flood, after a flood), toxic fumes (what to do before hand, during a flood, after a flood)

Books Recommended:**Text Books:**

- ❖ K Park, p Textbook of Preventive and Social Medicine, 23rd edition Bansaridas Bhanot Publishers, Jabalpur, M.P.
- ❖ Mahajan and Gupta, Textbook of Preventive Medicine, Fourth Edition, Jaypee Publishers

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Shubh
Z. Soumya

Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P. J. T. S. Agril. University, Saifabad,
 Hyderabad-500 004, Telangana State.

COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH

B. Sc. II YEAR SEMESTER IV Paper 4 DSE-1D

CODE: BS 405FOOD SAFETY AND QUALITY CONTROL

Discipline Specific Elective(DSE-1D)

60 HOURS

CREDITS -4

Objectives:

- To enable the students on concepts of food safety.
- To equip students about the food quality control and its importance
- To enable to understand about food adulteration, food packaging, and food laws

UNIT I: FOOD SAFETY AND REGULATIONS

(15 HOURS)

- Food safety- Definition, Hazard- Definition, Types- Physical, Chemical and Biological; Factors affecting food safety, Basic purpose of food laws; History of food laws
- Definition , evolution , Salient features of Food Safety and Standards Authority of India (FSSAI, 2006), Highlights of FSSAI
- Role of national voluntary agencies-Bureau of Indian Standards (BIS), Agricultural Products (Grading and Marking Act)(AGMARK)
- Role of international regulations-Codex Alimentarius Commission (CODEX), International Organization of Standardization (ISO), Hazard Analysis of Critical Control Points (HACCP) – Definition and purpose

UNIT II: FOOD ADDITIVES AND ADULTERATION

(15 HOURS)

- Food Adulteration- Definition, Types of Adulterants- Incidental, Intentional
- Metallic contamination; Natural toxic substances in foods; Effects of food adulteration
- Food Additives- Definition, Classification- Preservatives, Colours, Flavouring agents, Artificial sweeteners
- Emulsifiers and Stabilizers, Anti caking agents, antioxidants

A. Suresh

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T. Jothiraj

28/06/24

B. S. S.

P. S.

Professor & University Head
Department of Foods and Nutrition,
College of Community Science,
P J T S Agril. University, Saifabad,
Hyderabad-500 004, Telangana State.

UNIT III- FOOD PACKAGING AND LABELLING**(15 HOURS)**

- Packaging- Definition, functions, points to mind for designing a packaging system, classification- primary, secondary and tertiary or bulk; types of packaging materials-rigid, semi rigid and flexible,
- Recent developments in packaging- plastic crates, high barrier plastics, retortable pouches, microovenable packages, vacuum packaging, shrink-wrap packaging; edible food wraps
- Labelling of foods- Nutrition labeling, guiding principles of nutrition labeling, Need for nutritional labelling
- Effective system of labelling; Nutrition facts and Health claims; labelling provisions in existing food laws

UNIT IV- FOOD QUALITY CONTROL**(15HOURS)**

- Importance of food quality control; Protecting public health and eliminating risk
- Farm to table strategy
- Animal traceability
- Characterization and Risk Analysis- Risk Assessment, Risk Management and Risk Communication

Books Recommended:**Text Books:**

- ❖ Food Science by Sri lakshmi, New Age International Publishers.
- ❖ Late Anjana Agarwal, Shobha A Udipi - Textbook of Human Nutrition, second edition, Jaypee brothers medical publishers, New Delhi
- ❖ Mahtab S. Bamji, Kamala Krishnaswamy and G.N.V. Brahmam Textbook of Human Nutrition, 3rd Edition

Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P J T S. Agril. University, Saifabad,
 Hyderabad-500 004. Telangana State.

COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH

B. Sc. II YEAR SEMESTER IV Paper 4 DSE-1D

CODE: BS 405FOOD SAFETY AND QUALITY CONTROL

Discipline Specific Elective (DSE-1D)

Practicals

CREDIT – 1

15 HOURS

- Identification of adulterants for the following foods
 - Cereal grains and flours
 - Pulses and legumes
 - Gram flours
 - Milk- water, Starch
 - Milk products- Ghee, butter
 - Oils- mineral oil, castor oil, coconut oil
 - Spices and condiments – turmeric, coriander, black pepper, red chili powder, salt
 - Beverages- Honey, Tea powder, Coffee
- Identification of food colours and textile colours
- Market survey on labeling of foods

Text Books:

- ❖ Food Science by Sri lakshmi, New Age International Publishers.
- ❖ Late Anjana Agarwal, Shobha A Udipi - Textbook of Human Nutrition, second edition, Jaypee brothers medical publishers, New Delhi
- ❖ Mahtab S. Bamji, Kamala Krishnaswamy and G.N.V. Brahman Textbook of Human Nutrition, 3rd Edition

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Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P J T S Agril. University Saifabad,
 Hyderabad-500 004 Telangana State.

COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH**B. Sc. III YEAR SEMESTER V Paper 5 DSE- 1E****CODE: BS 504 EPIDEMIOLOGY OF COMMUNICABLE DISEASES****Discipline Specific Elective (DSE)****CREDITS- 2****Objectives:**

- ❖ To understand the concept of Epidemiology
- ❖ To know the various factors contributing to communicable diseases
- ❖ To enlighten on the epidemiology of communicable diseases

UNIT I: INTRODUCTION TO EPIDEMIOLOGY(15 HOURS)

- Definition, components & aims of epidemiology, Epidemiological approach, Basic measurement in Epidemiology
- Types of Epidemiological studies- Basics of
 - a) Descriptive
 - b) Analytical
 - c) Case control
 - d) Cohort study
- Experimentalepidemiology : Animal studies, Human studies, Randomized controlled trials, Non Randomized Trials, Association & causation

UNIT II: BASIC CONCEPTS OF EPIDEMIOLOGY(15 HOURS)

- Uses of Epidemiology
- Infectious disease Epidemiology- Selected definitions; Dynamics of disease transmission – Human reservoir, Animal Reservoir, reservoir in non living things
- Modes of transmission – Direct, Indirect; Susceptible host- successful parasitism, incubation period, serial interval, generation time, communicable period, secondary attack rate, Host defences- active, passive, Herd immunity

UNIT III: EPIDEMIOLOGY OF COMMUNICABLE DISEASES I (15 HOURS)

Epidemiological determinants, Clinical Manifestations, control and preventive measures

- Respiratory infection: chickenpox. Measles. Mumps, influenza
- Intestinal infections – polio, cholera, typhoid, food poisoning
- Arthropod borne infection – Dengue, Malaria, Lymphatic Filariasis
- Zoonoses- Viral (Chikungunya fever), Bacterial (Plague), Rickettsial (Typhus Group), Parasitic (Taeniasis)

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Professor & University Head
Department of Foods and Nutrition,
College of Community Science,
P.J.T.S. Agril. University, Saifabad,
Hyderabad-500 004. Telangana State.

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UNIT IV: EPIDEMIOLOGY OF COMMUNICABLE DISEASES II (15 HOURS)

Epidemiological determinants, Clinical Manifestations, control and preventive measures

- Surface infections- Leprosy , STD, AIDS
- Emerging & re-emerging infectious diseases- history
- Hospital acquired infections- Definition , sources, routes of spread recipients
- National Health programmes for control- cholera/ elimination-malaria / eradication- polio of communicable diseases.

Books Recommended:**Text Books:**

- ❖ K. Park - Text book of Preventive and Social Medicine 23rd Edn, 2015, Bhanot publishers.
- ❖ Mahajan and Gupta, Textbook of Preventive Medicine, Fourth Edition, Jaypee Publishers
- ❖ Yashpal Bedi, Textbook of Preventive Medicine

DSC

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Anlesha

M

T. Jyothsna

Dr. Logan

S

S

Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P. J. T. S. Agril. University, Saifabad,
 Hyderabad-500 004, Telangana State.

M. S. S. S.

B. Sanyal

COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH**B. Sc. III YEAR SEMESTER V Paper 5 DSE- 1E****CODE: BS 504 EPIDEMIOLOGY OF COMMUNICABLE DISEASES****Discipline Specific Elective (DSE)****CREDIT - 1****15 HOURS****I Preparation of AV Aids for**

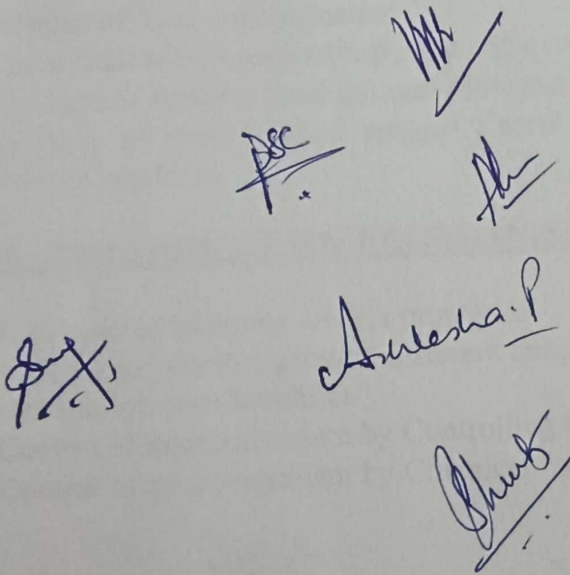
1. Measles
2. Cholera
3. Typhoid
4. Malaria
5. Chicken guniya

II. Awareness on

6. prevention of communicable disease
7. Developing checklist for prevention of communicable disease

III. Report on

8. National program for eradication of Polio
9. National Control of Malaria
10. National program for elimination of Cholera



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T. Jothanayy

Asst. Prof.

Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P.J.T.S. Agril. University, Saifabad,
 Hyderabad-500 004, Telangana State.

K. Ramesh

S. Sanyal

COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH

B. Sc. III YEAR

SEMESTER V

Paper 5 DSE- 1E

CODE: BS 504 FOOD MICROBIOLOGY

Discipline Specific Elective (DSE)

60 HOURS

CREDIT – 4

Objectives:

- ❖ To know the important genera of microorganisms associated with food and their characteristics.
- ❖ To understand the role of microbes in fermentation, spoilage and food borne diseases.
- ❖ To gain knowledge on various methods of cultivation and identification of food microbes.

UNIT I: INTRODUCTION TO FOOD MICROBIOLOGY

- Introduction of microbiology and its relevance to everyday life, Scope of food microbiology.
- General characteristics of bacteria, fungi, virus.
- Microbial Growth in Food: Bacterial growth curve and microbial growth in food. Morphology, structure and significance of spores in food microbiology.
- Factors affecting the growth of microorganisms in food- intrinsic and extrinsic.

UNIT II: MICROBIAL FOOD CONTAMINATION AND SPOILAGE:

- Sources of food contamination,
- Classification of foods with the ease of spoilage.
- Spoilage of specific food groups- Milk and dairy products, Meat, poultry and seafoods.
- Spoilage of specific food groups- Cereal and cereal products, Fruits and vegetables and Canned products.

UNIT III - CONTROL OF MICROORGANISMS IN FOODS

- Preservation methods – basic principles
- Microorganism that grow at different temperature and by different methods- thermophiles, mesophiles, psychrophiles
- Control of microorganism by Controlling temperature –heat, cold and Irradiation
- Control of microorganism by Chemical methods

J. Jothimay,

 Anlesmal,

 B. Soumya,

 Professor & University Head

 Department of Foods and Nutrition,

 College of Community Science,

 P.J.T.S. Agril. University, Saifabad,

 Hyderabad-500 004, Telangana State.

UNIT: IV - FOODBORNE DISEASES:

- Food borne disease and infections of bacterial origin, Symptoms and methods of control- staphylococcus, salmonellosis, typhoid, cholera
- Food borne disease and infections caused by Viruses Symptoms and methods of control- hepatitis A
- Food borne disease and infections caused by Protozoan and parasites, Symptoms and methods of control amebiasis, trichinosis
- Food borne toxins- mycotoxins and mushroom poisoning of food

Books Recommended:**Text Books:**

- ❖ Frazier William C and West off, Dennis C. Food Microbiology, TMH, New Delhi, 2004
- ❖ Jay, James M. Modern Food Microbiology, CBS Publication, New Delhi, 2000
- ❖ Garbutt, John. Essentials of Food Microbiology, Arnold, London, 1997.
- ❖ Banwartt: Food Microbiology
- ❖ Pelczar MJ, Chan E.C.S and Krieg, Noel R. Microbiology, 5th Ed., TMH, New Delhi, 1993.
- ❖ Sunetra Roday, Food Hygiene and Sanitation with Case Studies, 2nd Edition, Tata Mac Grill Publishers

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PSC

M

T. Jyothsna

A

29/06/24

Anusha P

Professor & University Head
Department of Foods and Nutrition,
College of Community Science,
P. J. T. S. Agril. University, Saifabad,
Hyderabad-500 004, Telangana State.

B. Saunys

N. K. Phani

B. Saunys

COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH

B. Sc. III YEAR SEMESTER V Paper 5 DSE- 1E

CODE: BS 504 FOOD MICROBIOLOGY

Discipline Specific Elective (DSE)

Practicals

15 HOURS

CREDIT – 1

- 1) Microscopic identification of bacteria, virus and fungi.
- 2) Sterilization Techniques
- 3) Preparation of Nutrient media
 - i. Potato Agar
 - ii. Nutrient Agar
- 4) Inoculation techniques – streak plate method
- 5) Inoculation techniques – pour method
- 6) Microbial counting
- 7) Identification of microorganisms using Simple staining
- 8) Identification of microorganisms using Gram staining
- 9) Determination of quality of milk by MBRT

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Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P. J. T. S. Agril. University, Saifabad,
 Hyderabad-500 004, Telangana State.

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 B. Sounye

COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH**B. Sc. III YEAR****SEMESTER VI****CODE: BS 601 PROJECT WORK****CREDITS- 6****60 HOURS**

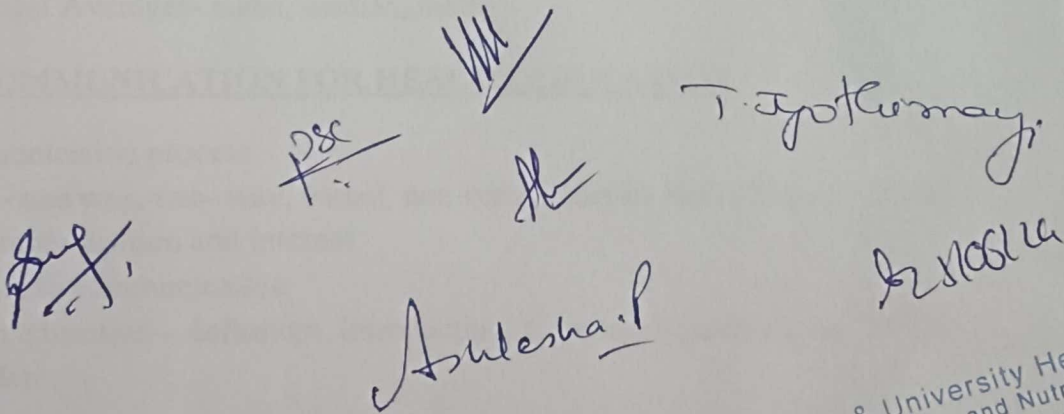
- The students will be guided and supervised by a member of the teaching faculty of the concerned department. The project should reflect the student's own work.
- A research project work (group) undertaken by students under the guidance of an supervisor, can also be a survey. The research should be submitted at the end of semester in the form of a project report.
- Students should submit 3 copies of project report signed by HOD and project supervisor at the time of Viva.
- Students Copy in Hard/Soft Bound
- Exam Branch and Department Copy in Spiral Bound

Internal Examination

- Continuous assessment of day to day work of the student in terms of proposal, data collection, tools developed, techniques used and documentation of report will be done for 90 marks by the concerned supervisor.

External Examination

- Viva-voce of 10 marks will be conducted by the External Examiner.



 A collection of handwritten signatures in blue ink, including 'DSC', 'M', 'T. Jothirama', 'Anulsha P', and 'B. Soumya'.

Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P J T S Agril. University Saifabad,
 Hyderabad-500 304, Telangana State.

M. P. S.

B. Soumya

COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH

B. Sc. III YEAR SEMESTER V Paper 6 DSE- 1F

CODE: BS 604 HEALTH INFORMATION AND EDUCATION
Discipline Centric Core (DSE-1F)

CREDIT – 4

60 HOURS

Objectives:

- ❖ To understand the concepts of health information and education
- ❖ To know the various factors and sources of health information
- ❖ To enlighten on the various aids used in health education

UNIT I: INTRODUCTION TO HEALTH INFORMATION

- Definition, distinction between data and information , Requirements, components and
- Uses of health information
- Sources of health information- census, registration, sample registration system notification, Hospital Records, disease registers
- Sources of health information (contd..)- Record linkage, epidemiological surveillance, other service records, environment health data, health manpower statistics, population surveys, other routine statistics related to health, non- quantifiable information

UNIT II: ELEMENTARY STATISTICAL METHODS- PRESENTATION OF DATA

- Types of data- primary , secondary- sources
- Tabulation- simple, frequency tables
- Charts and Diagrams- Bar charts- simple, multiple, component; line diagrams, pie charts
- Statistical Averages- mean, median, mode

UNIT III: COMMUNICATION FOR HEALTH EDUCATION

- Communication process
- Types- one way, two- way, verbal, non verbal, formal and informal, visual, telecommunication and internet
- Barriers to communication
- Health education – definition, introduction, aims and objectives, role of health care providers

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B. Soumya
T. Jyothsna
Anusha
Shubh
22106124
Mozshmi

Professor & University Head
Department of Foods and Nutrition,
College of Community Science, 26
P J T S. Agril. University, Sakshat,
Hyderabad-500 004, Telangana State.

2024-2027

UNIT IV: HEALTH EDUCATION

- Approaches to Health education- Regulatory approach, service , health education and primary health care approach
 - Models of Health education – medical, motivation , social intervention
 - Contents of health education – human biology, Nutrition, hygiene, family, disease prevention and control, mental health, prevention of accidents, use of health services
 - ✱ Principles of health education
- Practice of health education
 - Audio- Visual Aids- Auditory, Visual, Combined
 - Methods in health Communication- Individual
 - Group approach
 - Mass approach

Books Recommended:**Text Books:**

- ❖ K. Park - Text book of Preventive and Social Medicine 23rd Edn, 2015, Bhanot publishers.
- ❖ Mahajan and Gupta, Textbook of Preventive Medicine, Fourth Edition, Jaypee Publishers

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T. Jyothsna

Asulesha P

Asst 06/24

B. Sanyal

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Professor & University Head
Department of Foods and Nutrition,
College of Community Science,
P.J.T.S. Agril. University, Saifabad,
Hyderabad-500 004, Telangana State.

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COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH**B. Sc. III YEAR****SEMESTER V****Paper 6 DSE- 1F****CODE: BS 604 HEALTH INFORMATION AND EDUCATION****Practicals****CREDIT - 1****15 HOURS**

1. Tabulation of Raw Data - Simple table
2. Frequency table
3. Calculation of Percentage
4. Diagrammatic representation of Raw Data
5. Graphical representation of Raw Data
6. Calculation of mean
7. Calculation of Median
8. Calculation of Mode
9. Development of visual Teaching aid for Nutrition and Health Education
10. Development of Audio visual Teaching aid for Nutrition and Health Education

T. Jothumay

PSC

Anlesha P. Anubhava

Professor & University Head
 Department of Foods and Nutrition,
 College of Community Science,
 P.J.T.S. Agril. University, Saifabad,
 Hyderabad-500 004, Telangana State.

B. Saunye

Anubhava

N. K. Phani

COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH

B. Sc. III YEAR

SEMESTER VI

Paper 6 DSE- 1F

CODE: BS 604 FOOD HYGIENE AND SANITATION

Discipline Specific Elective (DSE- 1F)

CREDIT - 4

60 HOURS

Objectives:

- ❖ To acquaint the students with the aspects of food hygiene and sanitation.
- ❖ To understand importance of personal hygiene and pest control.
- ❖ To know the quality food standards and safety measures taken at work place.

UNIT I: HYGENIC HANDLING OF FOODS

(15 HOURS)

- Hygiene: Definition of hygiene, food hygiene and sanitation, General guidelines while receiving and inspecting deliveries
 - dry food storage,
 - refrigerated storage
 - freezer storage
- Hygienic Food Handling- Procedures to minimize microbial load
 - Procedures in food preparation- cleaning, washing, pre-preparation and thawing
- Cooking food- Stuffed preparations, Coated preparations and mixing raw and cooked ingredients
 - Microwave heating, Hot holding foods
- Common faults in food preparation

UNIT II: SANITATION OF PREMISES AND ENVIRONMENT

(15 HOURS)

- Layout of premises- The receiving area, the storage area, the kitchen, staff rooms, sanitary accommodation
- Building interiors- floors, walls, ceilings, staircases, lift
- Ventilation- Definition, sources, types- natural and artificial
- Lighting- Essentials of good lighting, Artificial lighting- light produced by Combustion and electricity, Advantages and disadvantages

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T. Jothirama

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PSC

A. Suresh

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B. Sanyal

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Professor & University Head
Department of Foods and Nutrition,
College of Community Science,
P. J. T. S. Agril. University, Saifabad,
Hyderabad-500 004. Telangana State.

UNIT III PERSONAL HYGIENE AND PEST CONTROL**(15HOURS)**

- Basic aspects of personal hygiene; Necessity for personal hygiene
- Personal appearance, sanitary practices, habits, protective clothing; Importance of rest, exercise and recreation
- Classification of pests *and their control measures*
- Importance of pest control

UNIT IV: QUALITY FOOD STANDARDS AND SAFETY AT WORK PLACE**(15HOURS)**

- Hazard Analysis of Critical Control Points (HACCP) – Definition, Principles; Regulatory agencies, functions of public health
- Local health authority- application for licence, conditions for licence
- Food Inspectors- Powers and duties, Food Inspection report
- Municipal Health Laws

Books Recommended:**Text Books:**

- ❖ Sunetra Roday –Food hygiene and sanitation with case studies, 2ndEdn, 2011, Tata Mc Graw hill education (India) Pvt ltd, New Delhi.
- ❖ Mohini Sethi, Institutional Food Management, 2nd Edition, New Age Publishers

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T. Jyothsna

PSC

Anusha P

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B. Lounya

[Signature]

Professor & University Head
Department of Foods and Nutrition,
College of Community Science,
P. J. T. S. Agril. University, Saifabad,
Hyderabad-500 004, Telangana State.

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COURSE: B.Sc. NUTRITION AND PUBLIC HEALTH

B. Sc. III YEA SEMESTER VI Paper 6 DSE- 1F

CODE: BS 604 FOOD HYGIENE AND SANITATION

Discipline Specific Elective (DSE- 1F)

Practicals

CREDIT – 1

15 HOURS

- Develop a HACCP Plan for the following Indian Recipes. Identify Critical control points and corrective measures:
 - Recipe -1
 - Recipe - 2
 - Recipe –3
- Preparation of food sanitation check list for receiving and storage
 - General storage
 - Refrigeration storage
 - Freezer storage
- Preparation of check list for food preparation and handling practices
- Preparation of check list for pest control
- Preparation of check list for personal practices
- Preparation of check list for safety

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28/06/24

T. Jothimayi

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DSC

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28/6/24

Anusha P

28/6/24

B. Sanyal

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Professor & University Head
Department of Foods and Nutrition,
College of Community Science,
P. J. S. Agril. University, Saifabad,
Saifabad-500 004, Telangana State.

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