**ST.FRANCIS DEGREE COLLEGE FOR WOMEN BEGUMPET**

**HYDERABAD-500016**

**(AN AUTONOMOUS COLLEGE OF OSMANIA UNIVERSITY)**

**DEPARTMENT OF NUTRITION**

| | | |
|---|---|---|
| **DSC- 11** | **COMMUNITY NUTRITION** | |
| | **SEMESTER- IV** | **45 HRS** |

**Module –1** **Assessment of Nutritional Status**

**Module –2** **Nutrition Education, Nutritional Problems and Agencies Combating Malnutrition**

**Module –3** **Occupational Hazards and Nutrition In Emergencies and Disasters**

- The syllabus contains three Modules.
- Paper should give equal weightage to all Modules.
- Three long question- One question per module with internal choice

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## SEMESTER –IV

## COMMUNITY NUTRITION

### 1. Course details:

**Programme : M.Sc.**
**Course Code: P24/NUT/DSC/401**
**Type of course: DSC-11**
**No. of credits : 3**

**Max.Hours : 45 Hours**
**Hours per week: 3 Hours**
**Max.Marks: 100**

### 2. Course Objectives:

- To understand the causes / determinants and consequences of nutritional problems in a community.
- To familiarize students with various approaches to nutrition and health interventions, programmes and policies.

### 3. Course Outcomes:

On completion of the course the student will be able to

CO 1: Create skills to conduct simple nutritious assessments by various methods.

CO 2: Evaluate and prevent common nutritional problems in India and analyze the role of various National and International agencies in combating malnutrition.

CO 3: Understand different nutritional tools in educating the community. Developing the skills of Nutritional relief and response during emergencies and disasters.



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**4. Course Content**

## MODULE1: ASSESSMENT OF NUTRITIONAL STATUS (15 Hrs)

**1.1 Methods of Assessment:**Direct, indirect. **Anthropometry:** Weight, height, mid arm circumference, head and chest circumference, Skin fold thickness, BMI – uses and limitations. Weight / Height, Weight / Age, Height / Age – ICMR, NCHS standards, Gomez and Waterloo's classification, WHO standards.

**1.2 Biochemical and Clinical Assessment:Biochemical methods:** biochemical tests for Nutritional deficiencies – PEM, Vitamin A, Anaemia, Iodine status, Vitamin D, Riboflavin, Niacin, Folic acid. **Clinical Assessment:** Introduction and uses, WHO classification, Classified list of signs used in assessment. Nutritional deficiency disorders and their signs and symptoms-Kwashiorkor, Marasmus, Vitamin A, Iron deficiency Anaemia, Iodine, Vitamin C and Vitamin D. Limitations of clinical assessment.

**1.3 Diet Surveys and Vital statistics:** Individual, Institutional and National, Uses and limitations of diet surveys. Definition, sources, advantages and limitations of vital statistics, causes of infant mortality and morbidity rate, causes of Maternal mortality and morbidity rate.

## MODULE 2: NUTRITION EDUCATION, NUTRITIONAL PROBLEMS AND AGENCIES COMBATING MALNUTRITION (15 Hrs)

**2.1 Nutrition Education:** Importance of Nutrition and Health Education Tools and techniques of health education. Audio aids, Visual aids, Audiovisual aids, advantages and disadvantages. Types of approaches: personal, group and mass, advantages and disadvantages.

**2.2 Major nutritional problems:** Health administration at Central level, State level, Village level, Primary Health Care. Magnitude of malnutrition in India, Consequences of malnutrition, PEM, Anaemia, Vitamin A deficiency disorder, Dental caries, Fluorosis.

**2.3 Measures to combat malnutrition, National and International agencies:** ICDS, mid-day meal program, IDDCP, Vitamin A prophylaxis program, Iodine. Objectives and functions of ICMR, NIN, CFTRI.Objectives and functions of CARE, UNICEF, WHO. Food fortification, dietary diversification, supplementary feeding, bio technical approaches.

## MODULE 3: OCCUPATIONAL HAZARDS AND NUTRITION IN EMERGENCIES AND DISASTERS (15 Hrs)

**3.1 Occupational hazards:** Physical- heat and cold, light, noise, vibration, UV Radiation, Ionizing radiation; Chemical- local action, inhalation, ingestion; Biological, mechanical and psychosocial.

**Protection of health and nutritional status of workers:** Women employees in industries and establishments, medical measures, Infrastructure measures and legislation.

**3.2 Emergencies and Disasters:** Definition, classification- Natural and manmade- famine, drought, floods, earthquake, cyclone, war, civil and political emergencies; factors giving rise to emergency

situations in disasters. Control (prevention and treatment) of communicable diseases/infections during emergencies and disasters- Viral hepatitis, malaria, acute respiratory infections, measles.

**3.3 Nutritional relief, rehabilitation and response programs:** Assessment of food needs, food distribution strategy, Mass and supplementary feeding, evaluation of feeding programmes and household food security. Community and National preparedness, coordination, disaster cycle, Administration of water, basic sanitation, distribution centres and camps.

**5. Reference Books:**

1. Public Health Nutrition – Michale J. Gibney, Barrie M. Margetts, John M. Kearney and Lenore Arab (Eds.) – Nutrition Society Textbook Series, Blackwell Publishing.
2. Nutritional Science – B. Sri Lakshmi, New Age International Publ;ishers, 2nd edition.
3. Text Book of Human Nutrition – Mahtab S Bamji, N PrahladRao, Vinodini Reddy,2nd editon, Oxford & IBH Publishing Co. Pvt. Ltd.
4. Social and Preventive Medicine – Part & Park. □ Goyet, Fish.V.Seaman,J and Geijer.U.(1978) The management of Nutrition Emergencies in Large Population, WHO, Geneva.
5. The Management of Nutrition in Major emergencies, WHO in collaboration with UNHCR, International Federation of Red Cross and Red Crescent societies and WFP.
6. Owen. A. Y. and Frankle, R. T. (1986) Nutrition in the Community. The Art of delivering Services, 2nded. Times Mirror/ Mosby.
7. WFP/ UNHCR (1998) WEP/ UNHCR Guidelines for Selective Feeding Programmes in Emergency Situations. Rome and Geneva: WEP & UNHCR.
8. Goyet, Fish. V. Seaman, J. and Geijer, U. (1978) The Management of Nutritional emergencies in Large Populations, World Health Organization, Geneva.



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**DEPARTMENT OF NUTRITION**

| | | |
|---|---|---|
| **DSC- 12** | **FOOD MICROBIOLOGY** | |
| | **SEMESTER- IV** | **45 HRS** |

**Module –1** **Microbes, Food Preservation and Food Hazards**

**Module –2** **Food Contamination, Microbial Spoilage and Food Safety**

**Module –3** **Mycotoxins and Fermented Foods**

- The syllabus contains three Modules.
- Paper should give equal weightage to all Modules.
- Three long question- One question per module with internal choice

## 6. Syllabus Focus

### a) Relevance to Local, Regional, National and Global Development Needs

| Local/Regional/National /Global Development Needs | Relevance |
|---|---|
| Global | Community nutrition is the specialized field of dietetics that focuses on providing education and resources within the community to meet its needs. |

### b) Components on Skill Development/Entrepreneurship Development/Employability

| SD/ED/EMP | Syllabus Content | Description of Activity |
|---|---|---|
| EMP | 1 | The practical session will enable the students to Assess the Nutritional status of any individual by various methods which is the important aspect in getting employed. |
| SD | 2 | The Development of Teaching aids and Nutrition Education will enhance the skill of Educating the community. |

**7. Pedagogy**

| S. No | Student Centric Methods Adopted | Type / Description of Activity |
|---|---|---|
| 1. | Seminar Presentation | Participative Learning |
| 2. | Quiz/ case studies | Experiential Learning |
| 3. | Group Discussion | Participative Learning |

**8. Course Assessment Plan**

**a) Weightage of Marks in Continuous Internal Assessments andEnd Semester Examination**

| COs | Continuous Internal Assessments - CIA (40%) | End Semester Examination - (60%) |
|---|---|---|
| CO1 | CIA-1 | End Semester examination |
| CO2 | CIA-1 | |
| C03 | CIA-2 Planning of questionnaire / Visual Aids/Posters | |
| | CIA-2 Skill test (written/quiz/ FIB) | |



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**b) Model Question Paper- End Semester Exam**

| SECTION A - INTERNAL CHOICE | | | 3Q X 12 M = 36 M | |
|---|---|---|---|---|
| **Question Number** | **Question** | **Question** | **CO** | **BTL** |
| 1 | **Module 1** | Write about the Biochemical assessment in detail. | **CO 1** | **II** |
| 2 | **Module 1** | Illustrate the Anthropometry measurements and limitations. | **CO 1** | **II** |
| 3 | **Module 2** | Illustrate the tools and techniques used in health education. | **CO 2** | **V** |
| 4 | **Module 2** | Mark the nutritional problems in India. | **CO 2** | **V** |
| 5 | **Module 3** | Explain about nutritional relief and rehabilitation centers. | **CO 3** | **II & V** |
| 6 | **Module 3** | Explain public nutrition approach to tackle nutritional problems in emergencies. | **CO 3** | **II & V** |
| **SECTION B - ANSWER ANY 4 OUT OF 6** (To compulsorily have **ONE** question from **each** module) | | | **4 Q X 6 M = 24 M** | |
| 7 | **Module 1** | Elaborate Waterloo's classification | **CO 1** | **VI** |
| 8 | **Module 1** | List the Examples of biomarkers | **CO 1** | **IV** |
| 9 | **Module 2** | Illustrate Primary Health Care | **CO 2** | **II** |
| 10 | **Module 2** | ExplainFluorosis | **CO 2** | **II** |
| 11 | **Module 3** | Show Food distribution strategy | **CO 3** | **II** |
| 12 | **Module 3** | Illustrate women Employees in Industries | **CO 3** | **II** |



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## SEMESTER-IV
## COMMUNITY NUTRITION
## PRACTICAL

**Programme : M.Sc.**

**Course Code: P24/NUT/DSC/401/P**

**Type of course: DSC-11**

**Max.Hours : 30**

**Hours per week: 4**

**Max.Marks: 50**

**Course Objectives:**

1. To give an insight into the various low cost ingredients available in the market and develop low cost nutritious recipes for vulnerable segments of the community.
2. To develop teaching aids for Nutrition and Health Education.

**Course Outcomes:**

- To develop Low cost nutritious recipes for vulnerable groups.
- To develop and educate the community using teaching aids.

**PRACTICAL SESSIONS**

1. Assessment of Nutritional Status using:

a) Anthropometry - Weight, height, BMI in young Adults

b) Anthropometry - Weight, height, MUAC in children

c) Clinical Assessment of children using standard format/Table given by WHO

d) Assessment of Body composition using Bioimpedance analyser

e) Diet survey – Food frequency questionnaire and 24 hr dietary recall.

2. Development of Teaching aids/Audio-visual aid for Nutrition and Health Education.

3. Plan and preparation of Recipe and calculate Nutritive value and cost of

a) Protein and energy Rich

b) Calcium Rich

c) Iron Rich

d) Vitamin A/ Beta carotene

4. A Visit to-

a) Anganwadi centre to observe the functioning of ICDS and Report

b) Government schoolserving mid day meal and report

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## COMMUNITY NUTRITION

## MODEL QUESTION PAPER
## PRACTICAL

**Course Code: P24/NUT/DSC/401/P**

**No. of credits: 2**

**Time: 2 Hrs**

**Max Marks :50**

**Answer the following**

1. Plan a standardized low- cost recipe and calculate the nutritive value for two servings **25M**
2. Preparation of the standardized Recipe **10 M**
3. Write a report on any one of the following **10 M**

a)

b)

c)

5. Record **5 M**

| Prepared by | Checked &Verified by | Approved by |
|---|---|---|
| Nandini<br>Ms. V. Durga Nandini<br>Signature of Faculty | Ms. Tabitha Ramona<br>Signature of Head | Signature of Principal |



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## SEMESTER –IV

## FOOD MICROBIOLOGY

### 1. Course Details

**Programme : M.Sc.**
**Course Code: P24/NUT/DSC/402**
**Type of course: DSC-12**
**No. of credits : 3**

**Max.Hours : 45**
**Hours per week: 3**
**Max.Marks: 100**

### 2. Course Objectives:

1. To familiarize students with the basics of Food Microbiology.
2. To enable students to gain knowledge on preservation techniques and food contamination.
3. To make students understand the importance of fermentation, techniques and fermented products.

### 3. Course Outcomes:

On completion of the course the student will be able to

CO 1: Understand the Scope of microbiology, remember the effect of microorganisms in food preservation and food borne diseases.

CO 2: Analyse the different types of food spoilage affecting shelf life of food products.

CO 3: Understand the mycotoxins impacting food production and types of fermentation.

**4. Course Content**

## MODULE1: MICROBES, FOOD PRESERVATION AND FOOD HAZARDS (15 Hrs)

**1.1 Introduction and types of microorganisms and their general characteristics:** Scope of microbiology, Importance of microbiology in applied areas – medical, soil, milk, air, food, Space and industry. Fungi (molds and yeast), Bacteria, Protozoa, Viruses. Intrinsic factors affecting microbial growth- Nutrient content, pH, Redox potential, water activity. Extrinsic factors affecting microbial growth- Humidity, temperature, Gaseous atmosphere.

**1.2Methods of food preservation**: Definition and Principles of food preservation. Pasteurization, Blanching, Canning, Slow and quick freezing, Freeze drying, Irradiation, Drying and Dehydration. Use of preservatives: Salt, sugar, vinegar, Use of chemical preservatives.

**1.3 Food Hazards and Food borne toxicants:** Food Borne diseases- Types: Communicable and non-communicable. Food borne intoxications- staphylococcus poisoning, bacillus cereus poisoning, botulism. Food borne infections- Salmonellosis, shigellosis, gasteroenteritis, E. Coli. Food borne toxic infections-Clostridium perfringens, cholera, Listeriosis. Mycotoxins- Aflatoxins, ergotoxins. Naturally occurring toxicants- Lathyrism, epidemic dropsy.

## MODULE 2: FOOD CONTAMINATION, MICROBIAL SPOILAGE AND FOOD SAFETY (15 Hrs)

**2.1 Introduction:** Classification of foods by ease of spoilage and on the basis of shelf life. Causes of spoilage- Microbiological action, presence of contaminants, action of insects, natural enzymes, physical changes and chemical reactions. Microbiological criteria for foods- Microbiological specifications, standards and guidelines. Sources of contamination – water, air, soil, animals and humans.

**2.2 Spoilage of cereals, milk, fruits and vegetables:** Spoilage of cereals and cereal products – molding, ropiness. Spoilage of milk and milk products – gas production, proteolysis, ropiness. Spoilage of fresh fruits and vegetables.

**2.3 Spoilage of different food groups:** Spoilage of meat and meat products – aerobic and anaerobic. Spoilage of fish and other sea foods, poultry and eggs. Spoilage of canned products – spoilage by spore forming and non-spore forming bacteria, Spoilage of sugar products.

## MODULE3: MYCOTOXINS AND FERMENTED FOODS (15 Hrs)

**4.1 Mycotoxins:** Mycotoxins Impacting Food Production and Manufacturing- Patulin, Ochratoxin, Zearalenone, Aflatoxins, Trichothecenes and Fumonisins- Guidance and regulations on mycotoxins in food and feed-Mycotoxin Control Strategies- Good agricultural practices (GAPs)/good manufacturing

practices (GMPs).

**4.2 Fermentation**: Definition of fermentation, history of fermented foods, Benefits of fermentation. Acid fermented foods, Yeast fermented foods, Solid state fermentation.

**4.3 Fermented Foods:** Fermented dairy products – yoghurt, cheese fermented milks. Vegetable fermentation – Sauerkraut, cucumber, olives, and pickles. Fermented meals, Fermented beverages - Vinegar, Oriented Foods – soy sauce, tempeh, miso, natto, Indigenous products – idli, dosa, dhokla.

**5. Reference Books:**

1. Food Hygiene and Sanitation – S Roday, Tata McGraw Hill Publishing Co. Ltd.,3rd reprint.
2. Food Poisoning and Food Hygiene – Hobbs B C and R J Gillbert, 4th edition,English Language Book Society and Edward Arnold Publishers Ltd.
3. Food Contamination and Safety – VanishaNambiar.
4. Food Science – B Sri Lakshmi, New Age International Publishers.
5. Foods – Nutrition and Health – Dr.VijayaKhader, Kalyani Publishers.
6. Food Science – Norman H Potter, Joseph H. Hotchkiss, 5th edition, CBS Publishers& Distributors, New Delhi.
7. Text Book of Human Nutrition – Mahtab S Bamji, N PrahladRao, Vinodini Reddy, 2nd edition, Oxford & IBH Publishing Co. Pvt Ltd.
8. Food Science – Sumati R. Mudambi, Shalini M. Rao, M V Rajagopal, Revised 2nd edition, New Age International Ltd. Publishers.
9. Catering Management – An Integrated Approach – MohiniSethi, SurjeetMalhan, 2nd edition, New Age International Publishers.

## 6. Syllabus Focus

### a) Relevance to Local, Regional, National and Global Development Needs

| Local /Regional/National /Global Development Needs | Relevance |
|---|---|
| Global | This paper will give an understanding of the scope of microbiology, the factors affecting the growth of micro-organisms. This knowledge will enable them, to understand the Preservation techniques. Also gives an understanding of the pathogenic and good bacteria present in the surroundings. |

### b) Components on Skill Development/Entrepreneurship Development/Employability

| SD/ED/EMP | Syllabus Content | Description of Activity |
|---|---|---|
| SD | 1 | The Experiments conducted develops a skill of Preparation of Nutrient medium, staining solutions and identifying the gram staining bacteria and Fungi present in the food samples. |

**7. Pedagogy**

| S. No | Student Centric Methods Adopted | Type / Description of Activity |
|---|---|---|
| 1. | Seminar Presentation | Participative Learning |
| 2. | Quiz | Experiential Learning |
| 3. | Group Discussion | Participative Learning |

**8. Course Assessment Plan**

**a) Weightage of Marks in Continuous Internal Assessments andEnd Semester Examination**

| COs | Continuous Internal Assessments - CIA (40%) | End Semester Examination - (60%) |
|---|---|---|
| CO1 | CIA-1 | End Semester examination |
| CO2 | CIA-1 | |
| C03 | CIA-2 Presentation/Assignment | |
| | CIA-2 Quiz/MCQ/FIB | |

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**b) Model Question Paper- End Semester Exam**

| **SECTION A - INTERNAL CHOICE** | | | **3Q X 12 M = 36 M** | |
|---|---|---|---|---|
| **Question Number** | **Question** | **Question** | **CO** | **BTL** |
| 1 | **Module 1** | Explain the Importance of microbiology in applied areas – medical, soil, milk, air, food, Space and industry. | **CO 1** | **II** |
| 2 | **Module 1** | Classify the different methods of food preservation? Mention any five types. | **CO 1** | **II** |
| 3 | **Module 2** | Classify foods according to spoilage. List out the various Causes of spoilage in different types of foods | **CO 2** | **II** |
| 4 | **Module 2** | Identify the spoilage of –<br>1. Milk<br>2. Meat | **CO 2** | **III** |
| 5 | **Module 3** | Explain fermentation. Mark the history of fermented foods and benefits of fermentation. | **CO 3** | **II &V** |
| 6 | **Module 3** | Elaborate the various types of fermentation. | **CO 3** | **VI** |
| **SECTION B - ANSWER ANY 4 OUT OF 6**<br>(To compulsorily have **ONE** question from **each** module) | | | **4 Q X 6 M = 24 M** | |
| 7 | **Module 1** | What are the Extrinsic factors affecting Microbial growth. | **CO 1** | **I** |
| 8 | **Module 1** | What are the Intrinsic factors affecting Microbial growth. | **CO 1** | **I** |
| 9 | **Module 2** | Identify the Spoilage of Cereals and Sugars | **CO 2** | **III** |
| 10 | **Module 2** | Analyze Spoilage of Seafoods & poultry | **CO 2** | **IV** |
| 11 | **Module 3** | Define Mycotoxins | **CO 3** | **I** |
| 12 | **Module 3** | List the Fermented dairy products | **CO 3** | **IV** |

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## SEMESTER-IV
## FOOD MICROBIOLOGY

## PRACTICAL

**Programme: M. Sc**
**Course Code: P24/NUT/DSC /402/P**
**Course Type: DSC-12**
**No .of Credits : 2**

**Max.Hours: 30**
**Hours per week: 4**
**Max.Marks: 50**

### COURSE OBJECTIVES:

1. To familiarize students with the sterilization techniques.

### COURSE OUTCOMES

- To learn to prepare medium for Microbial growth
- To learn different staining techniques

**Practical Sessions**

1. Sterilization techniques:
   a) Dry Heat
   b) Moist Heat
   c) Autoclaving

2. Methods of media preparation and solution

   a. Nutrient agar
   b. Potato Dextrose Agar
   c. Nutrient Broth
   d. Preparation of staining solution

3. Inoculation techniques

4. Preparation of bacterial staining – simple, gram

5. Preparation of Fungal staining

6. Motility of microorganisms by hanging drop technique

7. Methylene Blue Reduction Test for viable bacterial count in milk.

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# FOOD MICROBIOLOGY
## MODEL QUESTION PAPER
## PRACTICAL

**Course Code: P20/NUT/DSC/402/P**
**No. of credits : 2**

**Time :3 HOURS**
**Max marks: 50M**

**Answer the following**

1. Write the procedure for preparing Potato Dextrose Agar, prepare and display. **25 M**
2. Prepare and display on a slide bacterial staining **20 M**
3. Record **5M**

| Prepared by | Checked &Verified by | Approved by |
|---|---|---|
| Nandini<br>Ms. V. Durga Nandini<br>Signature of Faculty | Ms. Tabitha Ramona<br>Signature of Head | Dr. Uma Joseph<br>Signature of Principal |

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**DEPARTMENT OF NUTRITION**

| | | |
|---|---|---|
| **DSE- 5** | **FOOD SERVICE MANAGEMENT** | |
| | **SEMESTER- IV** | **45 HRS** |

**Module –1 Management of Food Service Establishments**

**Module –2 organization of Space and Equipment in Food Services Establishment**

**Module –3 Food Management**

- The syllabus contains three Modules.
- Paper should give equal weightage to all Modules.
- Three long question- One question per module with internal choice

## SEMESTER - IV

## FOOD SERVICE MANAGEMENT

**1. Course Description**

**Programme: M.Sc.**
**Course Code: P24/NUT/DSE/401**
**Course Type: DSE- 5**
**No. of credits: 3**

**Max. Hours: 45**
**Hours per week: 3**
**Max. Marks: 50**

**2. Course Objectives**

- To gain knowledge on requirements and management of various food service establishments.
- To gain knowledge on requirements and management of various food service establishments.

**3. Course Outcomes**

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

CO1: Gain in-depth knowledge of food service industries and understand basic managerial skills.

CO2: Explain the organization of different spaces in a food establishment.

CO3: Defining the different types of food service styles and implement the skills in menu planning for the food service modules.

**4. Course Content**

## MODULE 1: MANAGEMENT OF FOOD SERVICE ESTABLISHMENTS : (15 Hrs)

**1.1Function of management:** Managing, Planning, Organizing, Directing, Coordinating, Controlling and Evaluating. Tools of management – Tangible, Intangible tools.

**1.2 Management of resources:** Natural environment, Work environment. Catering Management – Principles of Management (basic guidelines), Principles of Management

**1.3 Type of food service establishment:** Commercial, Non Commercial, Street – mobile food unit Temporary food service establishment, vending machine, food court, High risk food

## MODULE II: ORGANIZATION OF SPACE AND EQUIPMENT IN FOOD SERVICES ESTABLISHMENT : (15 Hrs)

**2.1 Kitchen Space:** Size and types, developing kitchen plan, Work simplification, features to be considered in kitchen designing.

**2.2 Storage Space:** Types of storage, Factors to be considered while planning storage spaces. Service Area – Location, Structural designing and planning storage spaces

**2.3 Equipment:** Classification of equipment, Selection of equipment, Designing, installation and operation, Purchasing equipment, Care and maintenance of equipment.

**Financial management:** Component of cost, Behaviour of cost, Concept of contribution and break even. **Cost control:** Importance of cost control.

## MODULE III: FOOD MANAGEMENT (15 Hrs)

**3.1 Introduction: Characteristics** of food – Types of food, quality of food – quantity, Sensory quality and nutritional quality.

**3.2 Food Purchasing & Storage:** Importance, Types – open market, formal, negotiated and wholesale, Receiving and Food storage – Delivery methods , General guidelines for storing perishable and non perishable foods .

**3.3 Menu Planning & Food Service:** Importance of menu planning , Types of menus – A La carte, table d'hote and combination . Food service -Style of service ,Waiter service, self service and vending.

**Standardization of food:**Formulation and standardization of recipes , Steps involved in formulation and standardization of recipes , Significance of food standardization.

## 5. References

1. Catering Management – An Integrated Approach – MohiniSethi, SurjeetMalhan, 2nd edition, New Age International Publishers.
2. Food Hygiene and Sanitation – S Roday, Tata McGraw Hill Publishing Co. Ltd., 3rd reprint.
3. Institutional Food Management –MohiniSethi.
4. Ahmad , Naseem Hotel Management : Food and Food Services Anmol Publications New Delhi, 2006.
5. Food & Beverage - Service and Management by Bobby George (Author), Sandeep Chatterjee (Author).
6. Institutional Food Management by Mohini Sethi .
7. Catering management by Mohini Sethi.
8. Andrews S, Food and Beverage Service: Training Manual, 2nd edition, New Delhi,Tata McGraw Hill,2017.
9. Bessie Brooks West and Levelle Wood MS, Food Service in Institutions ,6th edition, John MacMillan Publishing Co,1988.
10. Fuller J and Thomas S, Modern Restaurant Service, 4th edition, Copp Clark Pitman, 1983
11. Harris N, Meal management ,6th edition, New York,Mac Millan,1984.
12. Kotas R, Accounting in hotel and catering industry, 4th edition Cengage Learning, EMEA,1981.
13. Kotler P and Keller K, Marketing Management ,16th edition, Pearson Education,2022.
14. Roday S, Food Hygiene and Sanitation –Tata McGraw Hill Publishing Co. Ltd., 3rd reprint
15. Walley B H, Production management handbook. 2nd edition Metropolitan Book Co. (P) Ltd, 1995.

**6. Syllabus Focus**

**a) Relevance to Local , Regional , National and Global Development Needs**

| Local /Regional/National /Global Development Needs | Relevance |
|---|---|
| Local | Students learn the various aspects of what are the different types of businesses, entrepreneurship skills and how to set up an own establishment even at a small scale level. They learn concepts of standardization and can begin with some local cuisines. |

**b) Components on Skill Development/Entrepreneurship Development/Employability**

| SD/ED/EMP | Syllabus Content | Description of Activity |
|---|---|---|
| SD | 3 | Construction of different types of menus |

**7. Pedagogy**

| S. No | Student Centric Methods Adopted | Type / Description of Activity |
|---|---|---|
| 1. | Field trip | Experiential learning- visit to a food service unit, understand setting of a food establishment |
| 2. | Seminar presentation , group discussion | Participative Learning |
| 3. | Quiz, MCQ, FIB | Experiential learning |

## 8. Course Assessment Plan

### a) Weightage of Marks in Continuous Internal Assessments and End Semester Examination

| CO | Continuous Internal Assessments CIA - 40% | End Semester Examination- 60% |
|---|---|---|
| CO1 | CIA1-Written Exam | Written Exam |
| CO2 | CIA1-Written Exam | |
| CO3 | CIA2 Skill test – assignment on writing menus -different cuisines<br>CIA2- MCQ/ FIB | |

**b) Model Question Paper - End Semester Exam**

| SECTION A - INTERNAL CHOICE | | | 3Q X 12 M = 36 M | |
|---|---|---|---|---|
| **Question Number** | **Question** | **Question** | **CO** | **BTL** |
| 1 | **Module 1** | Describe in detail the principles and functions of management. | **CO 1** | **I** |
| 2 | **Module 1** | Elaborate on the various types of food service establishments. | **CO 1** | **VI** |
| 3 | **Module 2** | List out the various features to be considered while designing a kitchen plan. | **CO 2** | **IV** |
| 4 | **Module 2** | Mark the different types of equipment that are used in a food service unit. | **CO 2** | **V** |
| 5 | **Module 3** | Elaborate on the types, uses and steps in menu planning. | **CO 3** | **VI** |
| 6 | **Module 3** | What is meant by standardization of recipes? List the steps involved in formulation and standardization of recipes. | **CO 3** | **IV** |
| **SECTION B - ANSWER ANY 4 OUT OF 6** (To compulsorily have **ONE** question from **each** module) | | | **4 Q X 6 M = 24 M** | |
| 7 | **Module 1** | What are the tools of management | **CO 1** | **I** |
| 8 | **Module 1** | What is High risk food | **CO 1** | **I** |
| 9 | **Module 2** | List the types of kitchen | **CO 2** | **IV** |
| 10 | **Module 2** | Plan a storage space for perishable and non-perishable foods | **CO 2** | **III** |
| 11 | **Module 3** | Create food service styles | **CO 3** | **V** |
| 12 | **Module 3** | Show Sample standardized recipe | **CO 3** | **II** |

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## SEMESTER-IV
## FOOD SERVICE MANAGEMENT
## PRACTICAL

**Programme: M.Sc.**
**Course Code: P24/NUT/DSE /401/P**
**Course Type: DSE- 5**
**Credits : 2**

**Max.Hours: 30**
**Hours per week: 4**

**Course Objectives:**

To enable students to:

1. Develop skill in formulating and standardizing new recipes.

**Course outcomes**

- Learn various aspects while setting a table in a food establishment and types of serviettes folding.
- Understand the importance of standardization of various recipes, their costing and planning a good menu for various occasions.

**PRACTICAL SESSIONS**

1. Table setting for an individual cover and arrangement of crockery and cutlery, Napkin foldings
2. Planning a meal for a
   a) packed meal (school canteen)
   b) Restaurant meal
3. Principles of menu planning and planning meals for a Banquet, seven course meal
4. Standardization of any 3 Recipes, Determination of standard serving size. Calculation of Food cost. Calculate the Recipe conversion factor and Yield for the above standardized recipes. Calculation of nutritive value.
5. Preparation of starters (soups and salads)
6. Cereal and pulse cookery ( Vegetable pulao and Rajmah curry)
7. Vegetable cookery ( Vegetable Kurma)
8. Dessert preparation (carrot halwa and rice kheer )
9. Visit to a food service unit, developing a HACCP Plan for an Indian recipe, identify critical control points and corrective measures.

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# FOOD SERVICE MANAGEMENT
## MODEL QUESTION PAPER
## PRACTICAL

**Course Code: P20/NUT/DSC/401/P**
**No. of credits : 2**

**Time :3 HOURS**
**Max marks: 50**

**Answer the following**

1. Write the recipe for a standardized recipe , calculate the food cost and recipe conversion for the recipe . **20 M**
2. Prepare and display the given recipe ( two portions) **20 M**
3. Display the given Napkin fold **5M**
4. Record **5M**

| Prepared by | Checked &verified by | Approved by |
|---|---|---|
| Patricia<br>Ms. Patricia<br>Name and Signature of the teaching faculty | Ms. Tabitha<br>Name and Signature of HoD | Dr. Uma Joseph<br>Name and Signature of Principal |

**ST.FRANCIS DEGREE COLLEGE FOR WOMEN BEGUMPET**

**HYDERABAD-500016**

**(AN AUTONOMOUS COLLEGE OF OSMANIA UNIVERSITY)**

**DEPARTMENT OF NUTRITION**

| | | |
|---|---|---|
| **DSE- 6** | **MATERNAL AND CHILD NUTRITION**<br>**SEMESTER- IV** | **45 HRS** |

**Module –1 Importance of Maternal Nutrition**

**Module –2 lactation and Infancy**

**Module –3 Childhood and Adolescence**

- The syllabus contains three Modules.
- Paper should give equal weightage to all Modules.
- Three long question- One question per module with internal choice

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## SEMESTER –IV
## MATERNAL AND CHILD NUTRITION

**1. Course description**

**Programme: M.Sc.** **Max.Hours : 45**

**Course Code: P24/NUT/DSE/402** **Hours per week: 3**

**Type of course: DSE-6** **Max.Marks: 100**

**No. of credits: 3**

**2. Course Objectives:**

- To enable the students to understand the role of nutrition during pregnancy, lactation and infancy
- Get acquainted with growth and developmental changes from conception till adolescence.

**3. Course Outcomes:**

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

CO 1: Remember the importance of nutrition in a physiological phase of life and the importance of prenatal and postnatal nutrition and understand the effect of sound nutritional status of mother in aiding in production of good quality and quantity of human milk.

CO 2: Understand the importance of an Immunization schedule and nutritional requirements for infants.

CO 3: Remember the Influence of lifestyle on eating pattern during childhood and adolescence.

**4. Course content**

**MODULE– 1: IMPORTANCE OF MATERNAL NUTRITION** **(15 Hrs)**

**1.1 Introduction:** Meaning and objectives of maternal and child health, Main health problems of mother and child in India, Current scenario of maternal and child nutrition in India. Vital statistics related to mother and child.

**1.2 Nutrition during pregnancy:** Nutritional aspects of embryogenesis, Factors affecting the outcome of the pregnancy, Management and importance of antenatal care. Physiological and psychological changes during pregnancy, Importance of prenatal and postnatal nutrition, Complications of pregnancy, Pregnancy and AIDS.

**1.3 Physiology of lactation:** Development of mammary tissues and role of hormones physiology and endocrinology of lactation, Composition of human milk, Lactation amenorrhea and effects of breastfeeding on maternal health, Effect of nutritional status of mother on quantity and quality of breast milk.

**MODULE 2: LACTATION AND INFANCY** **(15 Hrs)**

**2.1 Alternative Feeding methods:** Recent guidelines in infant feeding and complementary feeding, Factors affecting breastfeeding, Breastfeeding in AIDS and Drug abuse, Breastfeeding vs Bottle feeding. Management of lactation- sore nipples, engorged breasts, inverted nipples.

**2.2 Infant physiology:** Growth and development during infancy, Immunization schedule, Nutritional requirements of infants, Food requirements and modification of foods for infants Preterm LBW infants, implications for feeding and management.

**2.3 Weaning**: Weaning and principles in preparing complementary food supplements, Nutritional management in Diarrhoea and Lactose Intolerance, Congenital malformation, Foetal alcohol syndrome Maternal and child malnutrition: etiology and management.

**MODULE3: CHILDHOOD AND ADOLESCENCE** **(15 Hrs)**

**3.1 Children:** Growth and development of children, Growth Chart, Nutritional requirement of Preschool and school going children, Nutritional challenges and nutrition for child with special need, Childhood Obesity.

**3.2 Adolescence:** Nutritional requirement during adolescence, Adolescence pregnancy, weight control, anorexia nervosa, Influence of lifestyle on eating pattern during adolescence

**3.3 Maternal and child health Programs in India:** ANP: Supplementary Feeding Programs Special Nutrition Programs, Balwadi Nutrition Programs, Mid-day Meal Programs, Prophylactic doses (vitamin A and iron), ICDS, The world Breastfeeding Week and the role of BPNI in promotion of breast feeding in India.

**5. Reference Books:**

1 Park, K, (2000): Park's Textbook of preventive and social medicine 18th edition.
2 Modern Nutrition In health & Disease –Eds A Catherine Ross, Benjamin Cabellaro, Robert j. Cousins, Katherine L. Tucker, Thomas R. Zeegler,11th edition, Williams &Wilkins Publication
3 Food Nutrition and Diet Therapy –Kathelene Mahan & Krause, SlviaEscott Stump.
4 Bamji MS, Rao NP & Reddy V.1999.Text book of Human Nutrition. Oxford & IBH
5 Falner F & Tanner JM.1978.Human Growth-Postnatal Growth and Neurobiology. Vol II Plenum press
6 National Nutrition Policy (1993) Dept of WCD, Govt of India

**6. Syllabus Focus**

**a) Relevance to Local, Regional, National and Global Development Needs**

| Local /Regional/National /Global Development Needs | Relevance |
|---|---|
| Global | This paper will give an in depth knowledge of the Physiology of the mother's body during conception and lactation, role of hormones etc. Also explains the immunization schedule, growth, development during childhood, lifestyle factors affecting adolescent nutrition. Thus, the students will be able to plan or modify diets according to the age group. |

**b) Components on Skill Development/Entrepreneurship Development/Employability**

| SD/ED/EMP | Syllabus Content | Description of Activity |
|---|---|---|
| Skill Development | Module 1 | The students will be able to plan diets for Lactating mothers and infants after getting in-depth knowledge on the Physiology of Mammary glands etc. |
| Skill Development | Module 3 | The students will be skilled in checking the growth pattern of children and plan diets for children and adolescents. |

**7. Pedagogy**

| S. No | Student Centric Methods Adopted | Type / Description of Activity |
|---|---|---|
| 1. | Seminar Presentation | Participative Learning |
| 2. | Quiz | Experiential Learning |
| 3. | Group Discussion | Participative Learning |

**8. Course Assessment Plan**

**a) Weightage of Marks in Continuous Internal Assessments and End Semester Examination**

| COs | Continuous Internal Assessments - CIA (40%) | End Semester Examination - (60%) |
|---|---|---|
| CO1 | CIA-1 | End Semester examination |
| CO2 | CIA-1 | |
| C03 | CIA-2 supplementary food preparation | |
| | CIA-2 Skill test (MCQ/quiz) | |

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**b) Model Question Paper- End Semester Exam**

| SECTION A - INTERNAL CHOICE | | | 3Q X 12 M = 36 M | |
|---|---|---|---|---|
| **Question Number** | **Question** | **Question** | **CO** | **BTL** |
| 1 | **Module 1** | What are the main health problems that affect the mother and child health in India? | **CO 1** | **I** |
| 2 | **Module 1** | What are the nutritional aspects that affect embryogenesis, how does it affect the pregnancy outcome? | **CO 1** | **I** |
| 3 | **Module 2** | What are the food requirements and modifications for a preterm baby? | **CO 2** | **I** |
| 4 | **Module 2** | Illustrate the nutritional management for an infant with Diarrhea. | **CO 2** | **II** |
| 5 | **Module 3** | Mark the nutritional requirements for teenage pregnancy. | **CO 3** | **V** |
| 6 | **Module 3** | Identify the government play a crucial role in combating nutritional problems? | **CO 3** | **III** |
| **SECTION B - ANSWER ANY 4 OUT OF 6** (To compulsorily have **ONE** question from **each** module) | | | **4 Q X 6 M = 24 M** | |
| 7 | **Module 1** | Compare the Vital statistics related to mother and child | **CO 1** | **V** |
| 8 | **Module 1** | Describe Antenatal care | **CO 1** | **I** |
| 9 | **Module 2** | Explain Preterm and LBW infants | **CO 2** | **V** |
| 10 | **Module 2** | Identify Fetal alcoholic syndrome | **CO 2** | **III** |
| 11 | **Module 3** | Illustrate Childhood Obesity. | **CO 3** | **II** |
| 12 | **Module 3** | Describe Breast Feeding Week | **CO 3** | **I** |

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## SEMESTER -IV
## MATERNAL AND CHILD NUTRITIONPRACTICAL

**Programme : M.Sc.**

**Course Code: P24/NUT/DSE/402/P**

**Type of course: DSE -6**

**No. of credits : 2**

**Max.Hours : 30**

**Hours per week: 4**

**Max.Marks: 50**

**Course Outcomes:**

**CO 1**:To prepare teaching aids for education pregnant and nursing mothers

**CO2**: To learn to plot growth charts for anthropometric analysis during infancy

**PRACTICAL SESSIONS**

1. Planning and preparation of low-cost supplementary foods.
2. Education of pregnant and lactating mother regarding health, nutrition and postpartum depression.
3. Preparation of snacks based on latogogues.
4. Planning and plotting growth charts.
5. Preparation of teaching aids to educate adolescent and school-going children (Eating disorders)

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## MODEL QUESTION PAPER
## PRACTICAL

**Course Code: P20/NUT/DSE/402/P** **Marks: 50M**

**No. of credits : 2** **Time: 3 Hrs**

**Answer the following**

1. Plan, calculate the nutritive value for a low-cost supplementary food. **20 M**
2. Prepare and display the given low-cost supplementary food **15 M**
3. Prepare a poster/ tree chart to educate the adolescent children. **10 M**
4. Record **5 M**

| Prepared by | Checked &Verified by | Approved by |
|---|---|---|
| Nandini<br>Ms. Nandini<br>Name and Signature of the teaching faculty | Ms. Tabitha Ramona<br>Name and Signature of HoD | Dr. Uma Joseph<br>Name and Signature of Principal |

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## SEMESTER – IV

## PROJECT

**1. Course Description**
**Programme : M.Sc**
**Course Code : P24/NUT/PRJ/401/P**
**Course Type : Project**
**No. of credits : 5**

**Hours per week : 5**
**Max. Marks : 150**

**2. Course Objectives:**

1. To continue the project work initiated in the III Semester and to submit dissertation at the end of Semester IV.

**3. Course Outcomes**

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

Students will be able to plan, design and write a scientific report.

The students will be guided and supervised by a member of the teaching faculty of the concerned department. The dissertation in which the research culminated should reflect the student's own work.

An independent research project work undertaken by student under the guidance of an advisor, can either be a survey or Laboratory oriented research. The research should be submitted at the end of the semester in the form of a thesis. The project work can be undertaken at University departments, affiliated research institutions, quality control laboratories, food industries or other institutions with prior approval.

**PROJECT WORK- REPORT WRITING AND PRESENTATION OF PROJECT SEMINAR**

**Internal Examination:**

In internal examination, 40 marksbased on day-to-day work of the concerned student in terms of experimental designing. Practical performance based on the laboratory work, interpretation of the results obtained and regularity and any other criteria relevant to the study.

Presentation of the work in front of the faculty of the department at least, twice during this project work as follows.

| | |
|---|---|
| (1) Deciding of the project and state of the art presentation | 10M |
| (2) Discussion of the materials and methods and protocols | 10M |
| (3) Presentation of the obtained results | 10M |
| (4)Review of Literature | 10M |

External Examination

(1) 60 marks examination of the dissertation examiners which includes viva-voce conducted by examiners.