# SNDT Women's University, Mumbai

## Bachelor of Science
## (Home Science- Nutrition & Dietetics)

## B.Sc. (H. Sc. - N&D)

*As Per NEP - 2020*

## Syllabus

## (2024-2025)

**Credit structure For Under Graduate Programmes in Humanities, Science and Technology and Interdisciplinary Studies Faculties**
**(2024 May as per GR dated 13/03/2024)**

| | Sem I | Sem II | Sem III | Sem IV | Sem V | Sem VI | Total |
|---|---|---|---|---|---|---|---|
| Subject No 1 (to be treated as Major) | 4 | | 12 | 12 | 8 | 10 | **46** |
| Subject No 2 (A and B), so minor | 2 | 2 | 2 | | 4 | 4 | **14** |
| Subject No 3 | | 4 | | | | | **4** |
| VSC S1 | 2 | | | | 2 | | **4** |
| VSC S2 | | 2 | | | | | **2** |
| VSC S3 | | 2 | | | | | **2** |
| Major (Elective) | | | | | 4 | 4 | **8** |
| OEC | 4 | 4 | 2 | 2 | | | **12** |
| SEC | 2 | 2 | | 2 | | | **6** |
| AEC (English) | 2 | 2 | 2 | 2 | | | **8** |
| AEC (Modern Indian Language) | | | 2 | 2 | | | **4** |
| VEC | 2 | 2 | | | | | **4** |
| CC | 2 | 2 | 2 | 2 | | | **8** |
| IKS (Generic) | 2 | | | | | | **2** |
| IKS (Major-Specific) | | | | | 2 | | **2** |
| FP | | | | | 2 | | **2** |
| OJT | | | | | | 4 | **4** |
| | **22** | **22** | **22** | **22** | **22** | **22** | **132** |

**Terminologies**

| Abbreviation | Full-form | Remarks | Related to Major and Minor Courses |
|---|---|---|---|
| Major (Core) | Main Discipline | | |
| Major (Elective) | Elective Options | | related to the Major Discipline |
| Minor Stream | Other Disciplines (Inter/ Multidisciplinary) not related to the Major | either from the same Faculty or any other faculty | |
| OEC | Open Elective Courses/ Generic | | Not Related to the Major and Minor |
| VSC | Vocational Skill Courses | | Related to the Major and Minor |
| SEC | Skill Enhancement Courses | | Not Related to the Major and Minor |
| AEC | Ability Enhancement Courses | Communication skills, critical reading, academic writing, etc. | Not Related to the Major and Minor |
| VEC | Value Education Courses | Understanding India, Environmental science/education, Digital and technological solutions, Health & Wellness, Yoga education, sports, and fitness | Not Related to the Major and Minor |
| IKS | Indian Knowledge System | I. Generic IKS Course: basic knowledge of the IKS<br>II. II. Subject-Specific IKS Courses: advanced information about the subject: part of the major credit | Subject Specific IKS related to Major |
| OJT | On-Job Training (Internship/Apprenticeship) | corresponding to the Major Subject | Related to the Major |
| FP | Field projects | corresponding to the Major Subject | Related to the Major |
| CC | Co-curricular Courses | Health and Wellness, Yoga education sports, and fitness, Cultural Activities, NSS/NCC and Fine/ Applied/Visual/ Performing Arts | Not Related to the Major and Minor |
| CE | Community Engagement and service | | Not Related to the Major and Minor |
| RP | Research Project | corresponding to the Major Subject | Related to the Major |

**Programme Template:**

| | | |
|---|---|---|
| Programme Degree | | B.Sc. |
| Specialization Major | | Food Science & Nutrition |
| Faculty | | Science & Technology |
| Parenthesis if any minor (Specialization) | | Nutrition and Dietetics |
| Preamble | | The Program lays a strong emphasis on a multidisciplinary, integrated approach that will enable students to build a variety of skills and a broad base of professional knowledge in the areas of food science, nutrition and dietetics. It encourages the development of scientific perspectives and a research attitude in students.<br>The programme trains learners in exploring areas of human physiology, biochemistry, nutrition, and medical nutrition therapy and their relationships. At the end of the programme, learner will be able to work in varied sectors of food and nutrition, dietetics, nutrition education work government, non-government, research or learning organizations. |
| Programme Specific Outcomes (PSOs) | | After completing this programme, Learner will - |
| | 1. | Analyze composition of various foods and their relation to therapeutic conditions. |
| | 2. | Recognize the changes that take place due to food processing. |
| | 3. | Comprehend the fundamentals of human physiology, biochemistry, nutrition, and medical nutrition therapy and their relationships. |
| | 4. | Educate people of all ages, groups and plan healthy diets. |
| | 5. | Design nutrition education material and provide nutrition counseling to healthy and disease conditions. |
| Eligibility Criteria for Programme | | Any woman who has successfully cleared 10+2 with Science/Home Science subjects from the recognized Boards by the Government of India/respective state or have required credits as per the government norms to be able to join undergraduate programme. |
| Intake for affiliated Colleges | | 60 (Batch size for Practical 15) |

**Structure with Course Titles**

**B. Sc (H. Sc. N&D)**

| SN | Courses | Type of Course | Credits | Marks | Int | Ext |
|---|---|---|---|---|---|---|
| | **Semester I** | | | | | |
| 1.1 | Basics of Nutrition and Dietetics- I (Theory) | Major (Core) | 2 | 50 | 50 | 00 |
| 1.2 | | Major (Core) | 2 | 50 | 0 | 50 |
| 1.3 | | Major (Core) | 2 | 50 | 50 | 00 |
| 1.4 | Nutrition for Optimal Health (Theory) | OEC | 4 | 100 | 50 | 50 |
| 1.5 | Basics of Nutrition and Dietetics II (Pr.) | VSC | 2 | 50 | 50 | 0 |
| 1.6 | Applied Science (Pr.) | SEC | 2 | 50 | 50 | 0 |
| 1.7 | English - I | AEC (English) | 2 | 50 | 0 | 50 |
| 1.8 | Inception of India Knowledge System | IKS (Generic) | 2 | 50 | 0 | 50 |
| 1.9 | | VEC | 2 | 50 | 0 | 50 |
| 1.10 | Co-curricular activity | CC | 2 | 50 | 50 | 0 |
| | | | **22** | **550** | **300** | **250** |
| | **Semester II** | | | | | |
| 2.1 | Basics of Nutrition and Dietetics- II (Theory) | Major (Core) | 2 | 50 | 0 | 50 |
| 2.2 | | Major (Core) | 2 | 50 | 50 | 00 |
| 2.3 | | Major (Core) | 2 | 50 | 00 | 50 |
| 2.4 | | VSC S2 | 2 | 50 | 50 | 0 |
| 2.5 | | VSC S3 | 2 | 50 | 50 | 0 |
| 2.6 | Culinary Science OR Nutrition for Optimal Health | OEC | 4 | 100 | 50 | 50 |
| 2.7 | Human Physiology (Pr.) | SEC | 2 | 50 | 50 | 0 |
| 2.8 | English -II | AEC (English) | 2 | 50 | 00 | 50 |
| 2.9 | | VEC | 2 | 50 | 0 | 50 |
| 2.10 | Co-curricular activity | CC | 2 | 50 | 0 | 50 |
| | | | **22** | **550** | **250** | **300** |

**Exit with UG Certificate with 4 extra credits (44 + 4 credits)**

**Course Syllabus**

**Semester I**

**1.1 Major (Core)**

| | |
|---|---|
| **Course Title** | Basics of Nutrition & Dietetics I (Th) |
| **Course Credits** | 2 |
| **Course Outcomes** | After going through the course, learners will be able to |
| | 1. Examine role of Nutrition in human health. |
| | 2. Analyze the importance of balanced diet for health. |
| | 3. Create and modify the meals therapeutically for specific people. |
| **Module 1 (Credit 1) - Introduction to Food & Nutrition** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Analyze the inter relationship of food and nutrition. |
| | 2. Evaluate the functions and deficiencies of macronutrients. |
| **Content Outline** | • **Introduction to Food & Nutrition**<br>-Terms used in Nutrition & Health<br>-Definitions of Food, Nutrition, Health, Diet, Balanced Diet, Malnutrition, Undernutrition, Over nutrition<br>-Functions of food<br>-Relationship between Food and Nutrition<br>• **Classification of Nutrients**<br>-Food Groups<br>-Food Pyramid<br>• **Recommended dietary allowances for Indians**<br>• **Role of Macronutrients (functions, Sources and Deficiency in brief)**<br>- Carbohydreates<br>- Proteins<br>- Fats |
| **Module 2 (Credit 1) - Micronutrients & Water** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Evaluate the functions and deficiencies of micronutrients. |
| | 2. Examine the role and importance of water in human health. |

| | |
|---|---|
| **Content Outline** | • **Role of Micronutrients (Functions, Sources and Deficiency in brief)**<br>- Vitamins (Fatsoluble: A,D, E, K, Water Soluble: B1,B2, B3, B6, ,B9, B12 and C)<br>- Minerals ( Calcium, Phosphorus, Iron, Iodine)<br><br>• **Role of Water**<br>- Functions<br>- Water Balance<br>- Dehydration and Role of ORS |

**Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):**

1. Assignment on function, sources and deficiency symptoms of macro nutrients.
2. Assignment on function, sources and deficiency symptoms of micro nutrients.

**References:**


1. Agarwal, A. and Udipi, S. (2021) Textbook of Hunam Nutrition (2nd ed). Jaypee Brothers Medical Publishers.
2. Joshi ,Shubhangini. A.(2021). Nutrition and Dietetics (5th ed). McGraw Hill.
3. Khanna, K., Gupta, S., Passi,S., Seth,R.,Mahana, R. and Puri,S. (2016) Textbook of Nutrition and Dietetics (2nd ed.). Elite Publishing House.
4. Sharma, Avantina.(2017). Principles Of Therapeutic Nutrition and Dietetics. CBS.
5. Srilaxmi, B. (2023). Dietetics (9th ed.). New Age International Private Limited.
6. Srilaxmi, B. (2023). Nutriton Science (8th ed.). New Age International Private Limited.

**1.4 Open Elective Courses/ Generic (OEC)**

| | |
|---|---|
| **Course Title** | Nutrition for Optimal Health |
| **Course Credits** | 2 |
| **Course Outcomes** | After going through the course, learners will be able to |
| | 1. Comprehend the basic concepts in food, nutrition and health. |
| | 2. Apply the concepts in food, nutrition while choosing safe and nutritious foods. |
| **Module 1 (Credit 1) -** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Predict the relationship between food choices and health outcomes. |
| | 2. Identify safe and nutritious foods. |
| | 3. Analyze Nutrition information as scientific or quackery. |
| **Content Outline** | **Nutrition and Health:**<br>Relationship between food, nutrition and health<br>Nutrition Transition and its effects<br>Functions of food<br>Factors affecting food consumption<br>Nutrition Misinformation and Quackery |
| **Module 2 (Credit 1) -** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. State the definitions and Classify foods into food groups. |
| | 2. Identify HFSS packaged foods using nutrition labels. |
| | 3. Apply my plate concept, food portioning. |

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|---|---|
| **Content Outline** | **Basics of Nutrition:**<br>Definitions: Foods,<br>Diet, Nutrients, Nutrition,<br>Optimum nutrition,<br>Balanced diet, R.D.A.,<br>EAR, TUL, Malnutrition,<br>Undernutrition, Over Nutrition<br>Food Groups<br>My Plate Concept<br>Comprehension of Nutrition labels<br>Food Portioning and Mindful eating |
| **Module 3 (Credit 1) -** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Predict the relationship between food choices and health outcomes. |
| | 2. Identify safe and nutritious foods and classify them in food groups. |
| | 3. Critique popular trends in foods and diets |
| **Content Outline** | Apply my plate concept, food portioning<br>Case studies to discuss food choices and health outcomes<br>Market survey and discussion on packaged foods. |
| **Module 4 (Credit 1) -** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Analyze Nutrition information as scientific or quackery |
| | 2. Identify HFSS packaged foods using nutrition labels |
| | 3. Critique popular trends in foods and diets. |

| Content Outline | **Popular Trends in Foods and Diets: Myths and Facts**<br>Super foods<br>Nutrition and Immunity<br>Gluten-free foods<br>Lactose free foods<br>Alkaline water<br>Pros and Cons: GM Diet, Keto Diet, Mediterranean diet, DASH Diet, Intermittent Fasting Diet, Vegan Diet |
|---|---|

**Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):**

**Module 1 & 2:**

1. Group discussions on the veracity of select nutrition information in public domain (Print/Virtual) through the lens of science backed information.
2. Quiz on definitions and classification of foods.

**Module 3 & 4:**

1. Assignment on use of food labels for identifying safe food.
2. Categorisation of select foods by food groups.
3. Assignment on creating My Plate/Food portioning.
4. Presentations on critiquing select trends in food and diet.
5. Group discussions on Dietary Myths and Facts.

**References:**


1. Agarwal, A. and Udipi, S. (2021) *Textbook of Human Nutrition* (2nd ed). Jaypee Brothers Medical Publishers.
2. Dietary Guideline for Indians, A Manual (2024) NIN, Hyderabad.
3. Indian Food Composition Tables (2017), T. Longvah, R.Ananthan, K.Bhaskarachary, K.Venkaiah, NIN, Hyderabad.
4. Joshi ,Shubhangini. A.(2021). *Nutrition and Dietetics* (5th ed). McGraw Hill.
5. Khanna, K., Gupta, S., Passi,S., Seth,R.,Mahana, R. and Puri,S. (2016) *Textbook of Nutrition and Dietetics* (2nd ed.). Elite Publishing House.
6. Nutrition Requirements for Indians, (2020). A Report of the Expert Group, ICMR-NIN,MoHFW
7. My Plate for the Day (2020), ICMR-NIN
8. Sharma, Avantina.(2017). *Principles Of Therapeutic Nutrition and Dietetics.* CBS.
9. Srilaxmi, B. (2023). *Dietetics* (9th ed.). New Age International Private Limited.
10. Srilaxmi, B. (2023). *Nutriton Science* (8th ed.). New Age International Private Limited.

**1.5 Vocational Skill Courses (VSC)**

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|---|---|
| **Course Title** | Basic Analytical Skills in Applied Science (Pr.) |
| **Course Credits** | 2 |
| **Course Outcomes** | After going through the course, learners will be able to |
| | 1. Perform qualitative test for components of food |
| | 2. Perform quantitative test for components of food and plant pigments |
| **Module 1 (Credit 1) -** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Explore use of basic glass wares and apparatus for Science practical. |
| | 2. Apply principles of surface chemistry.. |
| | 3. Differentiate between various functional groups in a given organic compound |
| | 4. Qualitatively estimate the food sample for carbohydrate and protein. |
| | 5. Quantitatively estimate reducing sugar. |
| **Content Outline** | • Identification/Familiarity of the apparatus for assessment in practical (All experiments) Beaker, glass rod, tripod stand, wire gauze, Bunsen burner, Whatman filter paper, gas jar, capillary tube, pestle and mortar, test tubes, tongs, test tube holder, test tube stand, burette, pipette, conical flask, standard flask, clamp stand, funnel, filter paper.<br>• **Surface Chemistry:**<br>◆ 1 Preparation of one lyophilic and one lyophobic sol - starch, egg albumin and gum 2 Preparation of one lyophobic sol– Ferric hydroxide<br>◆ Tests for the functional groups present in organic compounds: (1) Alcoholic and Carboxylic groups. (2) Aldehydic and Ketonic |
| | ◆ Qualitative tests of carbohydrates and proteins in the given foodstuffs.<br>◆ Estimation of reducing sugars by Willstatter's Iodometric method |
| **Module 2 (Credit 1) -** | |
| **Learning Outcomes** | After learning the module, learners will be able to, |
| | 1. Employ use of the calorimeter and principle on which it works. |

| | |
|---|---|
| | 2. Use pH meter and its understand principles. |
| | 3. Examine the two phases on which chromatography principle works and separation of various pigments from plant material. |
| **Content Outline** | • Estimation of vitamin C by colorimetry<br>• Estimation of protein using biuret method<br>• pH determination of various organic compounds and foods<br>• Chromatography Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of Rf values (distance values may be provided). |

**Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):**

1. Identification/familiarity with the apparatus in the Laboratory.
2. Continuous Internal Evaluation about activities taken up in the Laboratory.

**References:**


1. AOAC International (2023). *Official Methods of Analysis of AOAC INTERNATIONAL.* 22nd Ed. Oxford University Press Inc.

2. Aparnathi, K. D., Shaikh, A. I., & Patel, S. I. (2020). Qualitative tests for detection of common adulterants in milk. *Director of Research, Anand Agricultural University, Anand-388110.*

3. Nijhawan. R. (2024*). Food Safety and Standards Act, 2006, Rules and Regulations*. 25th Ed. ILBCO.

4. Pearson, D. (1991). Composition and Analysis of Foods. Dairy Products II. In 'Pearson's Composition and Analysis of Foods'. 9th edn.(Ed. RS Kirk, R Sawyer) pp. 530–680.

5. Sharma, B.K. (1999). 8th Ed. Instrumental Methods of Chemical Analysis. Gel Publishing House.

6. Srivastava, A.K and Jain, P.C. (1986). 2nd Ed. Chemical Analysis: An Instrumental Approach. S Chand and Company Ltd.

**1.6 Skill Enhancement Courses (SEC)**

| | |
|---|---|
| **Course Title** | Applied Science Pr |
| **Course Credits** | 2 |
| **Course Outcomes** | After going through the course, learners will be able to |
| | 1. Acquire the basic knowledge of the fundamentals of biological sciences. |
| | 2. Apply the knowledge of the biological processes to nutrition and health. |
| **Module 1 (Credit 1) -** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1.Plan systematic work in the laboratory. |
| | 2. Perform simple chemical procedures |
| **Content Outline** | • **Applied Chemistry**<br>Introduction to chemistry lab & apparatus.<br>1) Neutralization of strong acid with strong base (HCl & NaOH)<br>2) Neutralization of weak base with strong acid ($Na_2CO_3$& $H_2SO_4$)<br>3) Neutralization of weak acid with strong base (Oxalic acid & NaOH)<br>4) Oxidation- reduction reaction (Oxalic acid & $KMnO_4$)<br>5) pH determination of various solutions: acid, base and neutral (two household example for each) Viscosity measurement: water, oil, shampoo by Oswald's viscometer |
| **Module 2 (Credit 1) -** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Examine various micro-organisms. |
| | 2. Employ required skills to study micro-organisms. |
| | 3. Apply knowledge about micro-organisms in everyday life. |

| | |
|---|---|
| **Content Outline** | • **Applied Biology**<br>1) Study and care of microscope<br>2) Observation of motility of bacteria by Hanging drop method (*E.coli* / *Proteus*)<br>3) Observation of bacteria by the simple: monochrome staining method (Hay infusion culture or milk)<br>4) Gram staining of bacteria in buttermilk<br>5) To observe common pathogenic bacteria (any 6 – permanent slides)<br>6) Observation of fungi on different food materials<br>7) To observe common pathogenic protozoa (permanent slides of *Entamoeba histolytica* and *Plasmodium vivax*)<br>8) Study of medicinally important plants<br>9) Study of medicinally important plants (projects) |

**Assignments/Activities towards Comprehensive Continuous Evaluation (CCE) :**

1. Performing experiment in the Laboratory.
2. Maintaining Laboratory Journal.
3. Project on Medicinal Plants.

**References:**


1. Cecie .S and Christine A. (2014). *Biology: Concepts and Application* Edition 9. Brooks/ Cole Publishing Company.
2. Dr. RC Dubey and DK Maheshwari.(2023) *Practical Microbiology* 4th Edition, SChand Publications.
3. Dr. O P. Pandey, D N Bajpai and Dr. S. Giri. (2013). *Practical Chemistry* (revised edition) S chand Publishing.
4. Karen T and William T. (2019). *Basic Chemistry* 5th Edition. Publication- Pearson Education.
5. Malcolm Campbell A and Christopher J P. (2016). *Cell Structure and Functions*, Momentum Press.
6. Pelczar M.J, Chan E.C.S. Krieg N.R.(2023). *Microbiology* 5th Edition Tata Mcgraw Hill.

**Semester-II**

**2.1 Major (Core)**

| | |
|---|---|
| **Course Title** | Basics of Nutrition & Dietetics II (Th) |
| **Course Credits** | 2 |
| **Course Outcomes** | After going through the course, learners will be able to |
| | 1. Evaluate the importance of balanced diet in human health. |
| | 2. Examine nutritional concerns and principles of planning for different age groups. |
| **Module 1 (Credit 1) - Life cycle & Diet** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Analyze physiological changes, special needs and health concerns of people at different stages of life. |
| | 2. Evaluate the role of modified diets in specific conditions. |
| **Content Outline** | • Balanced Diet<br>• Diet during the Normal Life Cycle<br>• Infancy to Adolescents<br>• Pregnancy and Lactation<br>• Adult and Geriatric<br>• Introduction to Diet Therapy<br>• Modification of normal diet to therapeutic diet<br>• Routine Hospital Diets<br>• Introduction to pre and post operative diets |
| **Module 2 (Credit 1) - Diet Therapy** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Evaluate the role of diet in health and disease. |
| | 2. Associate physiological changes in the specific diseases and health conditions. |
| **Content Outline** | • Diet Therapy for Infection and Fever<br>• Diet Therapy for Weight Management (Underweight and Overweight)<br>• Diet Therapy for GI disturbance (Diarrhea and Constipation)<br>• Diet Therapy for Anemia |

**Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):**

1. Visiting hospital and evaluating Routine Hospital Diets
2. Assignment on physiological changes in GI disturbances.

**References:**


1. Agarwal, A. and Udipi, S. (2021) Textbook of Hunam Nutrition (2nd ed). Jaypee Brothers Medical Publishers.
2. Joshi ,Shubhangini. A.(2021). Nutrition and Dietetics (5th ed). McGraw Hill.
3. Khanna, K., Gupta, S., Passi,S., Seth,R.,Mahana, R. and Puri,S. (2016) Textbook of Nutrition and Dietetics (2nd ed.). Elite Publishing House.
4. Sharma, Avantina.(2017). Principles Of Therapeutic Nutrition and Dietetics. CBS.
5. Srilaxmi, B. (2023). Dietetics (9th ed.). New Age International Private Limited.
6. Srilaxmi, B. (2023). Nutrition Science (8th ed.). New Age International Private Limited.

**2.6 Open Elective Courses/ Generic (OEC)**

| | |
|---|---|
| **Course Title** | Culinary Science |
| **Course Credits** | 4 |
| **Course Outcomes** | After going through the course, learners will be able to |
| | 1. Examine the nature and composition of food. |
| | 2. Explore role of different ingredients in food preparations. |
| | 3. Create acceptable food products with maximum retention of nutrients. |
| | 4. Develop culinary skills using various methods of cooking. |
| **Module 1 (Credit 1) - Introduction to Culinary Science** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | **1.** Apply basic culinary skills required in the kitchen. |
| | 2. Prepare soups, salads, beverages and starters |
| **Content Outline** | • Terms<br>• Weights and Measures<br>• Cooking Methods<br>• Kitchen equipment, tools<br>• Preliminary preparations<br>• Safety and Hygiene practices in the kitchen<br>• Role of Ingredients and Cooking Methods<br>• Soups<br>• Beverages<br>• Salads<br>• Starters |
| **Module 2 (Credit 1) - Indian Cuisine** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Prepare popular Indian regional dishes. |
| | 2. Demonstrate various traditional cooking methods an recipes. |
| | 3. Develop a better understanding of the various Indian cooking methods. |
| **Content Outline** | • Role of Ingredients and Cooking Methods<br>• Snacks<br>• Rice Preparations<br>• Pulses and Legumes<br>• Indian Breads<br>• Indian Traditional Sweets |

| **Module 3 (Credit 1) - Bakery and Desserts** | |
|---|---|
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Understand methods and techniques used in the preparation of bakery, pastry and confectionary |
| | 2. Describe and demonstrate the basic baking science, principles, ratios and techniques. |
| **Content Outline** | • Role of Ingredients and Cooking Methods<br>• Cakes<br>• Biscuits and Cookies<br>• Tarts and Pies<br>• Buns and Breads<br>• Soufflés, Pudding, Cheesecakes |
| **Module 4 (Credit 1) - International Cuisine** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Assess international cuisines by exploring traditional and indigenous ingredients, flavor components and cooking techniques. |
| | 2. Describe and demonstrate the International cuisine. |
| **Content Outline** | • Role of Ingredients and Cooking Methods<br>• Oriental<br>• Italian<br>• Lebanese<br>• Mexican<br>• Thai |

**Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):**

1. Continuous assessment of practical performed by the student.
2. Review of recipes and project on food ingredients and preparation.

**References:**


1. Arora K. (2008). *Theory of Catering*, Frank Brothers
2. Jeremy MacVeigh, (2008). *International Cuisine Hardcover*, International Culinary Schools at the Art Institutes, Delmar Cengage Learning
3. Margaret, McWilliams (2015). *Food around the world*, Pearson
4. Parvinder S. Bali, (2012). *International Cuisine and Food Production Management* Paperback
5. Patricia Heyman, (2016). *International Cooking: A Culinary Journey* 3rd Edition, Pearson.
6. Singh V., Joshi A. (2019). *Art and Science of Culinary*, Notion Press.
7. Thangam Philip (2010). *Modern Cookery for Teaching & Trade* Vol. I 6th Edition. Orient Longman

**2.7 Skill Enhancement Courses (SEC)**

| | |
|---|---|
| **Course Title** | Human Physiology Pr |
| **Course Credits** | 2 |
| **Course Outcomes** | After going through the course, learners will be able to |
| | 1. Know the basic concepts in human physiology |
| | 2. Understand the association between human physiology and Nutrition |
| | 3.Develop an understanding of the functioning of various systems of the human body |
| | 4. Develop basic skills for first-aid and measuring and interpreting basic body parameters |
| **Module 1 (Credit 1) -** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Understand the human skeleton and enable them to identify various bones in the body |
| | 2. Perform simple clinical tests like estimation of haemoglobin and blood group and blood pressure etc and interpret the reports. |
| **Content Outline** | • Study of human skeleton and identification of bones.<br>• Estimation of haemoglobin and understanding and interpretation of hemogram<br>• Types of blood groups and Estimation of blood groups<br>• Demonstration of peripheral blood smear. Importance of complete blood count.<br>• Measurement of pulse rate and blood pressure and interpretation.<br>• Different apps and instruments<br>• Measurement of blood glucose using glucometer and its interpretation and discussion<br>• Discussion of normal components of urine. Test for abnormal components like sugar, albumin and acetone and discussion on diseases in which they are found. |
| **Module 2 (Credit 1) -** | |
| **Learning Outcomes** | After learning the module, learners will be able to |
| | 1. Administer first aid for common emergency situations. |

| | |
|---|---|
| | 2. Carry out the basic principles of home nursing. |
| **Content Outline** | 1. FIRST AID<br><br>-Definition, aims, qualities of first aider, contents of first aid box.<br><br>-Different types of bandages and bandaging techniques.<br><br>2. WOUNDS<br><br>-Classification, dressing and management of hemorrhage- basic principles and discussion about bleeding from various parts of body.<br><br>3. FRACTURE<br><br>-Types, symptoms, management.<br><br>-Sprain and dislocation<br><br>***First Aid for*** - foreign bodies in eye, ear, nose, skin.<br><br>***First Aid for -*** fainting, burns, heat stroke, asthma, convulsions, electric shock and heart attack.<br><br>***First Aid for -*** common poisoning, dog bite, snake bite, bee-sting and scorpion bite.<br><br>4. BASIC PRINCIPLES OF HOME NURSING-<br><br>-Measuring body temperature, steam inhalation, body sponging, taking care of bed ridden patient and enema.<br><br>-Cardio pulmonary resuscitation |

**Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):**

1. Individual measurement of body temperature, blood pressure, determination of blood group
2. Correlating measurements with health conditions.
3. Practicing first aid processes.

**References:**


1. First Aid, St .John's Ambulance Association
2. Guyton, A.C., Hall J.E. (2020). *Textbook of Medical Physiology*, Prism Books Pvt Ltd., Bangalore.
3. Hutchison (2017). *Clinical Methods: An Integrated Approach to Clinical Practice*, Elsevier.
4. Nitin A J. (2022). 14th ED. *C C Chatterjee's Human Physiology*. CRS Publishers and Distributors PVT LTD.