SNDT Women's University, Mumbai

Bachelor Of Science
Home Science
(Food Science & Nutrition)

B.Sc. In H.Sc. FSN

As Per NEP – 2020

Semester – I & II

Syllabus
(W.E.F. Academic Year 2025-26)

Terminologies

Vertical	Full-form/Definition	Remarks	Related to Major and Minor Courses
Major (Core)	Subject comprising Mandatory and Elective Courses, Major Specific IKS, Vocational Skill Courses, Internship/ Apprenticeship, Field Projects, Research Projects connected to Major	Minimum 50% of total credits corresponding to Three/Four - year UG Degree- Mandatory Courses	Related to the Major
Minor Course	Course from same or different Faculty	Minimum 18-20 Credits to be completed in the first three years of UG Programme	Related to the Minor
OEC	Open Elective Courses/ Generic courses	10-12 credits to be offered in I and/or II year. Faculty-wise baskets of OEC to be prepared	OEC is to be chosen compulsorily from faculty other than that of the Major
VSC	Vocational Skill Courses, including Hands on Training corresponding to the Major and/or Minor Subject	8-10 credits, to be offered in first three years, wherever applicable vocational courses will include skills based on advanced laboratory practical's of Major	Related to the Majoror Minor
SEC	Skill Enhancement Courses	06 credits, to be offered in I and II year, to be selected from the basket of Skill Courses approved by university	Related to the Major or Minor any relevant Skill
AEC	Ability Enhancement Courses	08 credits, to be offered in I and II year, English: 04 Credits to be earned in Sem - I, Modern Indian Language of 04 credits to be offered in II year	NA
VEC	Value Education Courses	Understanding India, Environmental science/education, Digital andtechnological solutions, Health & Wellness, Yoga education, sports, and fitness	NA

IKS	Indian Knowledge System	Generic IKS Course: basicknowledge of the IKS to be offered at First Year level	Major-Specific IKS Courses: advanced information about the major, part of the major credit to be offered at second- or third-year level
OJT	On-Job Training (Internship/Apprenticeship)	Corresponding to the Major Subject	Related to the Major
FP	Field projects	Corresponding to the MajorSubject	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	NA
CE	Community Engagement andservice		Related to Major
RP	Research Project	corresponding to the MajorSubject	Related to Major

Program Template

Programme Degree		B.Sc.
Specialization Major		Food Science & Nutrition
Faculty		Science & Technology
Parenthesis if any minor / Specialization		Food Science & Nutrition
Preamble		This academic programme will enable the students to understand human physiology and human health, basics of nutrition and its relation to health. The learner is empowered to manage food related activities in terms of processing, preservation and product development keeping nutrients and nutritional requirement related aspects.
Programme Specific Outcomes (PSOs)		After completing this programme, Learner will -
	1.	Enlist nutrients and their functions.
	2.	Assess nutritional requirements for different age groups.
	3.	Undertake food processing, preservation and food product development.
	4.	Employ techniques of nutritional assessment.
	5.	Apply skills of food entrepreneurship and food sanitation and hygiene.
Eligibility Criteria for Programme		Any woman who has successfully cleared 10+2 in Home Science/Science subject from the recognized Boards by the Government of India/respective state with required credits as per the government norms to be able to join undergraduate programme.
Intake for Affiliated Colleges		30 (Batch size for Practical = 15 students)

Structure with Course Title

B.Sc. In Home Science- Food Science & Nutrition

SN	Courses	Type of Course	Credits	Marks	Int	Ext
	Semester I					
10030101	Fundamentals of Food Science & Nutrition- I (Theory)	Major (Core)	2	50	50	0
		Major (Core)	2	50	50	0
		Major (Core)	2	50	50	0
10430111	Cuisines of India - I (2+2)	OEC	4	100	50	50
10630101	Fundamentals of Food Science & Nutrition (Pr.)	VSC S1	2	50	50	0
10730101	Basic Analytical Skills in Science (Practical)	SEC	2	50	0	50
10810111	English For Academic Writing- Paper I (For Students of English Medium)	AEC (English) **(Any One)**	2	50	0	50
10810112	English Language and Literature- I (For Students of Non-English medium)					
11051111	Inception of India Knowledge System	IKS (Generic)	2	50	0	50
10952111	Introduction to Indian Constitution	VEC	2	50	0	50
11450121	Basics of National Service Scheme	CC **(Any One)**	2	50	50	0
11450221	National Cadets Corps. (NCC) Studies- I					
11450322	Health and Wellness					
11450421	Performing Arts Exploration					
			22	**550**	**300**	**250**

SN	Courses	Type of Course	Credits	Marks	Int	Ext
	Semester II					
20030111	Fundamentals of Food Science & Nutrition- II (Theory)	Major (Core)	2	50	0	50
		Major (Core)	2	50	0	50
		Major (Core)	2	50	0	50
		VSC S2	2	50	50	0
		VSC S3	2	50	50	0
20430111	Cuisines of India – II (2+2)	OEC	4	100	50	50
20730101	Basic Techniques in Health Assessment (Pr.)	SEC	2	50	50	0
20810111	English For Academic Writing- Paper II (For Students of English Medium)	AEC (English) **(Any One)**	2	50	0	50
20810112	English Language and Literature- II (For Students of Non-English medium)					
20952111	Environment Awareness	VEC	2	50	0	50
21450121	Volunteerism and National Service Scheme	CC **(Any One)**	2	50	50	0
21450221	National Cadets Corps. (NCC) Studies- II					
21450323	Yoga Education					
21450421	Fine Art					
			22	**550**	**250**	**300**

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

Syllabus

Semester I

1.1 Major (Core)

Course Title	**Fundamentals of Food Science & Nutrition- I (Theory)**
Course Credits	2
Course Outcomes	After going through the course, learners will be able to
	1. Describe the composition of different types of foods 2. Explain the changes occurring in various types of foods during food preparation and storage 3. Examine the reasons for desirable and undesirable changes in foods. 4. Apply principles of food science to prevent undesirable changes in foods 5. Plan recipes of highly acceptable organoleptic qualities
Module 1 (Credit 1)	**Principles of Food Science of Plant-Based Foods**
Learning Outcomes	After learning the module, learners will be able to,
	1. Describe the composition of Cereals, Pulses & Legumes Vegetables and Fruits 2. Apply the principles of food science to explain the changes occurring in the food components of plant-based foods and their application in food preparation 3. Describe role of water in food preparation, forms of water in food and types of water

Content Outline	1. **Cereals:** Structure and composition of a cereal grain, Properties of starch – Thickening and Gelatinization, Gel Formation, syneresis, Retrogradation and Lump formation, Dextrinization, Identity of grains, Gluten formation – Factors affecting Gluten formation. 2. **Leavening agents:** Natural and Chemical and their action. 3. **Pulses and legumes**: Composition, anti-nutritional factors, effects, and elimination, soaking, fermentation and germination, 4. **Vegetable and Fruits:** Composition, color pigments and effect of cooking on them. Pectic substances: forms – Pectin, Protopectin, Pectic acid, Pectinic acid. Theory of gel formation, Vegetables gums and their commercial uses. 5. **Water:** Role of water in cookery, Forms of water – Bound and free water. Types: Hard and Soft
Module 2 (Credit 1) -	**Principles of Food Science of Animal-Based Foods**
Learning Outcomes	After learning the module, learners will be able to
	1. Describe the composition of Milk, Egg, Meat, Fish, Poul 2. Apply the principles of food science to explain the changes occurring in the food components of foods of animal origin and their application in food preparation 3. Describe the type of fats in foods and role of fat in food preparation.

Content Outline	1. **Milk:** Composition, effect of heat, acid, alkali and enzymes on milk, scum formation, maillard reaction 2. **Egg:** Structure and composition of egg, protein in egg White and Egg Yolk, Methods to judge Egg quality (grading) Physical and chemical changes during egg storage, foams**, r**ole of egg in Cookery, methods of cooking egg. 3. **Meat, Fish and Poultry:** Composition, Structure, post mortem changes, ripening or ageing of meat, tenderization of meat, changes during meat cooking. 4. **Fish**: Classification, quality indicators of fish, types of fish spoilage, gelatin, and Fish Protein Concentrate (FPC). 5. **Fats and Oils:** Physical properties – plasticity, smoke point, flash point, Functional role of fats. Fat Spoilage – rancidity, its types and its prevention. Antioxidants flavor reversion. Fat absorption and factors affecting it. 6. **Sugars-** Types of Sugars, Stages of Sugar cookery and Physical Properties-crystalline, amorphous

Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):

1. Market Survey and discussion on types of Minimally processed cereal, Pulses/Legumes and Vegetable.
2. Market Survey and discussion on Types of Milk, Milk products, types of fats and sugar.
3. Discussion of select recipes to identify and principles of food science applied in their preparation.

References:

1. Agrawal A, Udipi S, (2022): Textbook of Human Nutrition (2nd Edition), Jaypee Publishers
2. Bennion, M. Scheule, B.: (2009): Introductory Foods,13th Edition, Prentice Hall Publications
3. Freeland-Graves, J., Peckham, G. C, (1995): Foundations of Food Preparation (6th Edition), Prentice Hall Publishers
4. Manay, S. (2009) Foods Facts, New Age International Pvt Ltd Publishers
5. Potter, N. N., Hotchkiss J. H: (1999), Food Science, 5th Edition, Springer Publications
6. Shadaksharaswamy, M, Manay, S, (2010): Food facts and Principles, 3rd Edition, New Age International PublishersSrilakshmi, B: (2010) Food Science, 5th Edition, New Age International Pvt Ltd Publishers
7. Subbulakshmi, G, Udipi, S. A, Padmini Ghugre (2021): Food processing and Preservation, New Age International Pvt Ltd Publishers, New Delhi.

1.4 Open Elective Courses/ Generic (OEC)

Course Title	**Cuisines Of India – I (Theory and Practical)**
Course Credits	4
Course Outcomes	After going through the course, learners will be able to -
	1. Explore the diversity of cuisines of western and northern parts of India. 2. Explore the different cooking methods employed in cuisines across western and northern parts India 3. Examine preparations made in western and northern regions of India in different seasons and festivals. 4. Compare differences in use of various spices and ingredients in western and northern cuisines of India 5. Prepare various recipes of each type of cuisine and appreciate it's diversity.
Module 1 (Credit 1)	**Western Indian Cuisine**
Learning Outcomes	1. Examine use of various spices and ingredients in making cuisines of Western India. 2. Explore preparations made in different regions, different seasons and festivals in Western India.
Content Outline	1. Maharashtrian Cuisine 2. Gujarati Cuisine: 3. Rajasthani Cuisine 4. Parsi Cuisine
Module 2 (Credit 1)	**North Indian Cuisine**
Learning Outcomes	1. Examine use of various spices and ingredients in making North Indian cuisines. 2. Explore preparations made in different regions, different seasons and festivals in Northern India.
Content Outline	1. Punjabi cuisine 2. Uttar Pradesh cuisine 3. Jammu and Kashmir cuisine 4. Madhya Pradesh cuisine

Module 3 (Credit 1)	**Practical - Western Indian Cuisine**
Learning Outcomes	1. Apply basic culinary skills in making specific dishes. 2. Describe and demonstrate cuisines of Western India.
Content Outline	1. Prepare recipes from Maharashtrian, Gujarati, Rajasthani, Goan and Parsi 2. List popular recipes of different meals and preserves etc. 3. Cook less common 2 less common recipes from each cuisine and enable development of culinary skills.
Module 4 (Credit 1)	**Practical - North Indian Cuisine**
Learning Outcomes	1. Demonstrate various traditional cooking methods and recipes. 2. Develop a better understanding of the various Indian cooking methods.
	4. Punjabi, Uttar Pradesh, Jammu and Kashmir, Madhya Pradesh cuisines 1. recipes. 2. List popular recipes of different meals and preserves etc. 3. Cook less common 2 less common recipes from each cuisine and enable development of culinary skills.

Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):

1. Individual or group projects on food ingredients used in the cuisines of the western and northern parts of India.

2. Laboratory preparation of recipes of cuisines from these regions.

References:

1. Banerji C (2008), 'Eating India: Exploring the Food and Culture of the Land of Spices' Bloomsbury Publications

2. Chitra P, 'Foods of Earth Tastes of Heaven'

3. Cookery Books of Nita Mehta.

4. Cookery Books of Tarla Dalal.

5. Dalal T, 'The complete Gujarati Cook Book'

6. Dubey K, (2022), 'The Indian Cuisine' Published by PHI Learning Pvt.

7. Food Magazines

8. Nambiar, V (2021) 'Indian Food Anthropology and the Eat Right Movement' - Volume 2.

9. Patil V (1992), 'Food Heritage of India: A collection of Unusual Recipes from every corner of India, pp:123-147, Vakil & sons ltd Bombay Print.

10. Philip T (1978), 'Indian Cuisine', published by Ministry of Information and Broadcasting Government of India: 14-15.

11. Shenoy, Jaya, 'Dakshin Bharat'.

1.4 Vocational Skill Courses (VSC)

Course Title	**Fundamentals of Food Science & Nutrition (Practical)**
Course Credits	2
Course Outcomes	After going through the course, learners will be able to
	1. Observe the nature and composition of food ingredients. 2. Apply the relationship of weight and measures of raw foods with cooked portion sizes of basic food items. 3. Apply the concept of standardization of basic recipes (in terms of serving size and portion size) 4. Observe the interplay of food ingredients and changes taking place during food preparation. 5. Identify rich food sources of various nutrients, plan and prepare recipes using rich sources on nutrients to improve dietary nutrient adequacy.
Module 1 (Credit 1)	**Principles of Food Science**
Learning Outcomes	After learning the module, learners will be able to
	1. Observe the changes in sugar and starch in cereals/pulses and vegetables during food Preparation 2. Prepare recipes demonstrating the shortening effect and factors affecting fat absorption 3. Prepare milk products and recipes demonstrating the functional properties of eggs
Content Outline	1. **Sugar and Starch Cookery:** Preparation of sugar syrups for example: one thread, two thread soft ball and crack stage. Stiffness of starch gel and factors affecting it Factors affecting gluten formation i.e. kneading time, types of cereal and flours, effect of amount of fat etc. 2. **Vegetable Cookery:** Changes in color pigments due to heat, acid and alkali 3. **Fat Cookery:** Shortening effect and factors affecting fat absorption. 4. **Milk Cookery:** Paneer, Maillard Reaction 5. **Egg Cookery:** Role of Egg – Boiled egg, omelette, French toast, mayonnaise etc.

Module 2 (Credit 1)	**Practical – Principles of Basic Nutrition**
Learning	After learning the module, learners will be able to
Outcomes	1. Know weights and measures of raw and cooked food items. 2. Apply the principles of basic nutrition to understand the concept of standardization of recipes (serving size, portion size) 3. Identify and select recipes and calculate nutrients in single serving. 4. Apply the principles of nutrition to the optimize nutrient content in the recipe.
Content Outline	1. Weights and measures of cereals, millets, pulses, milk, milk products, eggs, fruits and vegetables. 2. Standardization of basic recipes. **3. Identification, selection and preparation of Recipes for One Serving:** i. Energy: high and low calorie ii. Proteins iii. Vitamin A iv. Vitamin C v. B- complex vitamins vi. Calcium vii. Iron

Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):

1. Project on home-scale preparation of Cream, Curds, Butter, and Ghee
2. Individual assignments on collating pictures of rich sources of various nutrients and planning multi - nutrient recipes to improve nutrient density of commonly consumed recipes.
3. Laboratory practicals on planning and preparation of standardized recipes and evaluating their Nutrient content.

References:

1. Agarwal, A. and Udipi, S. A. (2022), *Textbook of Human Nutrition* (2nd Edition), Jaypee Brothers Medical Publishers (P).
2. Bamji, M.S. (2019), *Textbook of Human Nutrition* (4th Edition)**,** Oxford

3. Bennion, M. Scheule, B.: (2009): Introductory Foods,13th Edition, Prentice Hall Publications

4. Freeland-Graves, J., Peckham, G. C, (1995): Foundations of Food Preparation (6th Edition), Prentice Hall Publishers

5. Joshi, S (2021), *Nutrition and Dietetics* (5th Edition), McGraw Hill.

6. Manay, S. (2009) Foods Facts, New Age International Pvt Ltd Publishers

7. Mudambi, S.R. and Rajgopal, M.V**. (**2020), *Fundamentals of Foods, Nutrition and Diet Therapy,*
    i. New Age International Pvt. Ltd.

8. Potter, N. N., Hotchkiss J. H: (1999), Food Science, 5th Edition, Springer Publications
9. Shadaksharaswamy, M, Manay, S, (2010): Food facts and Principles, 3rd Edition, New Age International PublishersSrilakshmi, B: (2010) Food Science, 5th Edition, New Age International Pvt Ltd Publishers

10. Subbulakshmi, G, Udipi, S. A, Padmini Ghugre (2021): Food processing and Preservation, New Age International Pvt Ltd Publishers, New Delhi.

1.5 Skill Enhancement Courses (SEC)

Course Title	**Basic Analytical Skills in Applied Science (Practical)**
Course Credits	2
Course Outcomes	After going through the course, learners will be able to
	1. Develop skills to work on apparatus in the science laboratory. 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, protein and reducing sugars. 5. Perform quantitative test for components of food and plant pigments
Module 1 (Credit 1)	**Applications of Principles of Basic Chemistry**
Learning Outcomes	After learning the module, learners will be able to
	1. Develop basic skills required for the performance of science practicals. 2. Apply the principles of surface chemistry 3. Perform qualitative and quantitative tests to identify selected components like functional groups, carbohydrates, proteins and reducing sugars
Content Outline	1. 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. 2. Surface Chemistry: i. Preparation of one lyophilic sol - starch, egg albumin and gum ii. Preparation of one lyophobic sol– Ferric hydroxide iii. Tests for the functional groups present in organic compounds: (1) Alcoholic and Carboxylic groups. (2) Aldehydic and Ketonic iv. Qualitative tests of carbohydrates and proteins in the given foodstuffs. Estimation of reducing sugars by Willstatter's Iodometric method

Module 2 (Credit 1)	**Basic principles of colorimetry and chromatography**
Learning Outcomes	After learning the module, learners will be able to
	1. Employ use of the colorimeter 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	1. Estimation of vitamin C by colorimetry 2. Estimation of protein using biuret method 3. pH determination of various organic compounds and foods 4. 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. Laboratory practicals of all the experiments with observation and interpretation of results
2. Small individual and group projects on observation of principles of science in everyday life examples.
3. Small groups assignments on colour pigments in foods.

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 a. 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.

Semester-II

2.1 Major (Core)

Course Title	**Fundamentals of Food Science & Nutrition- II (Theory)**
Course Credits	2
Course Outcomes	After going through the course, learners will be able to
	1. Explore basic nutrition concepts and terminology. 2. Explain six types of nutrients available from food. 3. Apply the concept of serving size and balanced diet. 4. Evaluate the contribution of macronutrients and micronutrients to health. 5. Apply basic nutrition knowledge while making food choices to plan a balanced diet.
Module 1 (Credit 1)	**Introduction to Principles of Basic Nutrition and Macronutrients**
Learning Outcomes	After learning the module, learners will be able to
	1. Describe basic concepts in nutrition and six types of nutrients present in food. 2. Examine the sources and functions, deficiencies and excess consumption of water, and the Macronutrients available from food
Content Outline	1. Definition of Health, Nutrition, Nutrients, Food, Estimated Average Requirements (EAR), Balanced Diet, Recommended Dietary Allowances (RDA), Tolerable Upper Limit (TUL), Malnutrition (Undernutrition, Overnutrition, Optimum nutrition). 2. Introduction to the nutrients present in food, namely, Carbohydrates, Proteins, Fats, Vitamins, Minerals & Water. 3. Sources, Functions, Effects of Deficiencies and Excessive Consumption of - i. Carbohydrates ii. Proteins iii. Fats iv. Water

Module 2 (Credit 1)	**Introduction to Micronutrients – Vitamins and Minerals**
Learning Outcomes	After learning the module, learners will be able to
	1. Describe sources and functions of the Fat-soluble and Water-soluble Vitamins. 2. Apply the principles of nutrition to understand the resulting from deficiencies and excess consumption of vitamins. 3. Describe the sources and functions of the minerals (Macrominerals and Microminerals). 4. Examine the conditions resulting from deficiencies and excess consumption of Macrominerals and Microminerals.
Content Outline	1. Sources, Functions, Effects of Deficiencies and Excessive Consumption of i. Fat-Soluble Vitamins (Vitamins A, D, E & K) ii. Water-Soluble Vitamins (Vitamins B1, B2, B3, B6, B9, B12) 2. Sources, Functions, Effects of Deficiencies and Excessive Consumption of i. Macrominerals (Calcium & Phosphorus) ii. Microminerals (Iron, Iodine, Selenium, Zinc)

Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):

1. Individual or group projects on classifying food items based on their main nutrients

2. Individual or group projects on clinical signs of nutrients deficiencies and toxicities

References:

1. Agarwal, A and Udipi, S. A. (2022). *Textbook of Human Nutrition* (2nd Edition), Jaypee Brothers Medical Publishers (P).

2. Bamji, M.S. (2019), *Textbook of Human Nutrition* (4th Edition)**,** Oxford.

3. Indian Council of Medical Research, Dietary guidelines for Indians (2024), Published by ICMR- National Institute of Nutrition- Hyderabad.

4. Joshi, S (2021), *Nutrition and Dietetics* (5th Edition), McGraw Hill.

5. Mudambi, S.R. and Rajgopal, M.V**. (**2020), *Fundamentals of Foods, Nutrition and Diet Therapy,*
New Age International Pvt. Ltd.

2.6 Open Elective Courses/ Generic (OEC)

Course Title	**Cuisines Of India II**
Course Credits	4
Course Outcomes	After going through the course, learners will be able to -
	1. Explore the diversity of cuisines of Southern and Eastern parts of India. 2. Explore the different cooking methods employed in cuisines across southern and eastern parts India 3. Examine preparations made in southern and eastern regions of India in different seasons and festivals. 4. Compare differences in use of various spices and ingredients in southern and eastern cuisines of India 5. Prepare various recipes of each type of cuisine and appreciate it's diversity.
Module 1 (Credit 1) -	**South Indian Cuisine**
Learning Outcomes	1. Examine use of various spices and ingredients in making cuisines of Southern India. 2. Explore preparations made in different regions, different seasons and festivals in Southern India.
Content Outline	1. Kerala Cuisine 2. Tamil Nadu Cuisine 3. Andhra Pradesh Cuisine 4. Karnataka Cuisine
Module 2 (Credit 1)	**East Indian Cuisine**
Learning Outcomes	1. Examine use of various spices and ingredients in making cuisines of Eastern India. 2. Explore preparations made in different regions, different seasons and festivals in Eastern India.

Content Outline	1. Bengal 2. Assam 3. Orissa
Module 3 (Credit 1)	**Practical - South Indian Cuisine**
Learning Outcomes	1. Apply basic culinary skills in making specific dishes. 2. Describe and demonstrate cuisines of Southern India.
Content Outline	1. Recipes from Kerala, Tamil Nadu, Andhra and Karnataka. 2. List popular recipes of different meals and preserves etc. 3. Cook 2 less-common recipes each and enable development of culinary skills.
Module 4 (Credit 1)	**Practical - East Indian Cuisine**
Learning Outcomes	1. Demonstrate various traditional cooking methods and recipes. 2. Develop a better understanding of the various Indian cooking methods.
	• West Bengal, Assam, Orissa dishes. • List popular dishes of different meals and preserves etc. • Cook less common 2 recipes each and enable to develop culinary skills.

Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):

1. Individual or group projects on food ingredients used in the cuisines of the southern and eastern parts of India.
2. Laboratory preparation of recipes of cuisines from these regions

References:

1. Banerji C (2008), 'Eating India: Exploring the Food and Culture of the Land of Spices'
2. Bloomsbury Publications
3. Chitra P, 'Foods of Earth Tastes of Heaven'
4. Cookery Books of Nita Mehta.
5. Cookery Books of Tarla Dalal.
6. Dalal T, 'The complete Gujarati Cook Book'

7. Dubey K, (2022), 'The Indian Cuisine' Published by PHI Learning Pvt.

8. Food Magazines

9. Nambiar, V (2021) 'Indian Food Anthropology and the Eat Right Movement' - Volume 2.

10. Patil V (1992), 'Food Heritage of India: A collection of Unusual Recipes from every corner of India, pp:123-147, Vakil & sons ltd Bombay Print.

11. Philip T (1978), 'Indian Cuisine', published by Ministry of Information and Broadcasting Government of India: 14-15.

12. Shenoy, Jaya, 'Dakshin Bharat'.

2.7 Skill Enhancement Courses (SEC)

Course Title	**Basic Techniques in Health Assessment (Pr.)**
Course Credits	2
Course Outcomes	After going through the course, learners will be able to
	1. Describe basic terminologies in human anatomy & physiology. 2. Explain the structure & functions of select organ systems of the human body. 3. Apply this knowledge to understand the relationship between anatomical and physiological systems and human health. 4. Apply the principles of basic health assessment techniques to assess basic health status of individuals. 5. Interpret basic health parameters to identify potential deviations from normal healthy state
Module 1 (Credit 1)	**Basics of Anatomy and Physiology**
Learning Outcomes	After learning the module, learners will be able to:
	1. Develop an understanding of the morphology and structure of specific tissues of the human body 2. Describe the anatomical features of specific human tissues 3. Interpret vital physiological parameters of human subjects.
Content Outline	1. Study of axial and appendicle skeleton and skeletal muscle system using models 2. Permanent slides of epithelial, muscular, and connective tissues. 3. Measuring body temperature, implications and Interpretation. 4. Measuring blood pressure, pulse rate, and SPO2 using digital sphygmomanometer and pulse oximeter implications and interpretation
Module 2 (Credit 1)	**Techniques of Basic Health Assessment**
Learning Outcomes	After learning the module, learners will be able to
	1. Determine various blood related parameters. 2. Perform specific hematological tests and interpret the results.

Content Outline	1. Determination, Implications, and interpretation of: i. Hemoglobin content of blood ii. Blood Group iii. Erythrocyte Sedimentation Rate iv. Bleeding and Clotting time v. Interpretation of Complete Blood Count Report 2. Demonstration of First-Aid & CPR

Assignments/Activities towards Comprehensive Continuous Evaluation (CCE):

1. Laboratory practicals to develop basic skills for the measurement of vital health parameters
2. Short group assignments on interpretation of vital health parameters using health reports.
3. Simple case studies on assessing basic health status.

References:

1. Hall, J. E. (2022). *Guyton and hall textbook of medical physiology (*14th ed.). Elsevier
2. Chaudhuri, S. K. (2011). *Concise Medical Physiology.* 6th Revised Ed. New Central Book Agency
3. Sudhakar, H. (2023). *Basics of Medical Physiology*. 5th Edition. Wolters Kluwer
4. Kamath, S. (2023). *API Text Book of Medicine*. 12th Edition. Prithvi Books
5. Chatterjee, C. (2024). *Human Physiology*. 14th Ed. CBS Publishers and Distributers Pvt. Ltd.
6. Waugh, A. (2014). *Ross and Wison Anatomy and Physiology in Health and Illness,* 12th Ed. Churchill Livingstone