

B.Sc., NUTRITION AND DIETETICS

Course Structure with Syllabus

PROGRAMME CODE :3USNUD

2025-2026



**SENGAMALA THAYAR EDUCATIONAL TRUST
WOMEN'S COLLEGE (AUTONOMOUS)**

(Affiliated to Bharathidasan University, Tiruchirappalli)
(Accredited by NAAC)

**Sundarakkottai, Mannargudi-614016,
Thiruvarur(Dt.),Tamil Nadu, India.**

COURSE STRUCTURE



**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'COLLEGE
(AUTONOMOUS)**

(Affiliated to Bharathidasan University, Tiruchirappalli)
Accredited by NAAC-An ISO 9001:2015 Certified Institution
SUNDARAKKOTTAI, MANNARGUDI-614016.
TAMILNADU, INDIA.

B.Sc., NUTRITION AND DIETETICS
CHOICE BASED CREDIT SYSTEM- LEARNING OUTCOME BASED
CURRICULUM FRAME WORK (CBCS-LOCF)
(For the candidates admitted in the academic year 2025-2026)

CHOICE BASED CREDIT SYSTEM

The credit based semester system provides flexibility in designing curriculum and assigning credits based on the course content and hours of teaching. The choice based credit system provides a 'cafeteria' type approach in which the students can take courses of their choice, learn at their own pace, undergo additional courses and acquire more than the required credits, and adopt an interdisciplinary approach to learning. Our College has moved to CBCS and implemented the grading system.

OUTCOME-BASED EDUCATION (OBE)

LEARNING OUTCOME-BASED CURRICULUM FRAMEWORK (LOCF)

The fundamental premise underlying the learning outcomes-based approach to curriculum planning and development is that higher education qualifications are awarded on the basis of demonstrated achievement of outcomes (expressed in terms of knowledge, understanding, skills, attitudes and values) and academic standards expected of graduates of a programme of study. Learning outcomes specify what graduates completing a particular programme of study are expected to know, understand and be able to do at the end of their programme of study. The expected learning outcomes are used as reference points that would help to formulate graduate attributes, qualification descriptors, programme learning outcomes and course learning outcomes which in turn will help in curriculum planning and development, and in the design, delivery and review of academic programmes. They provide general guidance for articulating the essential learnings associated with programmes of study and courses within a programme, maintain national standards and international comparability of learning outcomes and academic standards to ensure global competitiveness, and to facilitate student/graduate mobility and provide higher education institutions an

important point of reference for designing teaching-learning strategies, assessing student learning levels, and periodic review of programmes and academic standards.

Some important aspects of the Outcome Based Education Course: is defined as a theory, practical or theory cum practical subject studied in a semester.

Course Outcomes (COs): are statements that describe significant and essential learning that learners have achieved, and can reliably demonstrate at the end of a course. Generally three or more course outcomes may be specified for each course based on its weightage.

Programme: is defined as the specialization or discipline of a Degree.

Programme Outcomes (POs): Programme outcomes are narrower statements that describe what students are expected to be able to do by the time of graduation. POs are expected to be aligned closely with Graduate Attributes.

Programme Specific Outcomes (PSOs): PSOs are what the students should be able to do at the time of graduation with reference to a specific discipline. **Some important terminologies repeatedly used in LOCF.**

Core Courses (CC) A course, which should compulsorily be studied by a candidate as a core requirement is termed as a Core course. These are the courses which provide basic understanding of their main discipline. In order to maintain a requisite standard certain core courses must be included in an academic program. This helps in providing a universal recognition to the said academic program.

Discipline Specific Elective Courses (DSE) Elective course may be offered by the main discipline/subject of study is referred to as Discipline Specific Elective (DSE). These courses offer the flexibility of selection of options from a pool of courses. These are considered specialized or advanced to that particular programme and provide extensive exposure in the area chosen; these are also more applied in nature.

Generic Elective Courses An elective course chosen generally from an **unrelated discipline/subject**, with an intention to seek exposure is called a Generic Elective. Generic Elective courses are designed for the students of **other disciplines**. Thus, as per the CBCS policy, the students pursuing particular disciplines would have to opt Generic Elective courses offered by other disciplines, as per the basket of courses offered by the college. The scope of the Generic Elective (GE) Courses is positively related to the diversity of disciplines in which programmes are being offered by the college.

Non Major Elective (NME). A student shall choose at least two Non – major Elective Courses (NME) from outside his /her department. Non –Major Elective I – Those who choose Tamil in Part I can choose a non – major elective course offered by other departments. Those who do not choose Tamil in Part I must choose

either a) Basic Tamil if Tamil language was not studied in school level or b) Special Tamil if Tamil language was studied up to 10th & 12th std.

Skill Enhancement Courses (SECs) These courses focus on developing skills or proficiencies in the student, and aim at providing hands-on training. Skill enhancement courses can be opted by the students of any other discipline, but are highly suitable for students pursuing their academic programme. These courses may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge.

Field Study/Industrial Visit/Case Study: It has to be completed during the fifth semester of the degree programme. Credit for this course will be entered in the fifth semester's marks statement.

Internship: Students must complete internship during summer holidays after the fourth semester. They have to submit a report of internship training with the necessary documents and have to appear for a viva-voce examination during fifth semester. Credit for internship will be entered in the fifth semester's mark statement.

Extra Credit Courses: In order to facilitate the students, gaining knowledge/skills by attending online courses MOOC, credits are awarded as extra credits, the extra credit are at three semesters after verifying the course completion certificates. According to the guidelines of UGC, the students are encouraged to avail this option of enriching their knowledge by enrolling themselves in the Massive Open Online Courses (MOOC) provided by various portals such as SWAYAM, NPTEL etc.

Undergraduate Programme:

Programme Pattern: The Under Graduate degree programme consists of **FIVE** vital components. They are as follows:

Part -I : Languages (Tamil / Hindi / French / Sanskrit)

Part-II : General English

Part-III: Core Course (Theory, Practicals, Generic Elective courses, Discipline Specific Elective courses, Compulsory and Optional Allied courses, Project)

Part-IV: Non Major Elective, Foundation Course, Value Education, Environmental studies, Skill Enhancement Courses/ Soft Skills, Internship / field visit / industrial visit/ Case Study), Professional Competency Course

Part –V:

Special Course - Health & Wellness, Extension activity, Gender studies

EXAMINATION

Continuous Internal Assessment (CIA):

UG - Distribution of CIA Marks Passing Minimum: 40 %

Assignment-3	=	30%
Tests-2	=	50%
Seminar	=	10%
Attendance	=	10%

Question Paper Pattern

Part A:

Part A 1 (10X1=10 marks)

One word question/ Fill in/ True or False/ Multiple Choice Questions Two Questions from Each unit

Part A 2 (5X2=10 marks)

Match the following

Short Answers

One question from Each unit

Total Marks – 20

Part B: (5X5=25 marks)

Paragraph Answers

Either/ or type, One Question from each unit

Part C: (10X3=30)

Essay Type Answers

Answer 3 out of 5 Questions

One Question from each unit

Part A: K1 Level

Part B: K2, K3 and K4 Level

Part C: K5 and K6 Level

Knowledge levels for assessment of Outcomes based on Blooms Taxonomy

S. No.	Level	Parameter	Description
1	K1	Knowledge/Remembering	It is the ability to remember the previously learned
2	K2	Comprehension/ Understanding	The learner explains ideas or concepts
3	K3	Application/Applying	The learner uses information in a new way
4	K4	Analysis/Analysing	The learner distinguishes among different parts
5	K5	Evaluation/Evaluating	The learner justifies a stand or decision
6	K6	Synthesis /Creating	The learner creates a new product or point of view

WEIGHTAGE of K – LEVELS IN QUESTION PAPER

(Cognitive Level) K- LEVELS →	Lower Order Thinking			Higher Order Thinking			Total
	K1	K2	K3	K4	K5	K6	
END SEMESTER EXAMINATIONS (ESE)	20	25			30		75
Continuous Internal Assessment (CIA)	20	25			30		75
QUESTION PATTERN FOR END SEMESTER EXAMINATION/Continuous Internal Assessment							
PART							MARKS
PART –A I. (No choice ,One Mark) TWO questions from each unit					10x1 =10) (5x2 =10)		20
II. (No choice ,Two Mark) ONE question from each unit							
PART -B (Either/ or type ,5-Marks) ONE questions from each unit					(5x5 =25)		25
PART -C (3 out of 5) (10 Marks) ONE question from each unit					(3x10 =30)		30
Total							75

BLUE PRINT OF QUESTION PAPER FOR END SEMESTER EXAMINATION								
DURATION: 3. 00 Hours.				Max Mark : 75				
K- LEVELS	K1	K2	K3	K4	K5	K6	Total Marks	
PART								
PART –A (One Mark, No choice) (10x1 =10)	10						10	
(2-Marks, No choice) (5x2=10)	10						10	
PART –B (5- Marks) (Either/or type) (5x5=25)		5	10	10			25	
PART -C (10 Marks) (3 out of 5) (3x10=30)Courses having only K5,K6 levels, K5 level- 3 Questions, K6 level- 2 Questions (One K6 level question is compulsory)					20	10	30	
Total	20	05	10	10	20	10	75	

EVALUATION

GRADING SYSTEM

Once the marks of the CIA and the end-semester examination for each of the courses are available, they will be added and converted as final mark. The marks thus obtained will then be graded as per the scheme provided in Table-1.

Grade Point Average (GPA) will be calculated from the first semester onwards for all semester. From the second semester onwards, the total performance within a semester and the continuous performance starting from the first semester are indicated by semester Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA), respectively. These two are calculated by the following formulae:

$\text{GPA} = \frac{\sum_{i=1}^n C_i G_i}{\sum_{i=1}^n C_i}$	$\text{WAM (Weighted Average Marks)} = \frac{\sum_{i=1}^n C_i M_i}{\sum_{i=1}^n C_i}$
Where, C _i is the Credit earned for the Course i G _i is the Grade Point obtained by the student for the Course i M _i is the marks obtained for the course i and n is the number of Courses Passed in that semester.	

CGPA: Average GPA of all the Courses starting from the first semester to the current semester.

CLASSIFICATION OF FINAL RESULTS:

1. For each of the first three parts, there shall be separate classification on the basis of CGPA, as indicated in Table-2.
2. For the purpose of declaring a candidate to have qualified for the Degree of Bachelor of Arts/Science/Commerce/Management as Outstanding/Excellent/Very Good/Good/Above Average/Average, the marks and the corresponding CGPA earned by the candidate in Part-III alone will be the criterion, provided the candidate has secured the prescribed passing minimum in the all the Five parts of the Programme.
3. Grade in Part –IV and Part-V shall be shown separately and it shall not be taken into account for classification.
4. A Pass in PART- V will be mandatory although the marks will not count for the calculation of the CGPA.
5. Absence from an examination shall not be taken an attempt.

Table-1: Grading of the Courses - UG

Marks Range	Grade Point	Corresponding Grade
90 and above	10	O
80 and above and below 90	9	A+
70 and above and below 80	8	A
60 and above and below 70	7	B+
50 and above and below 60	6	B
40 and above and below 50	5	C
Below 40	NA	RA

The candidate's performance in every current semester is indicated by **Semester Grade Point Average (SGPA)** and from the second semester onwards, the continuous performance including previous semester /s is indicated by **Cumulative Grade Point Average (CGPA)**.

Table-3: Final Result

CGPA	Corresponding Grade	Classification of Final Result
9.00 and above	O	Outstanding
8.00 to 8.99	A+	Excellent
7.00 to 7.99	A	Very Good
6.00 to 6.99	B+	Good
5.00 to 5.99	B	Above Average
4.00 to 4.99	C	Average
Below 4.00	RA	Re-appearance

The candidates who have passed in the first appearance and within the prescribed duration of the UG programme are eligible. If the candidate's Grade is O/A+ with more than one attempt, the performance is fixed as "Very Good".

Vision

Providing value based education in Nutritional Sciences, Dietetics and Public Health Nutrition to the ruralwomen students to construct the healthy and blooming society.

Mission

- Mentoring the students by imparting skill based knowledge to suit hospital and hospitality
- Industry requirements and promote a healthy society Conscientise the students on food, nutrition and diet and to develop entrepreneurial skills for self employment

PROGRAMME OUTCOMES FOR B.Sc.,DEGREE PROGRAMMES

PO No.	Programme Outcomes (Upon completion of the B.Sc. Degree Programme, the Undergraduate will be able to)
PO-1	Disciplinary knowledge: Demonstrate comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study in Bachelor of Science.
PO-2	Critical thinking, Problem Solving and Reflective thinking: think critically about the issues and identify, critically analyze and solve problems from the disciplines of concern using appropriate tools and techniques and the knowledge, skills and attitudes acquired and extrapolate the same to real life situations; show critical sensibility to life experiences, with self awareness and reflexivity of both self and society.
PO-3	Analytical & Scientific Reasoning: evaluate the reliability and relevance of evidence; identify logical flaws and holes in the arguments of others; analyze and synthesize data from a variety of sources; draw valid conclusions and support them with evidence and examples and addressing opposing viewpoints; critically evaluate ideas, evidence, and experiences from an open minded and reasoned perspective.
PO-4	Research-related Skills: develop a sense of capability for relevant/appropriate inquiry and asking questions, synthesize, articulate and report results and to recognize and predict cause and effect relationships, define problems, formulate and establish hypothesis, analyze and interpret and draw conclusions from data, execute and report the results of an experiment or investigation.
PO-5	Digital literacy and Effective Communication: use ICT in a variety of learning situations and speak, read, write and listen clearly in person and through electronic media in English and in one or more Indian languages, and make meaning of the world by connecting people, ideas, books, media and technology; efficiently communicate thoughts and ideas in a clear and concise manner.
PO-6	Individual and Team Work: effectively accomplish tasks individually as well as work effectively and respectfully as member or leader with diverse teams, facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interest so for a common cause and work efficiently as a member of a team.
PO-7	Multicultural Competence and Social Interaction: understand the values and beliefs of multiple cultures, global perspectives, engage and interact respectfully with diverse groups and elicit views of others, mediate disagreements and help reach conclusions in group settings.
PO-8	Awareness of Ethical issues, Human values and Gender Issues: embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work and understand the value of relationship between self and the community and aware of the various issues concerning women and society.
PO-9	Awareness of Environment and Sustainability: understand the impacts of technology and business practices in societal and environmental contexts, and sustainable development.
PO-10	Self directed and Lifelong learning: acquire knowledge and skills, including learning "how to learn", that are necessary for participating in learning activities throughout life and to engage in independent and life-long learning in the broadest context of socio-technological changes.

PROGRAMME SPECIFIC OUTCOME (PSO)

PSO No.	Program Specific Outcomes (B.Sc., Nutrition and Dietetics)
PSO1	Placement: To prepare the students who will demonstrate respectful engagement with others' ideas, behaviors, beliefs and apply diverse frames of reference to decisions and Actions
PSO2	Entrepreneur: To create effective entrepreneurs by enhancing their critical thinking, problemsolving, decision making and leadership skill that will facilitate startups and high potential organizations
PSO3	Research and Development: Design and implement HR systems and practices grounded in research that comply with employment laws, leading the organization towards growth and development.
PSO4	Contribution to Business World: To produce employable, ethical and innovative professionals to sustain in the dynamic business world.
PSO5	Contribution to the Society: To contribute to the development of the society by collaborating with stakeholders for mutual benefit



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TAMILNADU, INDIA.

B.Sc., NUTRITION AND DIETETICS COURSE STRUCTURE UNDER CHOICE BASED CREDIT SYSTEM -LEARNINGOUTCOME BASED CURRICULUM FRAMEWORK (CBCS - LOCF)

(For the candidates admitted from the academic year 2025-2026)

ELIGIBILITY: A Pass in 10+2 with Biology and Chemistry as two of the core subjects

Sem	Part	Nature of the Course	Course Code	Title of the Course	Ins. Hours/ Week	Ins. Hours/ Week				Credit	Exam Hours	Marks		Total
						L	T	P	S			CIA	ESE	
I	I	Language Course-I	U25LC101	Pothu Tamil – I Tamil Elakkiya Varalaru-I	6	5	1	-	-	3	3	25	75	100
	II	English Language Course-I	U25ELC101	General English – I	6	5	1	-	-	3	3	25	75	100
	III	Core Course-I	U25ND101	Food Science	5	4	1	-	-	5	3	25	75	100
		Core Practical I	U25ND102P	Food Science (P)	4	-	-	4	-	4	3	25	75	100
		Allied Course-I	U25AND101	Food Chemistry	3	2	1	-	-	2	3	25	75	100
		Allied Practical I	U25AND102P	Food Chemistry (P)	2	-	-	2	-	-	-	-	-	-
	IV	Non Major Elective -I			2	1	1	-	-	2	3	25	75	100
		Foundation Course	U25FCND11	Prospects of Nutrition and Dietetics	2	1	1	-	-	2	3	25	75	100
			TOTAL			30	18	6	6	-	21	-	-	-
II	I	Language Course- II	U25LC202	Pothu Tamil – II Tamil Elakkiya Varalaru-II	6	5	1	-	-	3	3	25	75	100
	II	English Language Course-II	U25ELC202	General English – II	6	5	1	-	-	3	3	25	75	100
	III	Core Course–II	U25ND203	Human Physiology	5	4	1	-	-	5	3	25	75	100
		Core Practical -II	U25ND204P	Human Physiology (P)	4	-	-	4	-	4	3	25	75	100
		Allied Course-II	U25AND203	Food Microbiology	3	2	1	-	-	2	3	25	75	100
		Allied Practical -I	U25AND102P	Food Chemistry (P)	2	-	-	2	-	2	3	25	75	100
	IV	Non Major Elective -II			2	1	1	-	-	2	3	25	75	100
		Skill Enhancement Course-I	U25SEND21	Bakery and Confectionary	2	1	1	-	-	2	3	25	75	100
			TOTAL			30	18	6	6	-	23	-	-	-
III	I	Language Course- III	U25LC303	Pothu Tamil – III Tamilaga Varalarum Panpadum-III	6	5	1	-	-	3	3	25	75	100
	II	English Language Course-III	U25ELC303	General English – III	6	5	1	-	-	3	3	25	75	100
	III	Core Course-III	U25ND305	Human Nutrition	4	3	1		-	4	3	25	75	100
		Core Practical- III	U25ND306P	Human Nutrition (P)	4	-	-	4	-	4	3	25	75	100
		Allied Course-III	U25AND304	Food Preservation and Processing	2	1	1	-	-	2	3	25	75	100
		Allied Practical -II	U25AND305P	Food Preservation and Processing (P)	2	-	-	2	-	--	--	--	--	--
	IV	Skill Enhancement Course –II	U25SEND32	Early Childhood Care	2	1	1	-	-	2	3	25	75	100
		Skill Enhancement Course –III	U25SEND33	Resource Management and Interior Design	2	1	1	-	-	2	3	25	75	100
	V	Special Course	25UGSC	Health & Wellness	2	-	-	2	-	1	-	-	-	-
		TOTAL			30	16	6	8	-	21		-	-	700
IV	I	Language Course - IV	U25LC404	Pothu Tamil-IV Tamilum Ariviyalum-IV	6	5	1	-	-	3	3	25	75	100
	II	English Language Course-IV	U25ELC404	General English-IV	6	5	1	-	-	3	3	25	75	100
		Core Course-IV	U25ND407	Nutrition Through Life Cycle	5	4	1	-	-	5	3	25	75	100

Sem	Part	Nature of the Course	Course Code	Title of the Course	Ins. Hours /Week	Ins. Hours/ Week				Credit	Exam Hours	Marks		Total
						L	T	P	S			CIA	ESE	
	III	Core Practical IV	U25ND408P	Nutrition Through Life Cycle (P)	4	-	-	4	-	4	3	25	75	100
		Allied Course-IV	U25AND406	Nutritional Biochemistry	3	2	1	-	-	2	3	25	75	100
		Allied Practical - II	U25AND305P	Food Preservation and Processing (P)	2	-	-	2	-	2	3	25	75	100
	IV	Skill Enhancement Course–IV	U25SEND44	Textile Science	2	1	1	-	-	2	3	25	75	100
		Skill Enhancement Course –V	U25SEND45	Computer Applications in Home Science	2	1	1	-	-	2	3	25	75	100
				TOTAL		30	18	6	6	-	23	-	-	-
V	III	Core Course-V		Dietetics I	6	5	1	-	-	5	3	25	75	100
		Core Course-VI		Food Service Management	5	4	1	-	-	5	3	25	75	100
		Core Course-VII		Nutritional Assessment	5	4	1	-	-	4	3	25	75	100
		Core Practical - V		Dietetics I (P)	4	-	-	4	-	4	3	25	75	100
		Elective Course–I		Basics in Research Methodology and Computer Applications/ Functional foods for Chronic Disease / Geriatric care	4	3	1	-	-	3	3	25	75	100
		Elective Course–II		Changing Trends in Extension Education / Family and Child Welfare/Family Dynamics	4	3	1	-	-	3	3	25	75	100
	IV	Environmental Studies		Environmental Studies	2	2	-	-	-	2	3	25	75	100
		Internship/ Industrial visit/Field visit		Internship/ Industrial visit/Field visit	-	-	-	-	-	2	-	-	-	-
				TOTAL		30	21	5	4	-	28		-	-
VI	III	Core Course-VIII		Dietetics II	6	5	1	-	-	4	3	25	75	100
		Core Practical - VI		Dietetics II (P)	6	-	-	6	-	4	3	25	75	100
		Core Project		Project with viva- voce/ Group Project	5	-	1	4	-	5	3	25	75	100
		Elective Course-III		Food Product Development/ Food Standard and Quality Control / Entrepreneurship Development	4	3	1	-	-	3	3	25	75	100
		Elective Course-IV		Sports Nutrition/ Clinical Nutrition/ Nutrition in Special Condition	4	3	1	-	-	3	3	25	75	100
	IV	Value Education		Value Education	2	2	-	-	-	2	3	25	75	100
		Professional competency Course		Competitive examinations for Home Science	2	2	-	-	-	2	3	25	75	100
	V	Gender Studies		Gender Studies	1	1	-	-	-	1	3	25	75	100
		Extension activity		Extension activity	-	-	-	-	-	1	-	-	-	-
				TOTAL		30	16	4	10	-	25	-	-	-
GRAND TOTAL					180	107	33	40	-	141	-	-	-	4500
Extra Credit				Value Added Courses (At least One / Year)	-	-	-	-	-	2	-	-	-	-
L-Lecture			T-Tutorial		P-Practical				S-Seminar					

Credit Distribution for B.Sc., Nutrition and Dietetics

S.No	Part	Subject	No. of Courses	Total Credits
1.	I	Language Course	4	12
2.	II	English Language Course	4	12
3.	III	Core Course –Theory	8	37
4.		Core Practical	6	24
5.		Core Project	1	05
6.		Allied Course–Theory	4	08
7.		Allied Course –Practical	2	04
8.		Elective Course	4	12
9.	IV	Non-Major Elective	2	04
10.		Foundation Course	1	02
11.		Skill Enhancement Course	5	10
12.		Internship/ Industrial visit/ Field visit	1	02
13.		Environmental Studies	1	02
14.		Value Education	1	02
15.		Professional competency Course	1	02
16.	V	Special Course	1	01
17.		Gender Studies	1	01
18.		Extension Activity	1	01
Total			48	141

Note:

	CIA	ESE
1 Theory	25	75
2 Practical	25	75
3	Separate passing minimum is prescribed for Internal and External marks	

FOR THEORY

The passing minimum for CIA shall be 40% out of 25 marks [i.e. 10 marks]

The passing minimum for University Examinations shall be 40% out of 75 marks [i.e. 30 marks]

FOR PRACTICAL

The passing minimum for CIA shall be 40% out of 25 marks [i.e. 10 marks]

The passing minimum for University Examinations shall be 40% out of 75 marks [i.e. 30 marks]

NON MAJOR ELECTIVE (NME) OFFERED BY THE DEPARTMENT

Semester	Part	Course	Course Code	Title of the Course
I	IV	NME-I	U25NMEND11	Basics of Nutrition
II		NME-II	U25NMEND22	Food as medicine

SEMESTER-III

**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
(AUTONOMOUS)**



SUNDARAKKOTTAI, MANNARGUDI -614016.

(For the candidate admitted in the academic year 2025-2026)

DEPARTMENT OF NUTRITION AND DIETETICS

B.Sc., NUTRITION AND DIETETICS

Semester III –CC-III Human Nutrition

Ins Hrs. /Week: 4

Course Credit: 4

Course Code: U25ND305

UNIT- I: Nutrition and Recommended Dietary Allowances (12 Hours)

Introduction to Nutrition– Definition -Nutrition, Health, Nutrients, Nutritional status and Malnutrition- Under nutrition, Over nutrition, Imbalance, Specific deficiency. Inter-relationship between health and nutrition. Recommended dietary allowances – Definition, General principles of deriving RDA, Factors affecting Recommended Dietary Allowances, Uses of Recommended Dietary Allowances.

UNIT- II: Carbohydrates, Dietary fibre and Energy (14 Hours)

Classification, Sources, Functions of carbohydrates in the body and Requirements. Dietary fibre- Definition, soluble and insoluble fibres, sources of fibre, Role of fibre in human nutrition.

Units of Energy -Kilocalories, Kilojoules, Conversion of KJ to Kcal, determination of energy value of foods -Bomb calorimeter, Basal metabolism, factors affecting BMR - Determination of energy requirements, Direct and Indirect calorimetry Energy requirements for various types of activities, Energy requirements for different age groups.

UNIT- III: Proteins (12 Hours)

Amino acids - Classification, sources, functions of protein and requirements. Evaluation of Protein quality – Biological assays, Biological Value(BV), Net protein utilization(NPU), Net Dietary protein ratio, Protein Efficiency Ratio(PER), and chemical score. Protein deficiency-Protein Energy Malnutrition- Kwashiorkor and Marasmus – etiology, clinical features, treatment and prevention.

UNIT- IV: Lipids

(08 Hours)

Classification, sources, functions and requirements. Essential fatty acids- deficiency, food sources and functions, dietary lipids and its relation to Cardiovascular diseases.

UNIT- V: Vitamins, Minerals and Water

(14 Hours)

Fat Soluble Vitamins – Vitamin A, D, E and K – Functions, Requirements, Sources and deficiency.

Water soluble vitamins – Thiamine, Riboflavin, Niacin, Ascorbic acid, Folic acid, Vitamin B6 and B12 – Functions, Requirements, Sources and deficiency.

Macro minerals – Calcium, Phosphorus, Magnesium, Sodium and Potassium - Functions, Requirements, Sources, effects of deficiency

Micro Minerals – Iron, Iodine, Copper, Fluorine and Zinc – Functions, Requirements, Sources and effect of deficiency.

Water – Definition, distribution of water, function, requirements, sources, water balance, maintenance of water balance, distribution of electrolytes, maintenance of electrolyte balance.

Total Lecture Hours- 60

COURSE OUTCOME:

The students will be able to,

1. Infer Knowledge on Nutrition, Recommended dietary allowances.
2. Identify the Sources, Requirements and Functions of carbohydrates fiber, energy in the body.
3. Understand the Knowledge on Sources, Requirements, Functions and Evaluation of Protein quality.
4. Predict the Requirements, functions, Essential fatty acids and deficiency.
5. Understand the role of vitamins minerals and water in human body.

TEXT BOOK (S)

1. David A. Bender and Shauna M.C. Cunningham. 2021. Introduction to Nutrition and Metabolism, 6th Edition, CRC Press, New York, ISBN: 9780367190811
2. Jyeshtha. Human Ecology and Family Sciences, 2023. National Council of Educational Research and Training, New Delhi, ISBN: 978-81-7450-972-
3. Keith N. Frayn and Rhys Evans. 2019. Human Metabolism: A Regulatory Perspective, 4th Edition, Wiley-Blackwell, ISBN: 9781119331438.

4. Sunetra Roday. 2024. Food Science and Nutrition, 4th Edition, Oxford University Press, New Delhi, ISBN: 9789354977909.
5. Staci Nix. 2026. Williams' Basic Nutrition and Diet Therapy, 17th Edition, Elsevier, St. Louis, ISBN: 9780443123641.

REFERENCE BOOK (S)

1. Bogert, L.J.V., Briggs, D.H. and Calloway, D.H. Nutrition and Physical Fitness, 2022, W.B. Saunders Co., Philadelphia, London, Toronto.
2. Guthrie, H.A. Introductory Nutrition, Latest Available Reprint Edition, C.V. Mosby Co., St. Louis.
3. Raymond, J.L. and Morrow, K. 2024. Krause and Mahan's Food & the Nutrition Care Process, 16th Edition, Elsevier, St. Louis.
4. Swaminathan. M Principles of Nutrition and Dietetics, 2023. BAPPCO, Bangalore.
5. Wardlaw's Contemporary Nutrition. 2024, 12th Edition, McGraw Hill Education, ISBN: 9781260695489.

1. • E-RESOURCES:

1. <https://www.healthline.com/nutrition/malnutrition>
2. <https://medlineplus.gov/definitions/nutritiondefinitions.html>
3. https://www.youtube.com/watch?v=bCjaT_WtwTUhttps://www.youtube.com/watch?v=2UfjwZAGTl0
4. <https://www.healthline.com/nutrition/micronutrients#types-and-functions>
5. <https://www.uofmhealth.org/health-library/ta3868>

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	3	3	2	3	3	2	1	3	3	3	2	3	3
CO2	3	3	3	3	2	3	3	2	1	3	3	3	2	3	3
CO3	3	3	3	3	2	3	3	2	1	3	3	3	2	3	3
CO4	3	3	3	3	2	3	3	2	1	3	3	3	2	3	3
CO5	3	3	3	3	2	3	3	2	2	3	3	3	2	3	3

S-Strong (3)

M-Medium (2)

L-Low(1)



**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
(AUTONOMOUS)**

SUNDARAKKOTTAI, MANNARGUDI -614016.

(For the candidate admitted in the academic year 2025-2026)

DEPARTMENT OF NUTRITION AND DIETETICS

B.Sc., NUTRITION AND DIETETICS

Semester III –CP-III Human Nutrition (P)

Ins Hrs. /Week: 4

Course Credit: 4

Course Code: U25ND306P

PRACTICALS:

1. Planning and Nutritive value calculation and preparation of macro nutrient rich recipes

Carbohydrate- Starch,

Fibre

Protein

Fat

Fibre

2. Planning, Nutritive value, calculation and preparation of micro nutrient rich recipes

- Vitamins- Vitamin A, Vitamin C, Thiamine, Riboflavin and Niacin

- Minerals- Calcium, Iron, Zinc, Phosphorus, potassium

3. Demonstration of nitrogen estimation

4. Demonstration of fibre estimation

5. Demonstration of total fat estimation

TEXT BOOK (S)

1. Gajalakshmi, R. 2023. Nutrition Science, Latest Edition, CBS Publishers and Distributors Pvt. Ltd., New Delhi.
2. Oser, B.L. Hawk's Physiological Chemistry, Latest Available Reprint Edition, Tata McGraw Hill Publishing Company Ltd., Mumbai.
3. Raghuramulu, N., Madhavan Nair, K. and Kalyanasundaram, S. 2023. A Manual of Laboratory Techniques, National Institute of Nutrition (ICMR), Hyderabad – 500007.
4. Sadasivam, S. and Manickam, A. 2022. Biochemical Methods, 3rd Edition, New Age International Pvt. Ltd., New Delhi.

- Varley, H., Gowenlock, A.H. and Bell, M 2025 Practical Clinical Biochemistry, Latest Available Edition, CBS Publishers and Distributors Pvt. Ltd., New Delhi.

REFERENCE BOOK (S)

- Gopalan, C., Rama Sastri, V.B. and Balasubramanian, S.C. 2024. Nutritive Value of Indian Foods, National Institute of Nutrition (ICMR), Hyderabad.
- Graham Dodgshun and Michel Peters. 2023. Cookery for the Hospitality Industry, Cambridge University Press, New Delhi.
- Kathleen Mahan and Janice L. Raymond. 2024. Krause's Food and the Nutrition Care Process, 16th Edition, Elsevier, Missouri.
- Mahtab S. Bamji, N. Prahlad Rao and Vinodini Reddy. 2023. Textbook of Human Nutrition, Oxford & IBH Publishing Company Pvt. Ltd., New Delhi.
- Thangam E. Philip 2022. Modern Cookery for Teaching and the Trade – Volume I, Orient Blackswan Pvt. Ltd., New Delhi.

E – RESOURCES

- <https://www.edx.org/course/biochemistry-and-molecular-biology>
- <https://onlinelibrary.wiley.com/journal/20421340>
- <https://www.coursera.org/learn/biochemistry>
- <https://www.edx.org/course/biochemistry-and-molecular-biology>

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	3	2	2	2	2	2	1	3	3	3	2	3	3
CO2	3	3	3	2	2	2	2	2	1	3	3	3	2	3	3
CO3	3	3	3	2	2	2	2	2	1	3	3	3	2	3	3
CO4	3	3	3	2	2	2	2	2	1	3	3	3	2	3	3
CO5	3	3	3	2	2	2	2	2	2	3	3	3	2	3	3

S-Strong (3)

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**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
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SUNDARAKKOTTAI, MANNARGUDI -614016.

(For the candidate admitted in the academic year 2025-2026)

DEPARTMENT OF NUTRITION AND DIETETICS

B.Sc., NUTRITION AND DIETETICS

Semester: III–AC-III: Food Preservation and Processing

Ins.Hrs./Week:2

Course Credit: 2

Course Code: U25AND304

UNIT-I: Food Preservation and Processing

(06 Hours)

Definition and scope of food preservation, principles, role of preservation, preservatives and types, shelf life of food products, permitted food preservatives, FPO Specification. Principles of fresh food storage : storage, effect of cold storage and quality – storage of grains – water activity. Spoilage- Types of spoilage ,Factors influencing the spoilage.

UNIT-II: Processing of Cereals and Millets

(06 Hours)

Milling products and byproducts of wheat, rice, corn, barley, oats, sorghum and other millets. Whole wheat atta, blended flour, fortified flour, flaked, puffed and popped cereals, malted cereals, processed foods–bakery products, pasta products and value added products.

UNIT-III: Processing of Milk and Milk Products

(06 Hours)

Milk–Processing of different types of milk, drying of whole and skim milk, cream separation, churning of butter, processing of different types of cheese, Probiotic milk products-yoghurt, dahi., indigenous milk products-khoa,burfi,kalakhand,gulabjamun,rasagola,srikhand,channa,paneer,ghee and lassi.

UNIT- IV: High Temperature Processing and Preservation (06 Hours)

Blanching, pasteurization, sterilization and Ultra High Temperature (UHT) processing, canning, dielectric heating ,microwave heating, baking, roasting and frying. Retort processing of Ready to Eat(RTE) products.

UNIT-V: Low Temperature Processing and Preservations

(06 Hours)

Refrigeration, Freezing and thawing, Food irradiation: Introduction, freezing point and freezing rate, comparison of freezing and thawing process, freezing methods: air freezing, plate freezing, liquid immersion freezing and cryogenic

freezing., freezer selection, advantages and disadvantages of freezing. Freezing curve and changes in food during freezing storage.

Total Lecture Hours-30

COURSE OUTCOME

The students should be able to

1. Integrate knowledge on food preservation and spoilage.
2. Understand the fundamental principles of food processing.
3. Comprehend the role of milk in indigenous milk products.
4. Infer knowledge on high temperature food processing and preservation
5. Exemplify the low temperature foods to range and preservation

TEXT BOOK (S)

1. Avantina Sharma. 2023. Textbook of Food Science and Technology, 4th Edition, CBS Publishers & Distributors Pvt. Ltd., New Delhi, ISBN: 9789390709861.
2. Sivasankar.S 2023 Latest Reprint Edition Food Processing and Preservation, Prentice Hall India Learning Pvt. Ltd., ISBN: 9788120320864.
3. Subbulakshmi, G. and Shobha A. Udupi. 2024. Food Processing and Preservation, New Age International Publishers, New Delhi, ISBN: 9788122412833.
4. Vijaya Khader. 2016 Textbook of Food Science and Technology, Indian Council of Agricultural Research (ICAR), New Delhi.
5. Warris, D.S. 2023. Food Processing and Preservation, 2 Volumes, Latest Edition, ISBN: 9789389688597.

REFERENCE BOOK (S)

1. Devi, M., Goswami, D., Vishwakarma, R. K., 2021. Processing and Value Addition of Fruits and Vegetables. Satish Serial Publishing House.
2. Fellows, P.J. 2022. Food Processing Technology: Principles and Practice, 5th Edition, Woodhead Publishing / Elsevier, Cambridge, ISBN: 9780323856041.
3. John Kingslee. 2024 A Professional Text to Bakery and Confectionery, New Age International (P) Ltd., New Delhi.

4. Neelam Khetarpaul, Raj Bala Grewal and Sudesh Jood. 2026. Bakery Science and Cereal Technology, Daya Publishing House, New Delhi.
5. Rahman, M. S. (Ed.). (2020). Handbook of Food Preservation (3rd Ed.). CRC Press.

E-RESOURCES:

1. <http://labgraos.com.br/manager/uploads/arquivo/cap--26-handbook-of-food-preservation-pdf->
2. <http://www.uop.edu.pk/ocontents/Lecture%20no%202.pdf>
3. https://www.canr.msu.edu/smprv/uploads/files/Safe_Practices_for_Food_Processes_Chpt._3
4. [_Factors_that_Influence_Microbial_Growth.pdf](#)
5. <https://www.medicalnewstoday.com/articles/318630>
6. <https://www.ifst.org/resources/information-statements/food-irradiation>

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	3	3	1	3	3	2	1	3	3	3	3	3	3
CO2	3	3	3	3	1	3	3	2	1	3	3	3	3	3	3
CO3	3	3	3	3	1	3	3	2	1	3	3	3	3	3	3
CO4	3	3	3	3	1	3	3	2	1	3	3	3	3	3	3
CO5	3	3	3	3	2	3	3	-	2	3	3	3	3	3	3
S-Strong (3)					M-Medium (2)					L-Low(1)					

**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
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(For the candidate admitted in the academic year 2025-2026)

DEPARTMENT OF NUTRITION AND DIETETICS

B.Sc., NUTRITION AND DIETETICS

Semester:III –AP-II: Food Preservation and Processing (P)

Ins. Hrs./Week: 2

Course Credit :- Course Code: U25AND305P

CONTENTS

- Stages, preparation and observation of sugar syrup.
- Preparation of Bakery Products – Cakes, Cookies, Breads, Pies, Pastries
- Extrusion Cooking – Preparation of Pastas
- Dehydration and Evaporation – Preparation of Condensed Milk , Vathal, Vadams and Salted Dry Fish
- Fruit and Vegetable Processing; Use of Chemical Additives for Preservation;
- Thermal Processing of Foods – Preparation of Jams, Jellies, Squashes, Pickles, Chutneys, Sauces (Preservation by salt, sugar and oil)
- Emulsions and Emulsifying Agents – Preparation of Mayonnaise and Vinaigrette
- Fermented Foods – Preparation of idlis and curds/ yoghurt
- Frozen Foods – Preparation of Ice Cream & Fruit/ Vegetable Pulp

COURSE OUTCOME:

The students will be able to

1. Describe common food preservation and processing methods
2. Explain the principles behind preservation techniques like drying, freezing, fermentation, and thermal
3. Demonstrate the preparation of preserved foods such as jams, pickles, and fermented products.
4. Compare different food processing techniques and their effect on food quality and shelf life.

5. Prepare and present a variety of processed food products using suitable preservation methods.

TEXT BOOK (S)

1. Desrosier, N.W. and Desrosier, J.N. 2024. The Technology of Food Preservation, 5th Edition, Springer Publications.
2. Potter, N.N. and Hotchkiss, J.H. 2024 . Food Science, 5th Edition, CBS Publishers and Distributors, New Delhi.
3. Rahman, M.S. (Ed.). 2024 . Handbook of Food Preservation, 3rd Edition, CRC Press, Taylor & Francis Group, Boca Raton, ISBN: 9780367377885.
4. Srilakshmi, B. 2024. Food Science, 8th Edition, New Age International Publishers, New Delhi.
5. Subbulakshmi, G. and Udupi, S.A. 2024. Food Processing and Preservation, New Age International Publishers, New Delhi, ISBN: 9788122412833.

REFERENCE BOOK (S)

1. Fellows, P.J. 2022. Food Processing Technology: Principles and Practice, 5th Edition, Woodhead Publishing / Elsevier, Cambridge.
2. Jay, J.M., Loessner, M.J. and Golden, D.A. 2024. Modern Food Microbiology, 8th Edition, Springer Publications.
3. Robertson, G.L. 2024. Food Packaging: Principles and Practice, 3rd Edition, CRC Press, Taylor & Francis Group.
4. Ranganna, S. 2025. Handbook of Analysis and Quality Control for Fruit and Vegetable Products, 2nd Edition, Tata McGraw-Hill Education, New Delhi.
5. Vaclavik, V.A. and Christian, E.W. 2024. Essentials of Food Science, 5th Edition, Springer Publications.

E-RESOURCES

1. <https://youtu.be/DnwC8t8aCAQ>
2. <https://youtu.be/V5pddQG bHKQ>
3. <https://www3.epa.gov/ttn/chief/ap42/ch09/final/c9s09-5.pdf>
4. <https://www.indianhealthyrecipes.com/masala-pasta/>
5. <https://www.allrecipes.com/article/making-mayonnaise/>

**MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME
SPECIFIC OUTCOMES**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	3	3	1	3	3	2	1	3	3	3	3	3	3
CO2	3	3	3	3	1	3	3	2	1	3	3	3	3	3	3
CO3	3	3	3	3	1	3	3	2	1	3	3	3	3	3	3
CO4	3	3	3	3	1	3	3	2	1	3	3	3	3	3	3
CO5	3	3	3	3	2	3	3	-	2	3	3	3	3	3	3

S-Strong (3)

M-Medium (2)

L-Low(1)



**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
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DEPARTMENT OF NUTRITION AND DIETETICS

B.Sc., NUTRITION AND DIETETICS

Semester: III –SEC-II: Early Childhood Care

Ins. Hrs./Week: 2 Course Credit :2 Course Code: U25SEND32

UNIT-I: Concept and Significance of Early Childhood Care (06 Hours)

Definition, principles, importance, significance and objectives of ECC, influence of family, community, heredity and environment on child development, role of parents, caregivers and family in child care, rights of the child and need for holistic development, types of child care services – day care centers, balwadi, anganwadi, mobile crèche and play groups.

UNIT-II: Nutrition and Health in Early Childhood (06 Hours)

Nutrition and growth during early childhood, balanced diet and nutritional requirements for preschool children, Infant and Young Child Feeding (IYCF) practices – breastfeeding, colostrum feeding, complementary feeding and weaning, common childhood illnesses – diarrhoea, respiratory infections and fever; nutritional disorders – protein energy malnutrition, anaemia and vitamin deficiencies; importance of immunization in disease prevention.

**UNIT-III: Growth Monitoring and Developmental Care in Early Childhood
(06 Hours)**

Importance and indicators of growth and development in early childhood , Growth assessment techniques: anthropometric measurements (height, weight, mid-upper arm circumference) and interpretation using growth charts ,developmental domains: physical, cognitive, language, emotional, and social development ,developmental milestones and screening for early detection of delays and disabilities. Role of early stimulation, play and learning environment in child development.

UNIT-IV: Health Care, Immunization and Disease Prevention in Childhood (06 Hours)

Concept and importance of child health care in early childhood , preventive health care- regular health check-ups, growth monitoring and early diagnosis, primary health care services for children. Immunization: concept, importance, types of vaccines and national immunization schedule, role of vaccines in preventing communicable diseases.

UNIT-V: Child Care Services, Policies and Programmes (06 Hours)

Concept, importance and need for child care services and child welfare programmes. Objectives and components of early childhood care and development services, overview of Integrated Child Development Services (ICDS): supplementary nutrition, health check-ups, referral services, preschool education and nutrition & health education .aims, components and beneficiaries, Rajiv Gandhi Crèche Scheme, Rashtriya Bal Swasthya Karyakram (RBSK), POSHAN Abhiyaan, India Newborn Action Plan (INAP), Commitment to International Convention- Education for All (EFA) and National Policy on ECCE (2013); Role and functions of Anganwadi centers.

Total Lecture Hours- 30

COURSE OUTCOME:

The students will be able to

1. Explain the concepts, principles and significance of Early Childhood Care and Education (ECCE).
2. Understand the nutritional requirements, feeding practices and common health problems in early childhood, along with preventive measures.
3. Assess growth and development in children using anthropometric measurements and identify developmental milestones and delays.
4. Analyze the importance of immunization, primary health care, and disease prevention strategies in early childhood.
5. Evaluate child care services and significance of national programs in promoting child welfare and development.

TEXT BOOK(S)

1. Berk, L. E. 2023. Child Development, 10th Edition, Pearson Education.
2. Ghai, O.P., Gupta, P. and Paul, V.K. 2023. Ghai Essential Pediatrics, 10th Edition, CBS Publishers and Distributors Pvt. Ltd., New Delhi.

3. Hurlock, E. B. 2024 Reprint. Child Development, Tata McGraw Hill Education, New Delhi.
4. Park, K. 2025. Park's Textbook of Preventive and Social Medicine, 28th Edition, Banarsidas Bhanot Publishers, Jabalpur.
5. Srilakshmi, B. 2024. Nutrition Science, 8th Edition, New Age International Publishers, New Delhi.

REFERENCE BOOK (S)

1. Berk, L.E. 2023. Exploring Lifespan Development, 5th Edition, Pearson Education.
2. National Institute of Nutrition (ICMR-NIN). 2024. Dietary Guidelines for Indians, Hyderabad.
3. Papalia, D.E. and Feldman, R.D. 2023. Experience Human Development, 14th Edition, McGraw Hill Education.
4. Marlow, D.R. and Redding, B.A. 2024. Textbook of Pediatric Nursing, Elsevier Publications.
5. UNICEF. 2024. Programming Guide on Early Childhood Development, United Nations Children's Fund (UNICEF).

E- RESOURCES

1. <https://www.nin.res.in>
2. <https://www.who.int>
3. <https://www.unicef.org>
4. <https://wcd.nic.in>
5. <https://www.mohfw.gov.in>
6. <https://ncert.nic.inhttps://egyankosh.ac.in>

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4	PSO5
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CO4	3	3	3	3	1	3	3	2	1	3	3	3	3	3	3
CO5	3	3	3	3	2	3	3	-	2	3	3	3	3	3	3

S-Strong (3)

M-Medium (2)

L-Low(1)

SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE

(AUTONOMOUS)



SUNDARAKKOTTAI, MANNARGUDI -614016.

(For the candidate admitted in the academic year 2025-2026)

DEPARTMENT OF NUTRITION AND DIETETICS

B.Sc., NUTRITION AND DIETETICS

Semester: III –SEC-III: Resource Management and Interior Design

Ins. Hrs./Week: 2

Course Credit :2 Course Code :U25SEND33

UNIT-I: Management and Concepts

(06 Hours)

Management – Definition, principles and elements in management process - planning, organizing, controlling, coordinating and motivating. Management Concepts - Goals and Values -relationship to decision-making. Standard of living, decision making, individual and group decisions, resolving conflicts in group decisions.

UNIT– II: Resources and Family Income

(06 Hours)

Resources – Human and non-human resources. Family Income – Definition, Types - money, real and psychic income, HUDCO classification, factors influencing the income of the family, Family finance management-Family Budget – definition, importance of budgeting, steps, factors affecting the budget. Savings – Meaning, objectives, Needs for savings in the family, types of savings schemes.

UNIT III: Basics in Interior Design

(06Hours)

Meaning of interior design and interior decoration, purpose, types, elements and principles of design, concept of colour. Dimensions of colour – hue, value and intensity, colour therapy and psychology of colour systems, harmonies, application of colour harmonies in the interiors and exteriors.

UNIT- IV: Lighting, Accessories and Furnitures

(06 Hours)

Importance of lighting, sources, types. Glare- types, causes and prevention. Accessories-meaning, types,functional and decorative, picture mounting, wall hangings. Styles of furniture – traditional, contemporary and modern design. Furniture for different purpose, furniture materials. Selection and arrangement – Furniture for various rooms, Furniture Dimensions, Care and maintenance.

UNIT -V: Window/ Door Treatments & Flower Arrangements (06 Hours)

Draperies, curtains - different doors and window coverings - selection, use and care of furnishing materials. Flower Arrangement – Importance, materials required, care and maintenance of flowers, vase selection, basic shapes. Styles in flower arrangement dried and pressed flowers and Japanese arrangements – IKEBANA, MORIBANA & SHABANA.

Total Lecture Hours- 30

COURSE OUTCOME

The students should be able to

1. Recognize the importance of wise use of resources to achieve one's goals, & become a good home maker.
2. Gain knowledge in various aspects in home economics.
3. Recognize the effective use of resources and learn skills in using principles elements of art & design.
4. Acquire the ability to conceptualize and design interior spaces for homes, retails, hotels, offices.
5. Gain knowledge how to work as an interior designer, visual merchandiser and interior decorator.

TEXT BOOK(S)

1. Anita T. 2024. Textiles for Apparel and Home Furnishing, Sonali Publications, New Delhi, India.
2. Chaudhari, S.N. 2023. Interior Design, Aavishkar Publishers, Jaipur, India.
3. Kharuna, S. 2024. Fabrics for Fashion and Textile Design, Sonali Publications, New Delhi, India.
4. Neeru Garg and Sushma Gupta. 2023. Textbook of Family Resource Management, 9th Edition, Kalyani Publishers, New Delhi.
5. Sylvia M. Asay and Tami J. Moore. 2024. Family Resource Management, 3rd Edition, Sage Publications.
6. Varghese, M.A. et al. 2024. Home Management, 2nd Edition, New Age International (P) Ltd., Publishers, New Delhi.

REFERENCE BOOK (S)

1. Gary Gordon and Jamco L. Nuckolls. 2023. Interior Lighting for Designers, 3rd Edition, John Wiley & Sons, New York.
2. Nickell, P. and Dorsey, J.M. 2024. Management in Family Living, John Wiley & Sons Inc., New York.
3. Shukul, M. and Gandotra, V. 2023. Home Management and Family Finance, Dominant Publishers, New Delhi.
4. Tamil Nadu State Council for Higher Education. 2024. Interior Design and Decoration, 4th Edition, Prentice Hall Publications.
5. William Hardy and Steve Adams. 2023. The Encyclopaedia of Decorative Styles, New Burlington Books, London.

E – RESOURCES

1. <https://youtu.be/Q25Ig09kK-A>
2. <https://youtu.be/rkDquOipXLA>
3. <https://youtu.be/2YMCQAUnfm4>
4. http://www.hillagric.ac.in/edu/coa/vegetables/lectures/VSF_233_HSc/VSF_233_HSc_Lect_15.pdf
5. https://www.brainkart.com/article/Decision-Making_33511/

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

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CO2	3	3	2	1	3	3	3	1	1	3	3	3	2	3	3
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CO4	3	3	2	1	3	3	3	1	1	3	3	3	2	3	3
CO5	3	3	2	1	3	3	3	2	2	3	3	3	2	3	3
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(AUTONOMOUS)**



SUNDARAKKOTTAI, MANNARGUDI -614016.

(For the candidate admitted in the academic year 2025-2026)

DEPARTMENT OF NUTRITION AND DIETETICS

B.Sc., NUTRITION AND DIETETICS

Semester: III- Special Course- Health and Wellness

Ins. Hrs./Week:2

Course Credit :1

Course Code:25UGSC

1 Introduction to Holistic Well-being

1. Introduce the core components of Health & Well-being namely Physical, mental and emotional well-being
2. Provide worksheets on all the four components individually and explain the interconnectedness to give an overall understanding.

2 Wellness Wheel Exercise (Overall Analysis)

- Guide students to assess their well-being in various life dimensions through exercises on various aspects of wellbeing, and explain the benefits of applying wellness wheel.
- Introduce Tech Tools:
- Explore the use of technology to support well-being.
- Introduce students to apps for meditation, sleep tracking, or healthy recipe inspiration.

3. Breaking Bad Habits (Overall Analysis)

- Open a discussion on bad habits and their harmful effects.
- Provide a worksheet to the students to identify their personal bad habits.
- Discuss the trigger, cause, consequence and solution with examples.

- Guide them to replace the bad habits with good ones through worksheets.

4. Physical Well-being

1. Fitness

Introduce the different types of fitness activities such as basic exercises, cardiovascular exercises, strength training exercises, flexibility exercises, so on and so forth.

(Include theoretical explanations and outdoor activity).

2. Nutrition

Facilitate students to reflect on their eating habits, their body type, and to test their knowledge on nutrition, its sources and the benefits.

3. Yoga & Meditation

Discuss the benefits of Yoga and Meditation for one's overall health.

Demonstrate different yoga postures and their benefits on the body through visuals (pictures or videos)

4. Brain Health

Discuss the importance of brain health for daily life.

Habits that affect brain health (irregular sleep, eating, screen time).

Habits that help for healthy brains (reading, proper sleep, exercises).

Benefits of breathing exercises and meditation for healthy lungs.

5. Healthy Lungs

Discuss the importance of lung health for daily life.

Habits that affect lung health (smoking, lack of exercises).

Benefits of breathing exercises for healthy lungs.

6. Hygiene and Grooming

Discuss the importance of hygienic habits for good oral, vision, hearing and skin health.

Discuss the positive effects of grooming on one's confidence level and professional growth.

Suggested Activities (sample):

Nutrition:

Invite a nutritionist to talk among the students on the importance of nutrition to the body or show similar videos shared by experts on social media. Organize a 'Stove less/fireless cooking competition' for students where they are expected to prepare a nutritious dish and explain the nutritive values in parallel.

5. Emotional Well-being

1. Stress Management

Trigger a conversation or provide self-reflective worksheets to identify the stress factors in daily life and their impact on students' performance.

Introduce different relaxation techniques like deep breathing, progressive muscle relaxation, or guided imagery.

(use audio recordings or visuals to guide them through these techniques).

After practicing the techniques, have them reflect on how these methods can help manage stress in daily life.

2. Importance of saying 'NO'

Explain the students that saying 'NO' is important for their Physical

Explain the students that saying 'NO' is important for their Physical and mental well-being, Academic Performance, Growth and Future, Confidence, Self-respect, Strong and Healthy Relationships, building reputation for self and their family (avoid earning a bad name).

Factors that prevent them from saying 'NO'.

How to practice saying 'NO'.

3. Body Positivity and self-acceptance

Discuss the following with the students.

What is body positivity and self-acceptance?

Why is it important?

Be kind to yourself.

Understand that everyone's unique.

Suggested Activities (Sample):

(Importance of saying 'NO')

Provide worksheets to self-reflect on...

..how they feel when others say 'no' to them

...the situations where they should say 'no'

Challenge students to write a song or rap about the importance of saying no and how to do

it effectively.

Students can perform their creations for the class

6. Social Well-Being

1. Practicing Gratitude

Discuss the importance of practicing gratitude for building relationships with family, friends, relatives, mentors and colleagues.

Discuss how one can show gratitude through words and deeds.

Explain how practicing gratitude can create 'ripple effect

2. Cultivating Kindness and Compassion

Define and differentiate between kindness and compassion.

Explore practices that cultivate these positive emotions

Self-Compassion as the Foundation.

The power of small gestures.

Understanding another's perspective.

The fruits of compassion.

3. Practising Forgiveness

Discuss the concept of forgiveness and its benefits.

Forgiveness: What is it? and What it isn't?

Benefits of forgiveness.

Finding forgiveness practices.

4. Celebrating Differences

Appreciate the value of individual differences and foster inclusivity.

The World: A Tapestry of Differences (cultures, backgrounds, beliefs, abilities, and appearances).

Finding strength in differences (diverse perspectives and experiences lead to better problem-solving and innovation).

Celebrating differences, not ignoring them (respecting and appreciating the unique qualities).

Activities for celebrating differences (share culture, learn about others, embrace new experiences)

5. Digital Detox

Introduce the students to:

The concept of a digital detox and its benefits for social well-being
How to disconnect from devices more often to strengthen real-world connections.

Suggested Activities (sample):

(Practicing Gratitude)

Provide worksheets to choose the right ways to express gratitude. Celebrate 'gratitude day' in the college and encourage the students to honour the house keeping staff in some way to express gratitude for their service.

7. Intellectual Well-being

1. Being a lifelong Learner

Give students an understanding on:

The relevance of intellectual well-being in this 21st century to meet the expectations in personal and professional well-being

The Importance of enhancing problem-solving skills Cultivating habits to enhance the intellectual well-being (using the library extensively, participating in extra-curricular activities, reading newspaper etc.)

2. Digital Literacy

Discuss:

The key aspects of digital literacy and its importance in today's world.

It is more than just liking and sharing on social media.

The four major components of digital literacy (critical thinking, communication, problem- solving, digital citizenship).

Why is digital literacy important?

Boosting one's digital skills.

3. Transfer of Learning

Connections between different subjects How knowledge gained in one area can be applied to others.

Suggested Activities (sample):

Intellectual Well-being.

Provide worksheets to students for teaching them how to boost intellectual

Well-being.

Ask the students to identify a long-standing problem in their locality and come up with a solution and present it in the classroom. Also organize an event like 'Idea Expo' to display the designs, ideas, and suggestions, to motivate the students to improve their intellectual well-being.

8. Environmental Well-being

1. The Importance of initiating a change in the environment.

The session could be around:

Defining Environmental well-being (physical, chemical, biological, social, and psychosocial factors) People's behaviour, crime, pollution, political activities, infra-structure, family situation etc. Suggesting different ways of initiating changes in the environment (taking responsibility, creating Awareness, volunteering, approaching administration).

Suggested Activities (sample):

Providing worksheets to self-reflect on how the environment affects their life, and the ways to initiate a change

Dedicate a bulletin board or wall space (or chart work) in the classroom for students to share their ideas for improving environmental well-being.

Creating a volunteers' club in the college and carrying out monthly activities like campus cleaning, awareness campaigns against noise pollution, (loud speakers in public places), addressing anti-social behaviour on the campus or in their locality

9. Mental Well-being

1. Importance of self-reflection

Discuss:

Steps involved in achieving mental well-being (self-reflection, self-awareness, applying

actions, achieving mental well-being).

Different ways to achieve mental well-being (finding purpose, coping with stress, moral compass, connecting for a common cause).

The role of journaling in mental well-being

2. Mindfulness and Meditation Practices.

Benefits of practicing mindful habits and meditation for overall well-being.

1. Connecting with nature

Practicing to be in the present moment Nature walk, feeling the sun, listening to the natural sounds Exploring with intention Hiking, gardening to observe the nature

Reflecting on the emotions, and feeling kindled by nature.

2. Serving people

Identifying the needs of others

Helping others.

Volunteering your time, skills and listening ear.

Finding joy in giving.

3. Creative Expressions

Indulging in writing poems, stories, music making/listening, creating visual arts to connect with inner selves.

Suggested Activities (Sample):

(Mindfulness and Meditation) Conducting guided meditation every day for 10 minutes and directing the students to record the changes they observe.

10. Situational Awareness (Developing Life skills)

1. Being Street smart

Discuss:

Who are street smart?

Why is it important to be street smart?

Characteristics of a street smart person: Importance of acquiring life skills to become street smart

(General First-aid procedure, CPR Procedure, Handling emergency situations like fire, flood etc).

2. Digital Awareness

Discuss:

Cyber Security

Information Literacy.

Digital Privacy

Fraud Detection

Suggested Activities (sample):

(Street Smart) Inviting professionals to demonstrate the CPR

Procedure

Conducting a quiz on Emergency Numbers

11. Understanding Addiction

Plan this session around:

Identifying the environmental cues, triggers that lead to picking up this habit

Knowing the impact of substance abuse - Adverse health conditions, social isolation, ruined future, hidden financial loss and damaging the family reputation.

Seeking help to get out of this addiction.

Suggested Activities

Provide Worksheets to check the students' level of understanding about substance addiction and their impacts.

Share case studies with students from real-life.

Play/share awareness videos on addiction/de-addiction, experts talk.

*Conduct awareness programmes on Drugs and its ill effects.

(Arrange Experts from the concerned government departments and NGOs working in drug addiction issues) and maintain the documents of the program

COURSE OUTCOME

The students should be able to

1. Understand the core components of holistic well-being and their interconnectedness.
2. Assess overall well-being using the wellness wheel and apply technology tools for improvement.
3. Identify bad habits, their triggers, and replace them with positive habits.
4. Learn various fitness activities, nutrition, and practices to enhance physical well-being.
5. Apply stress management techniques, set boundaries, and foster self-acceptance for emotional well-being.
6. Practice gratitude, kindness, compassion, and embrace social differences for social well-being.
7. Develop lifelong learning skills, digital literacy, and problem-solving abilities.
8. Analyze the environmental well-being and initiate positive changes in the community.

9. Practice self-reflection, mindfulness, and creative expression for mental well-being.
10. Develop situational awareness and life skills for handling emergencies and digital safety.
11. Understand the impact of addiction and develop strategies for overcoming it.

TEXT BOOK(S)

1. Chandra, R.K., 2002, "Human Nutrition: A Health Perspective", 1st edition, Wiley-Blackwell.
2. Gibson, R.S., 2005, "Principles of Nutritional Assessment", 2nd edition, Oxford University Press.
3. ICMR-NIN, 2020, "Dietary Guidelines for Indians", National Institute of Nutrition, Hyderabad.
4. Mudambi, S.R., Rajagopal, M.V., 2012, "Fundamentals of Foods, Nutrition and Diet Therapy", 7th edition, New Age International Publishers.
5. Srilakshmi, B., 2014, "Dietetics", 4th edition, New Age International Publishers.

REFERENCE BOOK(S)

1. Thomas, E., 2020, "Diet and Health: A New Perspective", 3rd edition, Elsevier.
2. Venkatesh, R., 2015, "The Essential Guide to Nutrition and Well-being", 2nd edition, Pearson Education.
3. Ali, M., 2022, "The Role of Nutrition in Physical Health", 1st edition, Elsevier Health Sciences.
4. Ramaswamy, K., 2016, "Holistic Health and Well-being", 1st edition, Tata McGraw-Hill.

5. Gupta, P., 2020, "Holistic Nutrition: A Comprehensive Guide", 1st edition, National Publishing House.

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4. <https://www.eatright.org>
5. <https://ods.od.nih.gov>
6. <https://www.nutrition.gov>
7. <https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating>
8. <https://www.webmd.com/diet>

SEMESTER-IV



**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
(AUTONOMOUS)**

SUNDARAKKOTTAL, MANNARGUDI -614016.

(For the candidate admitted in the academic year 2025-2026)

DEPARTMENT OF NUTRITION AND DIETETICS

B.Sc., NUTRITION AND DIETETICS

Semester: IV–CC-IV: Nutrition Through Life Cycle

Ins.Hrs./Week:5

Course Credit: 5

Course Code: U25ND407

UNIT-I: Meal Planning

(10 Hours)

Principles of meal planning, Recommended Dietary Allowances, Food groups and food exchange list, Factors affecting meal planning and types of eating behavior, Dietary guidelines for Indians.

UNIT-II: Nutrition for Pregnancy and Lactation

(20Hours)

Nutrition during pregnancy, Importance of preconception nutrition, Pre pregnancy weight and foetal outcome. Foetal weight gain. Physiological changes during pregnancy, complications in pregnancy. Intrauterine growth retardation. High risk pregnancies. Importance of antenatal care. Maternal nutrient metabolism and recommended dietary allowances in pregnancy.

Nutrition during lactation- Breast feeding biology, Psycho – physiological aspects of lactation, Recommended Dietary Allowances and nutritional needs of a nursing mother, nutritional guidelines, composition of breast milk and advantages, disadvantages of bottle feeding, Factors affecting lactation capacity, Effect of breast feeding on maternal health.

UNIT-III: Nutrition in infancy

(15 Hours)

Nutrition during Infant – Growth and physiological development. Infant nutritional needs and concerns. Nutrition and brain development. Infant feeding, Weaning – Definition, types of supplementary foods, points to be considered in introducing weaning foods. Nutritional problems in infant feeding. Preterm and Low Birth Weight infants.

UNIT-IV: Nutrition for Preschool Children, School Children and Adolescents

(20 Hours)

Nutrition during preschool children- Growth and development, Nutritional needs and feeding for preschool children. Malnutrition among preschool children.

Nutrition during school children- Growth and development, Nutritional requirements and RDA. Feeding school children, behavioural characteristics and feeding problems. Dietary patterns, packed lunch – factors to be considered, sample menu, school lunch programmes and nutritional problems.

Nutrition during adolescents- Growth during adolescence, nutritional requirements, hormonal influences, age of menarche-factors affecting, physiological problems and nutritional problems in adolescents.

UNIT-V: Nutrition for Adulthood and Nutrition for Old Age (10Hours)

Nutrition for Adulthood-Food and nutritional requirements, dietary guidelines, nutritional problems. Nutrition for old age – Process of ageing, food and nutritional requirement, dietary guidelines, nutrition related problems, physiological and biochemical changes.

Total Lecture Hours-75

COURSE OUTCOME:

The students will be able to

1. Apply the knowledge of the science of nutrition to human health across the lifespan.
2. Understand the physiological basis for nutritional needs of normal healthy humans throughout the life cycle.
3. Understand the importance of maternal nutrition on foetal outcome
4. Assess and compare the diet and nutritional requirements related to diseases.
5. Recognize the composition, quality, and appropriateness of nutrition products and formulate dietary interventions to address nutritional deficiencies.

TEXT BOOK(S)

1. Srilakshmi, B. 2024. Dietetics, 9th Edition, New Age International Publishers, New Delhi.
2. Gibney, M.J., Lanham-New, S.A., Cassidy, A. and Vorster, H.H. 2023 Reprint. Introduction to Human Nutrition, 3rd Edition, Wiley-Blackwell Publications.

3. Longvah, T. et al. 2024 Reprint. Indian Food Composition Tables, National Institute of Nutrition (ICMR-NIN), Hyderabad.
4. Mudambi, S.R. and Rajagopal, M.V. 2023 Reprint. Fundamentals of Foods, Nutrition and Diet Therapy, 6th Edition, New Age International Publishers, New Delhi.
5. Rolfes, S.R., Pinna, K. and Whitney, E. 2025. Understanding Normal and Clinical Nutrition, 17th Edition, Cengage Learning.

REFERENCE BOOK (S)

1. Gopalan, C., Rama Sastri, V.B. and Balasubramanian, S.C. 2024. Nutritive Value of Indian Foods, Revised Edition, National Institute of Nutrition (ICMR-NIN), Hyderabad.
2. Indian Council of Medical Research (ICMR-NIN). 2024. Nutrient Requirements and Recommended Dietary Allowances for Indians, Latest Edition, Hyderabad.
3. Mahan, L.K. and Raymond, J.L. 2024. Krause's Food and the Nutrition Care Process, 16th Edition, Elsevier Publications.
4. Wardlaw, G.M. and Smith, A.M. 2024. Contemporary Nutrition, 12th Edition, McGraw Hill Education.
5. World Health Organization (WHO). 2024 Reprint. Diet, Nutrition and the Prevention of Chronic Diseases, WHO Technical Report Series 916, World Health Organization, Geneva.

E-RESOURCES

1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5104202/>
2. <https://www.ncbi.nlm.nih.gov/books/NBK525242/>
3. <https://www.health.gov.il/English/Topics/SeniorHealth/HealthPromo/Pages/nutrition-elderly.aspx>
4. <https://youtu.be/2d0ane8uuR8>
5. <https://youtu.be/TTIOQN24YJ4>

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	3	3	1	3	2	2	-	3	3	3	1	3	3
CO2	3	3	3	3	1	3	2	2	-	3	3	3	1	3	3
CO3	3	3	3	3	1	3	2	2	-	3	3	3	1	3	3
CO4	3	3	3	3	1	3	2	2	-	3	3	3	1	3	3
CO5	3	3	3	3	2	3	1	-	2	3	3	3	3	3	3

S-Strong (3)

M-Medium (2)

L-Low(1)

**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
(AUTONOMOUS)**



SUNDARAKKOTTAI, MANNARGUDI -614016.

(For the candidate admitted in the academic year 2025-2026)

DEPARTMENT OF NUTRITION AND DIETETICS

B.Sc., NUTRITION AND DIETETICS

Semester: IV–CP-IV: Nutrition Through Life Cycle (P)

Ins. Hrs./Week: 4

Course Credit : 4

Course Code:U25ND408P

CONTENTS

1. Prepare a days menu based on food groups

- a. Calculate Calories (Kcal)
- b. Calculate Protein (gm)
- c. Calculate Fat (gm)

2. Plan, prepare and calculate nutritive value for

- a. Pregnant women
- b. Lactating women
- c. Infant
- d. Preschooler
- e. School going children
- f. Adolescent
- g. Adult
- h. Old age

COURSE OUTCOME:

The students will be able to

Here are the **Course Outcomes in short form:**

- 1. Identify the nutritional requirements for different physiological stages.

2. Explain the importance of balanced diets and food group selection across life stages.
3. Plan daily menus using recommended dietary allowances and food composition data.
4. Compare dietary needs at different life stages based on physiological and lifestyle factors.
5. Design and evaluate nutritionally adequate diets for health promotion and disease prevention.

TEXT BOOK (S)

1. Chandra, R.K. 2024. Human Nutrition: A Health Perspective, Wiley-Blackwell Publications.
2. Gibson, R.S. 2024. Principles of Nutritional Assessment, 3rd Edition, Oxford University Press.
3. ICMR-NIN. 2024. Dietary Guidelines for Indians, National Institute of Nutrition, Hyderabad.
4. Mudambi, S.R. and Rajagopal, M.V. 2023. Fundamentals of Foods, Nutrition and Diet Therapy, 6th Edition, New Age International Publishers, New Delhi.
5. Srilakshmi, B. 2024. Dietetics, 9th Edition, New Age International Publishers, New Delhi.

REFERENCE BOOK (S)

1. Chadha, R. and Mathur, P. 2024. Nutrition: A Lifecycle Approach, Orient Blackswan, Delhi.
2. Gopalan, C., Rama Sastri, B.V. and Balasubramanian, S.C. 2024. Nutritive Value of Indian Foods, National Institute of Nutrition (ICMR-NIN), Hyderabad.
3. Krause, M.V. and Hunscher, M.A. 2024. Krause's Food and the Nutrition Care Process, 16th Edition, Elsevier Publications.
4. Park, K. 2025. Park's Textbook of Preventive and Social Medicine, 28th Edition, Banarsidas Bhanot Publishers, Jabalpur, India.
5. Shils, M.E., Olson, J.A., Shike, M. and Ross, A.C. 2024. Modern Nutrition in Health and Disease, 11th Edition, Lippincott Williams and Wilkins.
6. Wardlaw, G.M., Hampl, J.S. and DiSilvestro, R.A. 2024. Contemporary Nutrition, 12th Edition, McGraw Hill Education.

E-RESOURCES

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2. https://youtu.be/_Ap4BXhig5c
3. <https://www.healthychildren.org/English/healthy-living/nutrition/Pages/The-5-Food-Groups-Sample-Choices.aspx>
4. <https://heas.health.vic.gov.au/early-childhood-services/menu-planning/babies>
5. http://www.efad.org/media/1351/nutritional_guidelines_and_menu_checklist_march2014.pdf

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4	PSO5
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CO2	3	3	3	3	1	3	2	2	-	3	3	3	1	3	3
CO3	3	3	3	3	1	3	2	2	-	3	3	3	1	3	3
CO4	3	3	3	3	1	3	2	2	-	3	3	3	1	3	3
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DEPARTMENT OF NUTRITION AND DIETETICS

B.Sc., NUTRITION AND DIETETICS

Semester: IV –AC-IV: Nutritional Biochemistry

Ins. Hrs./Week: 3

Course Credit :2

Course Code: U25AND406

UNIT- I: Carbohydrate

(9 Hours)

Carbohydrate – Structure and classification, Metabolism of carbohydrate – glucose oxidation through glycolysis, Krebs(TCA) cycle, Pentose Phosphate Pathway, Gluconeogenesis. Inborn errors of metabolism – Fructosuria and galactosemia.

UNIT II: Proteins

(10 Hours)

Proteins-primary, secondary, tertiary structure of proteins, Hydrolysis of proteins-Denaturation, precipitation, coagulation. Nutritional classification of proteins, Amino Acids – Classification, chemical properties-amino and carboxyl groups. Metabolism of amino acids- Deamination, Transamination, Decarboxylation – urea cycle, fate of carbon skeleton of amino acids. Inborn errors of metabolism-Phenyl ketonuria, Alcaptonuria, Maple Syrup Urine Disease (MSUD)

UNIT- III: Lipid and Lipid Metabolism

(08 Hours)

Lipids and Lipid Metabolism– Classification of fats, oxidation of fatty acids, Biosynthesis of fatty acids, ketogenesis. Nutritional importance of Saturated and Unsaturated fatty acids, Triacylglycerols, Phospholipids and Cholesterol.

UNIT-IV: Nucleotides, Nucleic Acids And Enzyme

(09 Hours)

Nucleotides and nucleic acids: Structure of purine and pyrimidines nucleotides, RNA – structure and types, double helical structure of DNA, biosynthesis and catabolism of purine and pyrimidine nucleotides. Enzyme- Definition, Enzyme classification, Nomenclature, Factors affecting enzymatic activity, Mechanism of action. Co- enzyme and prosthetic group- role of B vitamins.

UNIT- V: Vitamins and Minerals

(09 Hours)

Vitamins: Fat Soluble Vitamins (A, D, E, K) –functions, and metabolism. Water Soluble Vitamins (Vitamin B and Vitamin C) –functions and metabolism Minerals: Macro Minerals (Calcium, Phosphorus, Sodium, Potassium, Magnesium)– functions, Classification and metabolism. Micro Minerals (Iron, Fluorine, Zinc, Iodine, Selenium) – Classification, functions, and metabolism

Total Lecture Hours- 45

COURSE OUTCOME

The students will be able to

1. Describe the structure, classification, and metabolism of carbohydrates and related inborn errors.
2. Explain the structure of proteins, metabolism of amino acids, and associated metabolic disorders.
3. Classify types of lipids and outline their nutritional significance and metabolic pathways.
4. Summarize the structure and metabolism of nucleotides and nucleic acids, and discuss enzyme functions and co enzymes.
5. Identify the functions and metabolism of vitamins and minerals essential for the human body.

TEXT BOOK (S)

1. Satyanarayana, U. and Chakrapani, U. 2024. Biochemistry, 6th Edition, Elsevier / Books and Allied Pvt. Ltd., Kolkata.
2. Nelson, D.L. and Cox, M.M. 2021. Lehninger Principles of Biochemistry, 8th Edition, W.H. Freeman & Company, New York.
3. Rodwell, V.W., Bender, D.A., Botham, K.M., Kennelly, P.J. and Weil, P.A. 2023. Harper's Illustrated Biochemistry, 32nd Edition, McGraw-Hill Education.
4. Vasudevan, D.M., Sreekumari, S. and Vaidyanathan, K. 2024. Textbook of Biochemistry for Medical Students, 10th Edition, Jaypee Brothers Medical Publishers, New Delhi.
5. Campbell, M.K. and Farrell, S.O. 2024. Biochemistry, 10th Edition, Cengage Learning.

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1. Alberts, B. et al. 2022 . Molecular Biology of the Cell, 7th Edition, Garland Science.
2. Devlin, T.M. 2024. Textbook of Biochemistry with Clinical Correlations, 8th Edition, Wiley-Liss Publications.
3. Horton, H.R. et al. 2024. Principles of Biochemistry, 5th Edition, Pearson / Prentice Hall Publications.

4. Voet, D., Voet, J.G. and Pratt, C.W. 2024. Fundamentals of Biochemistry: Life at the Molecular Level, 6th Edition, Wiley Publications.
5. Mathews, C.K., Van Holde, K.E. and Ahern, K.G. 2023. Biochemistry, 5th Edition, Pearson Education.

E- RESOURCES

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3. <https://www.khanacademy.org/science/biology/macromolecules>
4. <https://ocw.mit.edu/courses/biology/7-05-introductory-biochemistry-spring-2014/>
5. <https://www.coursera.org/learn/biochemistry>

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

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CO2	3	3	3	2	2	2	2	2	1	3	3	3	2	3	3
CO3	3	3	3	2	2	2	2	2	1	3	3	3	2	3	3
CO4	3	3	3	2	2	2	2	2	1	3	3	3	2	3	3
CO5	3	3	3	2	2	2	2	2	2	3	3	3	2	3	3

S-Strong (3)

M-Medium (2)

L-Low(1)

SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE

(AUTONOMOUS)



SUNDARAKKOTTAI, MANNARGUDI -614016.

(For the candidate admitted in the academic year 2025-2026)

DEPARTMENT OF NUTRITION AND DIETETICS

B.Sc., NUTRITION AND DIETETICS

Semester: IV – AP-II: Food Preservation and Processing (P)

Ins. Hrs./Week: 2

Course Credit :2 Course Code: U25AND305P

CONTENTS

- Stages of preparation and observation of sugar syrup
- Preparation of Bakery Products – Cakes, Cookies, Breads, Pies, Pastries
- Extrusion Cooking – Preparation of Pastas
- Dehydration & Evaporation – Preparation of Condensed Milk, Vathal, Vadams and Salted Dry Fish
- Fruit & Vegetable Processing; Use of Chemical Additives for Preservation;
- Thermal Processing of Foods – Preparation of Jams, Jellies, Squashes, Pickles, Chutneys, Sauces (Preservation by salt, sugar and oil)
- Emulsions and Emulsifying Agents – Preparation of Mayonnaise and Vinaigrette
- Fermented Foods – Preparation of idlis and curds/ yoghurt
- Frozen Foods – Preparation of Ice Cream & Fruit/ Vegetable Pulp

COURSE OUTCOME:

The students will be able to

1. Describe common food preservation and processing methods
2. Explain the principles behind preservation techniques like drying, freezing, fermentation, and thermal
3. Demonstrate the preparation of preserved foods such as jams, pickles, and fermented products.
4. Compare different food processing techniques and their effect on food quality and shelf life.

5. Prepare and present a variety of processed food products using suitable preservation methods.

TEXT BOOK(S)

1. Desrosier, N.W. and Desrosier, J.N. 2024. The Technology of Food Preservation, 5th Edition, Springer Publications.
2. Potter, N.N. and Hotchkiss, J.H. 2024. Food Science, 5th Edition, CBS Publishers and Distributors, New Delhi.
3. Rahman, M.S. (Ed.). 2024 Reprint. Handbook of Food Preservation, 3rd Edition, CRC Press, Taylor & Francis Group.
4. Srilakshmi, B. 2024. Food Science, 8th Edition, New Age International Publishers, New Delhi.
5. Subbulakshmi, G. and Udipi, S.A. 2024 Reprint. Food Processing and Preservation, Latest Edition, New Age International Publishers, New Delhi.

REFERENCE BOOK (S)

1. Fellows, P.J. 2022. Food Processing Technology: Principles and Practice, 5th Edition, Woodhead Publishing / Elsevier, Cambridge.
2. Jay, J.M., Loessner, M.J. and Golden, D.A. 2024. Modern Food Microbiology, 8th Edition, Springer Publications.
3. Ranganna, S. 2025. Handbook of Analysis and Quality Control for Fruit and Vegetable Products, 2nd Edition, Tata McGraw-Hill Education, New Delhi.
4. Robertson, G.L. 2024. Food Packaging: Principles and Practice, 3rd Edition, CRC Press, Taylor & Francis Group.
5. Vaclavik, V.A. and Christian, E.W. 2024. Essentials of Food Science, 5th Edition, Springer Publications.

E-RESOURCES

1. <https://youtu.be/DnwC8t8aCAQ>
2. <https://youtu.be/V5pddQGbHKQ>
3. <https://www3.epa.gov/ttn/chief/ap42/ch09/final/c9s09-5.pdf>
4. <https://www.indianhealthyrecipes.com/masala-pasta/>
5. <https://www.allrecipes.com/article/making-mayonnaise/>

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	3	3	1	3	3	2	1	3	3	3	3	3	3
CO2	3	3	3	3	1	3	3	2	1	3	3	3	3	3	3
CO3	3	3	3	3	1	3	3	2	1	3	3	3	3	3	3
CO4	3	3	3	3	1	3	3	2	1	3	3	3	3	3	3
CO5	3	3	3	3	2	3	3	-	2	3	3	3	3	3	3

S-Strong (3)

M-Medium (2)

L-Low(1)

**SENGAMALA THAYAR EDUCATIONAL TRUST WOMEN'S COLLEGE
(AUTONOMOUS)**



SUNDARAKKOTTAI, MANNARGUDI -614016.

(For the candidate admitted in the academic year 2025-2026)

DEPARTMENT OF NUTRITION AND DIETETICS

B.Sc., NUTRITION AND DIETETICS

Semester: IV–SEC-IV: Textile Science

Ins. Hrs./Week:2

Course Credit :2

Course Code: U25SEND44

UNIT –I: Textile Fibers

(06 Hours)

Definition and importance of textile, fibers, filaments, yarns- spun yarns, filament yarns, sewing threads, Fabrics- woven, knitted, non-woven. Classification and nature of fibers.

UNIT– II: General Fiber Properties

(06 Hours)

Fiber length, fiber strength, flexibility, spinnability, uniformity, density, luster, moisture content and moisture regain, elasticity, elastic recovery, elongation. water- repellent properties of fibers, resiliency and compressibility. Chemical and environmental properties.

**UNIT– III: Manufacturing Processes and Properties of Textile Fibers
(06 Hours)**

Introduction, manufacturing processes, physical and chemical properties of textile fibers-Cotton, Silk, Wool, Polyester, Acrylic, Nylon. Identification of textile fibers by burning and microscopic tests; advantages, disadvantages and uses of different textile fibers, blending of fibers and its importance in textiles.

UNIT– IV: Yarns

(06 Hours)

Definition and Types of yarn. Yarn twist. yarn count, Texturization – types. Sequence and types of spinning processes - Conventional yarn spinning - Cotton system and unconventional yarn spinning.

UNIT-V: Conversion of Yarn into Fabric

(06 Hours)

Processing - Woven fabric -basic loom structure, warp and weft yarns, grain line ,Basic weaves.(Plain weave, Rib weave, Variation of plain weave, Basket variation of plain weave, Twill weave, Satin weave, Sateen weave) Decorative weaves (Dobby weaves, Jacquard weave, Leno weaves, Surface figure weave,

Pile, Double weave) draft and peg-plan of weave. Fabric count. Knitted fabrics, Non-Woven fabrics. Other fabric construction process. Braided fabric Nets, Laces, Film fabric and Tufted fabric.

Total Lecture Hours- 30

COURSE OUTCOME

The students will be able to

1. Gain knowledge in textile production and processing.
2. Acquire knowledge about different types of fabric and structure.
3. Understand the fibre extraction procedures and processing.
4. Identify natural and man-made fibres and understand basic textile fabrication techniques.
5. Acquire knowledge of basic weaving in the textile industry.

TEXT BOOK(S)

1. Bernard P. Corbman. 2024. Textiles: Fiber to Fabric, 6th Edition, McGraw Hill International Editions, New Delhi.
2. Deepali Rastogi and Sheetal Chopra. 2024. Textile Science, Orient Blackswan Private Limited, Hyderabad.
3. Kaplan, N.S. 2023. Textile Fibres, Abhishek Publications, Chandigarh.
4. Kothari, V.K. 2024. Progress in Textile Science, Volumes I, II and III, IAFL Publications, New Delhi.
5. Seema Sekhri. 2024. Textbook of Fabric Science: Fundamentals to Finishing, PHI Learning Private Limited, New Delhi.

REFERENCE BOOK (S)

1. Corbman, B.P. and Potter, M.D. 2023. Textiles: Fiber to Fabric, McGraw Hill Book Company, New York.
2. Gohl, E.P.G. and Vilensky, L.D. 2024. Textile Science, 2nd Edition, CBS Publishers and Distributors, New Delhi.
3. Joseph J. Pizzuto. 2024. Fabric Science, 12th Edition, Fairchild Publications, New York.
4. Klein, W.D. 2023. A Practical Guide to Ring Spinning, Textile Institute, Manchester.

5. Marks, R. and Robinson, A.T.C. 2024. Principles of Weaving, Textile Institute, Manchester.
6. Premamoy Ghosh. 2024. Fibre Science and Technology, Tata McGraw Hill Publishing Company Limited, New Delhi.

E- RESOURCES

1. <https://youtu.be/CaoQWOaIUuE>
2. <https://youtu.be/PDuiSnBYCQc>
3. <https://youtu.be/bVjFP8LTa6c>
4. <https://youtu.be/JvLykvVV2sk>
5. <https://youtu.be/2aCT4Kk2P5U>
6. <https://youtu.be/5UBhRgRyxi8>

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3	PSO4	PSO5
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CO2	3	3	2	2	1	3	2	2	2	3	3	3	2	3	3
CO3	3	3	2	2	1	3	2	2	2	3	3	3	2	3	3
CO4	3	3	2	2	1	3	2	2	2	3	3	3	2	3	3
CO5	3	3	2	2	2	3	2	2	2	3	3	3	2	3	3
S-Strong (3)			M-Medium (2)						L-Low(1)						

**SENGAMALA THAYAAR EDUCATIONAL TRUST WOMEN'S COLLEGE
(AUTONOMOUS)**



SUNDARAKKOTTAI, MANNARGUDI -614016.

(For the candidate admitted in the academic year 2025-2026)

DEPARTMENT OF NUTRITION AND DIETETICS

B.Sc., NUTRITION AND DIETETICS

Semester:IV–SEC-V: Computer Applications in Home Science

Ins. Hrs./Week:2

Course Credit :2

Course Code: U25SEND45

UNIT- I: Basics of Computer

(06 Hours)

Introduction to computers- Components, types and applications in nutrition, file and folder management. [Introduction to Internet – Using search engine – Google search – Exploring the next using Internet Explorer and Navigator – Uploading and Download of files and images – E-mail ID creation – Sending messages – Attaching files in E-mail .](#)

UNIT- II: Word Processing for Nutrition Education (MS Word / Google Docs)

(06 Hours)

Creating and formatting nutrition education materials, inserting tables, images, charts (e.g., food pyramid, nutrient tables) ,Preparing: Diet charts,Recipe cards, Nutrition handouts and brochures, Using mail merge for patient follow-ups and feedback

UNIT -III: Spreadsheets in Diet Planning and Analysis (MS Excel / Google Sheets)

(06 Hours)

Data entry, formatting, formulas and functions, Nutrient and energy calculations, Creating: Diet plans, Meal planning templates Nutrient requirement tables
Graphs and charts for: Nutrient distribution, Comparison of dietary intake with RDA Cost analysis and food budgeting.

UNIT- IV: Presentation Tools in Nutrition Communication (MS PowerPoint / Google Slides)

(06 Hours)

Creating nutrition awareness presentations, Designing slides on: Balanced diet Malnutrition, Therapeutic nutrition topics, Use of animation, transitions and multimedia for health communication.

UNIT – V: Internet Applications, Software and Mobile Applications in Home Science (06 Hours)

Nutrition and Home Science websites (WHO, ICMR-NIN, FSSAI, FAO, Eat Right India, [PubMed](#), [Medscape](#)); search engines and literature search; email creation and management; Google Forms for surveys and data collection; mobile apps for diet, fitness and health monitoring; nutrition software (DietCal, NutriSurvey, Food Processor); nutrient analysis, diet assessment and therapeutic diet planning; applications of computer and mobile technologies in healthcare, [interior design and clothing design](#).

Total Lecture Hours- 30

COURSE OUTCOME

The students will be able to,

1. Understand the basics of computers and digital literacy.
2. Create and format nutrition education materials using word processing tools.
3. Use spreadsheets for diet planning, nutrient analysis, and budgeting.
4. Develop nutrition presentations using multimedia tools.
5. Use internet, software and mobile applications in nutrition and Home Science.

TEXT BOOK(S)

1. Gibney, M.J., Lanham-New, S.A., Cassidy, A. and Vorster, H.H. 2023 Reprint. Introduction to Human Nutrition, 3rd Edition, Wiley-Blackwell Publications
2. Goel, A. 2024. Computer Fundamentals, 3rd Edition, Pearson Education, New Delhi.
3. Mahan, L.K. and Raymond, J.L. 2024. Krause's Food and the Nutrition Care Process, 16th Edition, Elsevier Publications.
4. Rajaraman, V. 2024. Fundamentals of Computers, 6th Edition, PHI Learning Pvt. Ltd., New Delhi.

- Saxena, S. 2023. A First Course in Computers, 10th Edition, Vikas Publishing House Pvt. Ltd., New Delhi.

REFERENCE BOOK(S)

- Anjali, P.S.R. 2024. Applications of Computers in Home Science, Pearson Education.
- Bhatnagar, S.K. 2023. Home Science: Theory and Practice, 3rd Edition, Oxford University Press, New Delhi.
- Mehra, N.K. and Bhatnagar, S. 2024 . Fundamentals of Home Science, 3rd Edition, Oxford University Press, New Delhi.
- Sharma, R. and Gupta, P. 2024. Computerized Techniques in Interior Design and Home Management, 2nd Edition, Macmillan Publishers.
- Venkatesh, S.G. and Raghu, R.S. 2024. Textile and Apparel: Computer Applications in Design, Springer Publications.

E-RESOURCES:

- https://www.nhp.gov.in/nutrition-guide_mtl
- <https://www.professionaldietitian.co.in>
- <https://www.nutrisurvey.de>
- <https://docs.google.com/forms>
- <https://www.nia.nih.gov/health/healthy-eating>

MAPPING WITH PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

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CO2	3	3	2	2	3	3	3	2	2	3	3	3	2	3	3
CO3	3	3	2	2	3	3	3	2	2	3	3	3	2	3	3
CO4	3	3	2	2	3	3	3	2	2	3	3	3	2	3	3
CO5	3	3	2	2	3	3	3	2	2	3	3	3	2	3	3

S-Strong (3)

M-Medium (2)

L-Low(1)