



## V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Reaccredited with 'A++' Grade (4<sup>th</sup> Cycle) by NAAC

**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

### OUTCOME BASED EDUCATION WITH CHOICE BASED CREDIT SYSTEM REGULATIONS AND SYLLABUS

(with effect from Academic Year 2025 - 2026)

V.V.Vanniaperumal College for Women, Virudhunagar, established in 1962, offers 13 UG Programmes (Aided), 13 UG Programmes (SF), 13 PG Programmes and 6 Ph.D. Programmes. The curricula for all these Programmes, except Ph.D. Programmes, have been framed as per the guidelines given by the University Grants Commission (UGC) & Tamil Nadu State Council for Higher Education (TANSCH) under Choice Based Credit System (CBCS) and the guidelines for Outcome Based Education (OBE).

The Departments of Commerce, English, History, Mathematics, Biochemistry and Tamil upgraded as Research Centres offer Ph.D. Programmes as per the norms and regulations of Madurai Kamaraj University, Madurai and do not come under the purview of CBCS.

#### A. CHOICE BASED CREDIT SYSTEM (CBCS)

The CBCS provides an opportunity for the students to choose Courses from the prescribed Courses. The CBCS is followed as per the guidelines formulated by the UGC. The performance of students is evaluated based on the uniform grading system. Computation of the Cumulative Grade Point Average (CGPA) is made to ensure uniformity in evaluation system.

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#### List of Programmes in which CBCS/Elective Course System is implemented

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##### UG PROGRAMMES

Arts & Humanities	:	History (E.M. & T.M.), English, Tamil
Physical & Life Sciences	:	Mathematics, Zoology, Chemistry, Physics, Biochemistry, Home Science - Nutrition and Dietetics, Costume Design and Fashion, Microbiology, Biotechnology, Computer Science, Information Technology, Data Science, Computer Applications and Computer Applications - Graphic Design
Commerce & Management	:	Commerce, Commerce (Computer Applications), Commerce (Professional Accounting), Business Administration

**PG PROGRAMMES**

Arts & Humanities	:	History, English, Tamil
Physical & Life Sciences	:	Mathematics, Physics, Chemistry, Biochemistry, Home Science - Nutrition and Dietetics, Biotechnology, Computer Science and Computer Applications (MCA) *
Commerce & Management	:	Commerce, Business Administration (MBA) *
* AICTE approved Programmes		

**OUTLINE OF CHOICE BASED CREDIT SYSTEM – UG**

1. Core Courses
2. Elective Courses
  - Generic Elective Courses
  - Discipline Specific Elective Courses (DSEC)
  - Non Major Elective Courses (NMEC)
3. Skill Enhancement Courses (SEC)
4. Environmental Studies (EVS)
5. Value Education
6. Self Study Courses (Online)
7. Extra Credit Courses (Self Study Courses) (Optional)

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**List of Non Major Elective Courses (NME)  
(2023-2024 onwards)**

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**UG PROGRAMMES**

Name of the Course	Course Code	Semester	Department
Introduction to Tourism	23UHN11	I	History(EM)
Indian Constitution	23UHN21	II	History(EM)
சுற்றுலா ஓர் அறிமுகம்	23UHN11	I	History (TM)
இந்திய அரசியலமைப்பு	23UHN21	II	History(TM)
Popular Literature and Culture	23UENN11	I	English
English for Professions	23UENN21	II	
பேச்சுக்கலைத்திறன்	23UTAN11	I	Tamil
பயன்முறைத் தமிழ்	23UTAN21	II	
Practical Banking	23UCON11	I	Commerce (Aided)
Basic Accounting Principles	23UCON22	II	
Financial Literacy-I	23UCON12	I	Commerce (SF)
Financial Literacy -II	23UCON21	II	
Self-Employment and Startup Business	23UCCN11	I	Commerce CA (SF)

Fundamentals of Marketing	23UCCN21	II	
Women Protection Laws	23UCPN11	I	Commerce (Professional Accounting)
Basic Labour Laws	23UCPN21	II	
Basics of Event Management	23UBAN11	I	Business Administration
Business Management	23UBAN21	II	
Quantitative Aptitude I	23UMTN11	I	Mathematics
Quantitative Aptitude II	23UMTN21	II	
Physics for Everyday life -I	23UPHN11	I	Physics
Physics for Everyday life -II	23UPHN21	II	
Food Chemistry	23UCHN11	I	Chemistry
Drugs and Natural Products	23UCHN21	II	
Ornamental fish farming and Management	23UZYN11	I	Zoology
Biocomposting for Entrepreneurship	23UZYN21	II	
Foundations of Baking and Confectionery	23UHSN11	I	Home Science – Nutrition and Dietetics
Basic Nutrition and Dietetics	23UHSN21	II	
Nutrition and Health	23UBCN11	I	Biochemistry
Life Style Diseases	23UBCN21	II	
Social and Preventive Medicine	23UMBN11	I	Microbiology
Nutrition & Health Hygiene	23UMBN21	II	
Herbal Medicine	23UBON11	I	Biotechnology
Organic farming and Health Management	23UBON21	II	
Basics of Fashion	23UCFN11	I	Costume Design And Fashion
Interior Designing	23UCFN21	II	
Office Automation	23UCSN11	I	Computer Science
Introduction to Internet and HTML 5	23UCSN21	II	
Office Automation	23UITN11	I	Information Technology
Introduction to HTML	23UITN21	II	
Introduction to HTML	23UCAN11	I	Computer Applications
Fundamentals of Computers	23UCAN21	II	
Introduction to HTML	23UGDN11	I	Computer Applications - Graphic Design
Fundamentals of Computers	23UGDN21	II	
Organic Farming	23UBYN11	I	Botany
Nursery and Landscaping	23UBYN12		
Mushroom Cultivation	23UBYN21	II	
Medicinal Botany	23UBYN22		
Cadet Corps for Career Development I	23UNCN11	I	National Cadet Corps
Cadet Corps for Career Development II	23UNCN21	II	

## B. OUTCOME BASED EDUCATION (OBE) FRAMEWORK

The core philosophy of Outcome Based Education rests in employing a student - centric learning approach to measure the performance of students based on a set of pre-determined outcomes. The significant advantage of OBE is that it enables a revamp of the curriculum based on the learning outcomes, upgrade of academic resources, quality enhancement in research and

integration of technology in the teaching –learning process. It also helps in bringing clarity among students as to what is expected of them after completion of the Programme in general and the Course in particular. The OBE directs the teachers to channelize their teaching methodologies and evaluation strategies to attain the PEOs and fulfill the Vision and Mission of the Institution.

### **Vision of the Institution**

The founding vision of the Institution is to impart Quality Education to the rural womenfolk and to empower them with knowledge and leadership quality.

### **Mission of the Institution**

The mission of the Institution is to impart liberal education committed to quality and excellence. Its quest is to mould learners into globally competent individuals instilling in them life-oriented skills, personal integrity, leadership qualities and service mindedness.

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## **B.1 Programme Educational Objectives, Programme Outcomes and Programme Specific Outcomes**

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It is imperative for the institution to set the Programme Educational Objectives (PEOs), Programme Outcomes (POs) and Course Outcomes (COs), consistent with its Vision and Mission statements. The PEOs and the POs should be driven by the mission of the institution and should provide distinctive paths to achieve the stated goals. The PEOs for each Programme have to fulfill the Vision and Mission of the Department offering the Programme.

### **Vision of the Department of Home Science**

To develop scientific, technical, research and entrepreneurial skills to uphold professionalism and ethics for bringing out successful professionals and contribute for the betterment of family and community in the contemporary world.

### **Mission of the Department of Home Science**

To empower the students by providing quality education through scientific aspects of Home Science and ensure health for the family, community and nation.

#### **B.1.1 Programme Educational Objectives (PEOs)**

PEOs are broad statements that describe the career and professional achievements that the Programme is preparing the graduates to achieve within the first few years after graduation. PEOs are framed for each Programme and should be consistent with the mission of the Institution.

## Programme Educational Objectives (PEOs) of B.Sc. Home Science - Nutrition and Dietetics Programme

The students will be able to

- become professionally competent nutritionist, dieticians, health care workers in hospitals, health departments, speciality clinics, fitness centres, hospitality industries, Social welfare organizations and public health agencies or member of teaching faculty in higher education or become self-employed.
- employ their culinary skills, artistic skills, interpersonal skills and technical skills both in career and home for holistic living.
- follow professional ethics and provide feasible solutions for health related problems in social, cultural and environmental issues.

Key Components of the Mission Statement	PEO1	PEO2	PEO3
prepare the students in becoming self-reliant	√	√	√
establish of an entrepreneur in any of the varied fields of Home Science	√	√	√
uphold professionalism and ethics for improving their quality of living	√	√	√

### B.1.2 Programme Outcomes (POs)

POs shall be based on Graduate Attributes (GAs) of the Programme. The GAs are the attributes expected of a graduate from a Programme in terms of knowledge, skills, attitude and values. The Graduate Attributes include Disciplinary Knowledge, Communication Skills, Critical Thinking, Problem Solving, Analytical Reasoning, Research Related Skills, Co-operation/Team Work, Scientific Reasoning, Reflective Thinking, Information/Digital Literacy, Multicultural Competence, Moral and Ethical Awareness/Reasoning, Leadership Qualities and Lifelong Learning

**On successful completion of the Programme, the students will be able to**

- 1 apply effectively the acquired knowledge and skill in the field of Arts, Physical Science, Life Science, Computer Science, Commerce and Management for higher studies and employment.  
(*Disciplinary Knowledge*)
- 2 articulate innovative thoughts and ideas proficiently in both in spoken and written forms.  
(*Communication Skills*)
- 3 identify, formulate and solve problems in real life situations scientifically / systematically by adapting updated skills in using modern tools and techniques. (*Scientific Reasoning and Problem Solving*)

- 4 critically analyse, synthesize and evaluate data, theories and ideas to provide valid suggestions through assignments, case studies, Internship and projects for the fulfillment of the local, national and global developmental needs. (*Critical Thinking and Analytical Reasoning*)
- 5 use ICT in a variety of self-directed lifelong learning activities to face career challenges in the changing environment. (*Digital Literacy, Self - directed and Lifelong Learning*)
- 6 self-manage and function efficiently as a member or a leader in diverse teams in a multicultural society for nation building. (*Co-operation/Team Work and Multicultural Competence*)
- 7 uphold the imbibed ethical and moral values in personal, professional and social life for sustainable environment. (*Moral and Ethical Awareness*)

### **B.1.3 Programme Specific Outcomes (PSOs)**

Based on the Programme Outcomes, Programme Specific Outcomes are framed for each UG Programme. Programme Specific Outcomes denote what the students would be able to do at the time of graduation. They are Programme specific. It is mandatory that each PO should be mapped to the respective PSO.

**On completion of B.Sc. Home Science – Nutrition and Dietetics Programme, the students will be able to**

#### **PO 1: *Disciplinary Knowledge***

PSO1.a: apply the knowledge of the basic principles involved in various branches of Home Science incorporated with knowledge in related courses in higher studies.

PSO1.b : apply their professional and entrepreneurial skills in the areas such as Food Science, Nutrition Science, Dietetics, Human Development, Textiles and Clothing, Family Resource Management, Food Service Management, Community Nutrition, Family Dynamics, Extension Education and Computer for establishing a career in food and hospitality industries and other allied organizations leading to economic empowerment.

#### **PO 2: *Communication Skills***

PSO 2.a: use appropriate communication strategies to deliver the learnt concepts effectively to peer groups, job providers and common people in relevant situations.

PSO 2.b: hone communication skills in effective presentation of curricular ideas, concept and scientific principles in various circumstances particularly for placement.

**PO 3: Scientific Reasoning and Problem Solving**

PSO 3 identify the prevalent demands for Home Science related issues in the contemporary society and formulate new methods through research activities to fulfil them with the best possible service for human upliftment through research..

**PO 4: Critical thinking and Analytical Reasoning**

PSO 4.a: evaluate the practices in cookery, diet planning, diet counselling, food analysis, food preservation, food safety and quality control, bakery and confectionary, Human Development, pre-school management, textiles and clothing, resource management, interior decoration, housekeeping and arrive at a conclusion to instill a health culture in the community through outreach programmes.

PSO 4.b : analyse critically the current situation of the society in human health related issues and find out the solutions from acquired practical skills gained in the laboratory.

**PO 5: Digital Literacy, Self - directed and Lifelong learning**

PSO 5: upgrade their learning skills in their field of interest through ICT to meet the challenges in competitive examinations and grab more career opportunities as entrepreneurs.

**PO 6: Cooperation/Team Work and Multi-Cultural Competence**

PSO 6: maintain a harmonious interpersonal relationship as member or leader in team works and their wholesome personality, to attain a goal.

**PO 7: Moral and Ethical awareness**

PSO 7: practice the inculcated moral values and ethics for promoting sound health and holistic living by considering about environmental issues.

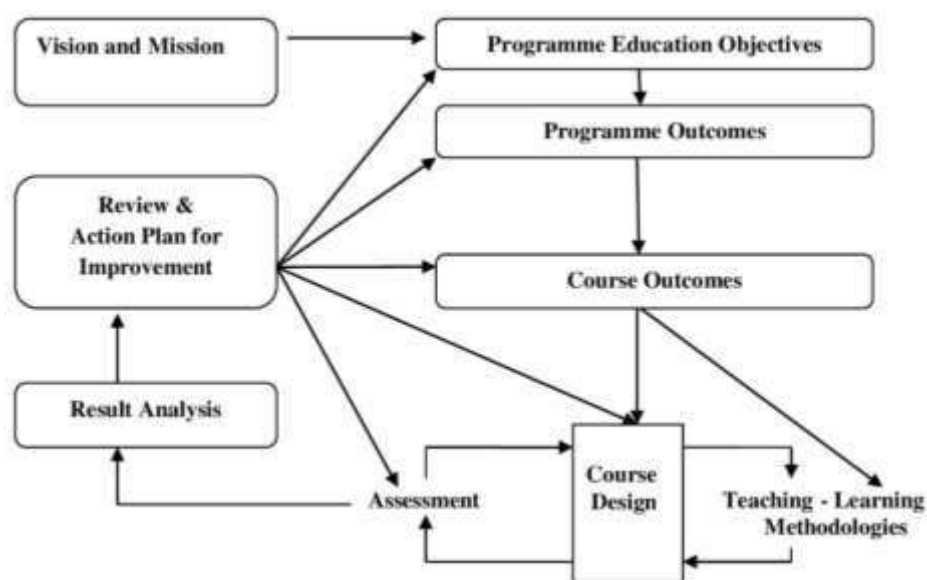
**PO-PEO Mapping Matrix**

Attainment of PEOs can be measured by a PO-PEO matrix. PEOs should evolve through constant feedback from alumnae, students, industry, management, etc. It is mandatory that each PEO should be mapped to at least one of the POs.

PEOs POs/PSOs	PEO1	PEO2	PEO3
PO1/PSO1.a	-	✓	✓
PO1/PSO1.b	✓	✓	✓
PO2/PSO2.a	✓	✓	-
PO2/PSO2.b	✓	✓	-
PO3/PSO3		✓	✓
PO4/PSO4.a	-	✓	✓
PO4/PSO4.b	✓	✓	-
PO5/PSO5	✓	✓	-
PO6/PSO6	-	✓	✓
PO7/PSO7	-	-	✓

#### B.1.4 Course Outcomes (COs)

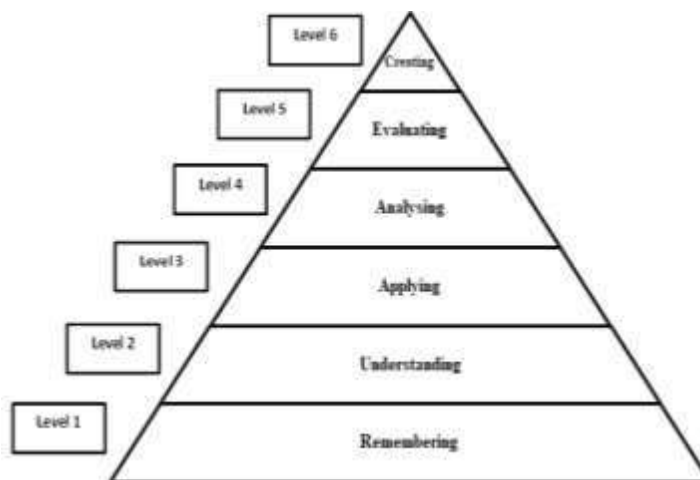
Course Outcomes are narrow statements restricted to the Course contents given in five units. Course Outcomes describe what students would be capable of, after learning the contents of the Course. They reflect the level of knowledge gained, skills acquired and attributes developed by the students after learning of Course contents. COs are measurable, attainable and manageable in number. COs contribute to attain POs in such a way that each CO addresses at least one of the POs and also each PO is reasonably addressed by adequate number of COs.





It is important to determine the methods of assessment. A comprehensive assessment strategy may be outlined using the revised Bloom's Taxonomy levels.

## BLOOM'S TAXONOMY



## CO – PO Mapping of Courses

After framing the CO statements, the COs framed for each Course is mapped with POs based on the relationship that exists between them. The COs which are not related to any of the POs is indicated with (-), signifying Nil. Measurement Mapping is based on Four Points Scale [High (H), Medium (M), Low (L) and Nil (-)]. For calculating weighted percentage of contribution of each Course in the attainment of the respective POs, the weights assigned for H, M and L are 3, 2 and 1 respectively.

## CO-PO/PSO Mapping Table (Course Articulation Matrix)

PO/PSOs	PO1/ PSO1	PO2/ PSO2	PO3/ PSO3	PO4/ PSO4	PO5/ PSO5	PO6/ PSO6	PO7/ PSO7
COs							
CO1							
CO2							
CO3							
CO4							
CO5							

## ELIGIBILITY FOR ADMISSION

The Candidates should have passed the Higher Secondary Examination conducted by the Board of Higher Secondary Education, Tamilnadu or any other Examination accepted by Academic Council with any Science / Home Science / Nursing Vocational group in Higher Secondary Examination.

**DURATION OF THE PROGRAMME**

The candidates shall undergo the prescribed Programme of study for a period of three academic years (six semesters).

**MEDIUM OF INSTRUCTION**

English

**COURSES OFFERED**

Part I	:	Tamil/Hindi Course
Part II	:	English
Part III	:	Core Courses
		Elective Courses <ul style="list-style-type: none"> <li>• Generic Elective Courses</li> <li>• Discipline Specific Elective Courses</li> </ul>
		Self Study Course - online
Part IV	:	Skill Enhancement Courses (SEC)
		Elective Course (NMEC)
		Environmental Studies Value Education
		Field Project/Internship
		Self Study Course - online
Part V	:	National Service Scheme/ Physical Education/ Youth Red Cross Society/ Red Ribbon Club/ Science Forum/ Eco Club/ Library and Information Science/ Consumer Club/ Health and Fitness Club/ National Cadet Corps/ Rotaract Club

**B.2 EVALUATION SCHEME****B.2.1. PART II**

Components	Internal Assessment Marks	Summative Examination Marks	Total Marks
Theory	15	60	100
Practical	5	15	
Assignment	5	-	

Three Periodic Tests - Average of the best two will be considered.

**B.2.2. Part I & PART III - Core Courses, Elective Courses (Generic, DSEC)**

Components	Internal Assessment Marks	External Examination Marks	Total Marks
Theory	25	75	100

**INTERNAL ASSESSMENT****Distribution of Marks****Theory**

Mode of Evaluation			Marks
Periodic Test			15
Assignment	K3 Level	:	5
Quiz	K1 Level	:	5
<b>Total</b>			<b>25</b>

Three Periodic Tests - Average of the best two will be considered

Two Assignments - Better of the two will be considered

Three Quiz Tests - Best of the three will be considered

**Practical**

Mode of Evaluation			Marks
Practical Test*			30
Record & Performance			10
<b>Total</b>			<b>40</b>

\*Average of the two Practical Tests will be considered

**Question Pattern for Internal Tests****Duration: 2 Hours**

Section	Q. No.	Types of Question	No. of Questions	No. of Questions to be answered	Marks for each Question	Total Marks
A	1 - 4	Multiple Choice	4	4	1	4
B	5 -6	Internal Choice - Either ... or Type	3	3	7	21
C	8 -9	Internal Choice - Either... or Type	2	2	10	20
<b>Total</b>						<b>45*</b>

\*The total marks obtained in the Periodic Test will be calculated for 15 marks

**SUMMATIVE EXAMINATION****Question Pattern****Duration: 3 Hours**

Section	Q. No.	Types of Question	No. of Questions	No. of Questions to be answered	Marks for each Question	Total Marks
A	1 -10	Multiple Choice	10	10	1	10
B	11 - 15	Internal Choice – Either ...or Type	5	5	7	35
C	16 - 18	Internal Choice – Either... or Type	3	3	10	30
<b>Total</b>						<b>75</b>

**PROJECT****Assessment by Internal Examiner Only****Internal Assessment****Distribution of Marks**

Mode of Evaluation	:	Marks
Project work and Report	:	60
Presentation and Viva –Voce	:	40
Total	:	100

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**B.2.3 PART IV - Skill Enhancement Courses, Non Major Elective Courses and Foundation Course**


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**B.2.3.1 FOUNDATION COURSE****INTERNAL ASSESSMENT****Distribution of Marks****Theory**

Mode of Evaluation		Marks
Periodic Test	:	15
Assignment	K2 Level :	5
Quiz	K1 Level :	5
<b>Total</b>	<b>:</b>	<b>25</b>

Three Periodic Tests - Average of the best two will be considered

Two Assignments - Better of the two will be considered

Three Quiz Tests - Best of the three will be considered

**Question Pattern for Periodic Tests****Duration: 1 Hour**

Section	Q.No.	Types of Question	No. of Questions	No. of Questions to be answered	Marks for each Question	Total Marks
A	1 - 3	Internal Choice - Either ...or Type	3	3	5	15
B	4	Internal Choice – Either ...or Type	1	1	10	10
	<b>Total</b>					<b>25*</b>

\*The total marks obtained in the Periodic Test will be calculated for 15 marks

**SUMMATIVE EXAMINATION**

<b>Mode of Evaluation</b>	<b>Marks</b>
Summative Examination :	50
Online Quiz (Multiple Choice Questions - K2 Level) :	25
<b>Total</b> :	<b>75</b>

**Question Pattern****Duration: 2 Hours**

<b>Section</b>	<b>Q.No.</b>	<b>Types of Question</b>	<b>No. of Questions</b>	<b>No. of Questions to be answered</b>	<b>Marks for each Question</b>	<b>Total Marks</b>
A	1 - 5	Internal Choice - Either ... or Type	5	5	6	30
B	6 - 7	Internal Choice – Either... or Type	2	2	10	20
<b>Total</b>						<b>50</b>

**B.2.3.2 Skill Enhancement Course - Entrepreneurial skills****INTERNAL ASSESSMENT ONLY****Distribution of Marks**

<b>Mode of Evaluation</b>	<b>Marks</b>
Periodic Test :	15
Assignment :	5
Quiz :	5
Model Examinations :	60
Online Quiz(Multiple Choice Questions - K2 Level) :	15
<b>Total</b> :	<b>100</b>

**Question Pattern for Periodic Tests****Duration: 1 Hour**

<b>Section</b>	<b>Types of Question</b>	<b>No. of Questions</b>	<b>No. of Questions to be answered</b>	<b>Marks for each Question</b>	<b>Total Marks</b>
A Q. No.(1- 3)	Internal Choice – Either Or Type	3	3	6	18
B Q. No.(4)	Internal Choice – Either Or Type	1	1	12	12
<b>Total</b>					<b>30</b>

\*The total marks obtained in the Periodic Test will be calculated for 15 marks

Two Periodic Tests - Better of the two will be considered

Two Assignments - Better of the two will be considered

Two Quiz Tests - Better of the two will be considered

**Question Pattern for Model Examination****Duration: 2 Hours**

Section	Types of Question	No. of Questions	No. of Questions to be answered	Marks for each Question	Total Marks
A Q. No.(1-5)	Internal Choice – Either Or Type	5	5	6	30
B Q. No.(6- 8)	Internal Choice – Either Or Type	3	3	10	30
<b>Total</b>					<b>60</b>

**B.2.3.3 Skill Enhancement Courses/ Non Major Elective Courses****INTERNAL ASSESSMENT****Distribution of Marks****Theory**

Mode of Evaluation			Marks
Periodic Test			: 15
Assignment	K3 Level	:	5
Quiz	K2 Level	:	5
<b>Total</b>			<b>: 25</b>

Three Periodic Tests - Average of the best two will be considered

Two Assignments - Better of the two will be considered

Three Quiz Tests - Best of the three will be considered

**Question Pattern for Periodic Tests****Duration: 1 Hour**

Section	Q.No.	Types of Question	No. of Questions	No. of Questions to be answered	Marks for each Question	Total Marks
A	1 - 3	Internal Choice - Either ...or Type	3	3	5	15
B	4	Internal Choice – Either ...or Type	1	1	10	10
<b>Total</b>						<b>25*</b>

\*The total marks obtained in the Periodic Test will be calculated for 15 marks

**SUMMATIVE EXAMINATION**

Mode of Evaluation	Marks
Summative Examination	: 50
Online Quiz (Multiple Choice Questions - K2 Level)	: 25
<b>Total</b>	<b>: 75</b>

**Question Pattern****Duration: 2 Hours**

Section	Q.No.	Types of Question	No. of Questions	No. of Questions to be answered	Marks for each Question	Total Marks
A	1 - 5	Internal Choice - Either ... or Type	5	5	6	30
B	6 - 7	Internal Choice – Either... or Type	2	2	10	20
	<b>Total</b>					<b>50</b>

**B.2.4 PART IV- ENVIRONMENTAL STUDIES / VALUE EDUCATION****INTERNAL ASSESSMENT ONLY****Evaluation Pattern**

Mode of Evaluation	Marks
Periodic Test	: 15
Assignment - K3 Level	: 10
Online Quiz (Multiple Choice Questions - K2 Level)	: 25
Poster Presentation - K3 Level	10
Report - K3 Level	10
Model Examination	: 30
<b>Total</b>	<b>: 100</b>

Three Assignment - Best of the three will be considered

**Question Pattern for Periodic Tests****Duration: 1 Hour**

Section	Types of Question	No. of Questions	No. of Questions to be answered	Marks for each Question	Total Marks
A Q. No.(1- 3)	Internal Choice – Either Or Type	3	3	6	18
B Q. No.(4)	Internal Choice – Either Or Type	1	1	12	12
<b>Total</b>					<b>30*</b>

Two Periodic tests - Better of the two will be considered

The total marks obtained in the Periodic test will be calculated for 15 marks

**Question Pattern for Model Examination****Duration: 2 ½ Hours**

Section	Q.No.	Types of Question	No. of Questions	No. of Questions to be answered	Marks for each Question	Total Marks
A	1 - 5	Internal Choice - Either ... or Type	5	5	6	30
B	6 - 8	Internal Choice – Either... or Type	3	3	10	30
	<b>Total</b>					<b>60*</b>

\*The total marks obtained in the Model Examination will be calculated for 30 marks

**B. 2. 5 PART IV- Internship / Industrial Training**

- Internship / Industrial Training is mandatory for all the Students
- **Internship:** Students have to involve in a designated activity, working in an organization under the guidance of an identified mentor for a period of 30 days.
- **Industrial Training:** Student has to undertake in-plant training in industries individually or in group for a period of 30 days.
- Internship / Industrial Training must be done during the fourth semester holidays
- **Internal Assessment only.**

Mode of Evaluation		Marks
Onsite Learning/Survey	:	50
Report	:	25
Viva-Voce	:	25
<b>Total</b>		<b>100</b>

**B.2.6 SELF STUDY COURSE****B.2.6.1 PART III - Discipline Specific Quiz – Online**

- Assessment by Internal Examiner only
- Question Bank is prepared by the Faculty Members of the Departments for all the Core and Elective Courses offered in all the Semesters.
- No. of Questions to be taken 700.
- Multiple Choice Question pattern is followed.
- Online Test will be conducted in VI Semester for 100 Marks.
- Model Examination is conducted after two periodic tests.



**Distribution of Marks**

Mode of Evaluation		Marks
Periodic Test	:	25
Model Examination	:	75
	:	<b>100</b>

Two Periodic Tests - Better of the two will be considered

**B.2.6 .2 PART IV - Practice for Competitive Examinations – Online**

Assessment by Internal Examiner only

- Question Bank prepared by the Faculty Members of the respective Departments will be followed.
- Multiple Choice Question pattern is followed.
- Online Test will be conducted in V Semester for 100 Marks.
- Model Examination is conducted after two periodic tests.

**Subject wise Allotment of Marks**

Subject		Marks
Tamil	:	10
English	:	10
History	:	10
Mathematics	:	10
Current affairs	:	10
Commerce, Law & Economics	:	10
Physical Sciences	:	10
Life Sciences	:	15
Computer Science	:	5
Food and Nutrition	:	5
Sports and Games	:	5
<b>Total</b>	<b>:</b>	<b>100</b>

**Distribution of Marks**

Mode of Evaluation		Marks
Periodic Test	:	25
Model Examination	:	75
<b>Total</b>	<b>:</b>	<b>100</b>

Two Periodic Tests - Better of the two will be considered

**B.2.7. Part V – Extension Activities****INTERNAL ASSESSMENT ONLY****Distribution of Marks**

Mode of Evaluation	Marks
Attendance :	5
Performance :	10
Report/Assignment/Project/Camp/Practical :	10
<b>Total :</b>	<b>25*</b>

\*The marks obtained will be calculated for 100 marks

**B.2.8 EXTRA CREDIT COURSES (OPTIONAL)****2.8.1 Extra Credit Course offered by the Department.**

Assessment by Internal Examiner Only (To be conducted along with the III Periodic Test)

**Distribution of Marks**

Mode of Evaluation	Marks
Quiz (Multiple Choice Questions) :	25
Model Examination :	75
<b>Total :</b>	<b>100</b>

**Question Pattern for Model Examination**

Section	Types of Question	No. of Questions	No. of Questions to be answered	Marks for each Question	Total Marks
A Q.No.(1-5)	Internal Choice- Either or Type	5	5	7	35
B Q.No.(6-9)	Internal Choice- Either or Type	4	4	10	40
				<b>Total</b>	<b>75</b>

**2.8.2 Extra credit Course offered by MOOC (Massive Open Online Course)**

- The Courses shall be completed within the first V Semesters of the Programme.
- The allotment of credits is as follows (**Maximum of 10 credits**)
  - 4weeks Course - 1 credit
  - 8 weeks Course - 2 credits
  - 12 weeks Course - 3 credits

**ELIGIBILITY FOR THE DEGREE**

- The candidate will not be eligible for the Degree without completing the prescribed Courses of study, lab work, *etc.*, and a minimum Pass marks in all the Courses.

Attendance, progress and conduct certification from the Head of the Institution will be required for the students to write the examination.

- No Pass minimum for Internal Assessment for all the Courses.
- Pass minimum for External Examination is 27 marks out of 75 marks for Core Courses, Elective Courses (Generic Elective, DSEC Courses)
- Pass minimum for External Examination is 18 marks out of 50 marks for Skill Enhancement Courses and Non Major Elective Courses (NMEC).
- The aggregate minimum pass percentage is 40
- Pass minimum for External Practical Examination is 21 marks out of 60 marks.

### **ATTENDANCE**

- (a) The students who have attended the classes for 76 days (85%) and above are permitted to appear for the Summative Examinations without any condition.
  - (b) The students who have only 60-75 days (66% - 84%) of attendance are permitted to appear for the Summative Examinations after paying the required fine amount and fulfilling other conditions according to the respective cases.
  - (c) The students who have attended the classes for 59 days and less - upto 45 days (50%- 65%) can appear for the Summative Examinations only after getting special permission from the Principal.
  - (d) The students who have attended the classes for 44 days or less (50%) cannot appear for the Summative Examinations and have to repeat the whole semester.
    - For Part V in UG Programmes, the students require 75 % of attendance to get a credit.
    - For Certificate, Diploma, Advanced Diploma and Post Graduate Diploma Programmes, the students require 75% of attendance to appear for the Theory/Practical Examinations.
- These rules come into effect from 2023-2024 onwards.

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### **B.3 ASSESSMENT MANAGEMENT PLAN**

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An Assessment Management Plan that details the assessment strategy both at the Programme and the Course levels is prepared. The continuous assessment is implemented using an assessment rubric to interpret and grade students.

#### **B.3.1 Assessment Process for CO Attainment**

Assessment is one or more processes carried out by the institution that identify, collect and prepare data to evaluate the achievement of Course Outcomes and Programme Outcomes. Course Outcome is evaluated based on the performance of students in the Continuous Internal

Assessments and in End Semester Examination of a Course. Target levels of attainment shall be fixed by the Course teacher and Heads of the respective departments.

**Direct Assessment (rubric based)**-Conventional assessment tools such as Term Test, Assignment, Quiz and End Semester Summative Examination are used.

**Indirect Assessment** –Done through Course Exit Survey.

### **CO Assessment Rubrics**

For the evaluation and assessment of COs and POs, rubrics are used. Internal assessment contributes 40% and End Semester assessment contributes 60% to the total attainment of a CO for the theory Courses. For the practical Courses, internal assessment contributes 50% and Semester assessment contributes 50% to the total attainment of a CO. Once the Course Outcome is measured, the PO can be measured using a CO-PO matrix.

### **CO Attainment**

#### **Direct CO Attainment**

Course outcomes of all Courses are assessed and the CO – wise marks obtained by all the students are recorded for all the assessment tools. The respective CO attainment level is evaluated based on set attainment rubrics.

#### **Target Setting for Assessment Method**

For setting up the target of internal assessment tools, 55% of the maximum mark is fixed as target. For setting up the target of End Semester Examination, the average mark of the class shall be set as target.

#### **Formula for Attainment for each CO**

Attainment = Percentage of students who have scored more than the target marks

$$\text{Percentage of Attainment} = \frac{\text{Number of Students who Scored more than the Target}}{\text{Total Number of Students}} \times 100$$

**Attainment Levels of COs**

Assessment Methods	Attainment Levels	
Internal Assessment	Level 1	50% of students scoring more than set target marks in Internal Assessment tools
	Level 2	55% of students scoring more than set target marks in Internal Assessment tools
	Level 3	60% of students scoring more than set target marks in internal Assessment tools
End Semester Summative Examination	Level 1	50% of students scoring more than average marks in End Semester Summative Examination
	Level 2	55% of students scoring more than average marks in End Semester Summative Examination
	Level 3	60% of students scoring more than average marks in End Semester Summative Examination

**Indirect CO Attainment**

At the end of each Course, an exit survey is conducted to collect the opinion of the students on attainment of Course Outcomes. A questionnaire is designed to reflect the views of the students about the Course outcomes.

**Overall CO Attainment=75% of Direct CO Attainment + 25 % of Indirect CO Attainment**

In each Course, the level of attainment of each CO is compared with the predefined targets. If the target is not reached, the Course teacher takes necessary steps for the improvement to reach the target.

For continuous improvement, if the target is reached, the Course teacher can set the target as a value greater than the CO attainment of the previous year.

**B.3.2 Assessment Process for Overall PO Attainment**

With the help of CO-PO mapping, the PO attainment is calculated. PO assessment is done by giving 75% weightage to direct assessment and 25% weightage to indirect assessment. Direct assessment is based on CO attainment, where 75% weightage is given to attainment through End Semester Examination and 25% weightage is given to attainment through Internal assessments. Indirect assessment is done through Graduate Exit Survey and participation of students in Co-curricular/Extra-curricular activities.

**PO Assessment Tools**

Mode of Assessment	Assessment Tool	Description
Direct Attainment (Weightage -75%)	CO Assessment	This is computed from the calculated CO Attainment value for each Course
Indirect Attainment (Weightage - 25%)	Graduate Exit Survey 10%	At the end of the Programme, Graduate Exit Survey is collected from the graduates and it gives the opinion of the graduates on attainment of Programme Outcomes
	Co-curricular / Extracurricular activities 15%	For participation in Co-curricular / Extracurricular activities during the period of their study.

**Programme Articulation Matrix (PAM)**

Course Code	Course Title	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
Average Direct PO Attainment									
Direct PO Attainment in percentage									

**Indirect Attainment of POs for all Courses**

POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
Graduate Exit Survey								
Indirect PO Attainment								

**Attainments of POs for all Courses**

POs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
Direct Attainment (Weightage - 75%)								
Indirect Attainment (Weightage - 25%)								
Overall PO Attainment								

**Overall PO Attainment= 75% of Direct PO Attainment +  
25% of Indirect PO Attainment (Graduate Exit Survey  
& Participation in Co- curricular and  
Extracurricular Activities)**

**Expected Level of Attainment for each of the Programme Outcomes**

<b>POs</b>	<b>Level of Attainment</b>
Attainment Value $\geq 70\%$	Excellent
$60\% \leq \text{Attainment Value} < 70\%$	Very Good
$50\% \leq \text{Attainment Value} < 60\%$	Good
$40\% \leq \text{Attainment Value} < 50\%$	Satisfactory
Attainment Value $< 40\%$	Not Satisfactory

**Level of PO attainment**

<b>Graduation Batch</b>	<b>Overall PO Attainment (in percentage)</b>	<b>Whether expected level of PO is achieved? (Yes/No)</b>

**B.3.3 Assessment Process for PEOs**

The curriculum is designed so that all the courses contribute to the achievement of PEOs. The attainment of PEOs is measured after 5 years of completion of the programme only through Indirect methods.

**Target for PEO Attainment**

<b>Assessment Criteria</b>	<b>Target (UG)</b>	<b>Target (PG)</b>
Record of Employment	15% of the class strength	30% of the class strength
Progression to Higher Education	50% of the class strength	5% of the class strength
Record of Entrepreneurship	2% of the class strength	5% of the class strength

**Attainment of PEOs**

<b>Assessment Criteria &amp; Tool</b>	<b>Weightage</b>
Record of Employment	10
Progression to Higher Education	20
Record of Entrepreneurship	10
Feedback from Alumnae	30
Feedback from Parents	10
Feedback from Employers	20
<b>Total Attainment</b>	<b>100</b>

$$\begin{aligned} \text{Percentage of PEO Attainment from Employment} &= \frac{\text{Number of Students who have got Employment}}{\text{Target}} \times 100 \\ \text{Percentage of PEO Attainment from Higher Education} &= \frac{\text{Number of Students who pursue Higher Education}}{\text{Target}} \times 100 \\ \text{Percentage of PEO Attainment from Entrepreneurship} &= \frac{\text{Number of Students who have become Entrepreneurs}}{\text{Target}} \times 100 \end{aligned}$$

### Expected Level of Attainment for each of the Programme Educational Objectives

POs	Level of Attainment
Attainment Value $\geq 70\%$	Excellent
$60\% \leq \text{Attainment Value} < 70\%$	Very Good
$50\% \leq \text{Attainment Value} < 60\%$	Good
$40\% \leq \text{Attainment Value} < 50\%$	Satisfactory
Attainment Value $< 40\%$	Not Satisfactory

### Level of PEO Attainment

Graduation Batch	Overall PEO Attainment (in percentage)	Whether expected level of PEO is achieved? (Yes/No)

## C. PROCESS OF REDEFINING THE PROGRAMME EDUCATIONAL OBJECTIVES

The College has always been involving the key stakeholders in collecting information and suggestions with regard to curriculum development and curriculum revision. Based on the information collected the objectives of the Programme are defined, refined and are inscribed in the form of PEOs. The level of attainment of PEOs defined earlier will be analyzed and will identify the need for redefining PEOs. Based on identified changes in terms of curriculum, regulations and PEOs, the administrative system like Board of Studies, Academic Council and Governing Body may recommend appropriate actions. As per the Outcome Based Education Framework implemented from the Academic Year 2020 -2021, the following are the Programme Structure, the Programme Contents and the Course Contents B.Sc. Home Science – Nutrition and Dietetics Programme.





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**VIRUDHUNAGAR**

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## BACHELOR OF SCIENCE HOME SCIENCE – NUTRITION AND DIETETICS (2028)

*Outcome Based Education with Choice Based Credit System*

Programme Structure - Allotment of Hours and Credits

For those who join in the Academic Year 2023-2024

Components	Semester						Total Number of Hours (Credits)
	I	II	III	IV	V	VI	
<b>Part I : Tamil /Hindi</b>	6 (3)	6 (3)	6 (3)	6 (3)	-	-	24 (12)
<b>Part II : English</b>	6 (3)	6(3)	6 (3)	6 (3)	-	-	24 (12)
<b>Part III : Core Courses, Elective Courses &amp;Self Study Course</b>							
Core Course	5 (5)	4 (4)	5 (5)	4 (3)	5 (5)	5(4)	30 (28)
Core Course	-	4(3)	-	3(3)	5 (5)	5 (4)	17 (15)
Core Course	-	-	-	-	5 (4)	5(4)	10(8)
Core Course						4(4)	4(4)
Core Course Practical	3(2)	-	3 (2)	-	3 (2)	-	9(6)
Core Course Project	-	-	-	-	1 (1)	-	1 (1)
Elective Course (DSEC)	-	-	-	-	5(4)	5 (5)	10 (9)
Elective Course (DSEC)	-	-	-	-	4(3)	4(3)	6(4)
Elective Course I (Allied)	4 (3)	4 (3)	-	-	-	-	8(6)
Elective Course I Practical I(Allied)	2(1)	2(1)	-	-	-	-	4 (2)
Elective Course II(Allied)	-	-	6 (4)	6(4)	-	-	12(8)
Elective Course II Practical II(Allied)	-	-	-	-	-	-	-
Self-Study Course	-	-	-	-	-	0 (1)	0 (1)
<b>Part IV: Skill Enhancement Courses, Elective Courses, Environmental Studies, Value Education , Self Study Course &amp;Internship/ Industrial Training</b>							
SEC	2 (2)	-	1 (1)	2 (2)	-	-	5(5)
SEC	-	2 (2)	2 (2)	2 (2)	-	2 (2)	8 (8)
Elective Course(NME)	2 (2)	2 (2)	-	-	-	-	4 (4)
Value Education	-	-	-	-	2 (2)	-	2 (2)
Environmental Studies	-	-	1 (0)	1 (2)	-	-	2 (2)
Self Study Course	-	-	-	-	0 (1)	-	0 (1)
Internship/ Industrial Training	-	-	-	-	0 (1)	-	0 (1)
<b>Part V: Extension Activities</b>	-	-	-	-	-	0 (1)	0 (1)
<b>Total</b>	<b>30 (21)</b>	<b>30 (21)</b>	<b>30 (20)</b>	<b>30 (22)</b>	<b>30 (28)</b>	<b>30 (28)</b>	<b>180 (140)</b>
Extra Credit Course ( Self Study Course)	-	-	-	-	0(2)	-	0(2)

DSEC: Discipline Specific Elective Course

SEC: Skill Enhancement Course

NMEC: Non Major Elective Course



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## B.Sc. Home Science – Nutrition and Dietetics

### SEMESTER V (23-24 onwards)

S.No.	Components		Title of the Course	Course Code	Hours Per Week	Credits	Exam. Hours	Marks		
								Int.	Ext.	Total
1.	Part III	Core Course -9	Dietetics	23UHSC51	5	5	3	25	75	100
2.		Core Course -10	Human Development	23UHSC52	5	5	3	25	75	100
3.		Core Course -11	Nutrition Education and Communication	23UHSC53	5	4	3	25	75	100
4.		Core Course -12 Practical-V	Dietetics Practical	23UHSC51P	3	2	3	40	60	100
5.		Core Course Project-13	Project	23UHSC54PR	1	1	-	100	-	100
6.		DSEC-1	Fibre to Fabric / House Keeping	23UHSE51/ 23UHSE52	5	4	3	25	75	100
7.		DSEC-2	Landscape Design and Ornamental Gardening / Fundamentals of Research in Nutritional Sciences	23UHSE53/ 23UHSE54	4	3	3	25	75	100
8.	Part IV		Value Education	23UGVE51	2	2	2	100	-	100
9.		Self Study Course	Practice for Competitive Examination - Online	23UGCE51	-	1	-	100	-	100
10.		Internship / Industrial Training	Internship	23UHSI51	-	1	-	100	-	100
Total					30	28				1000
11.	Extra Credit Course - Self-Study Course)		Community Nutrition	23UHSO51	-	2	3	100	-	100

**B.Sc. Home Science – Nutrition and Dietetics****SEMESTER VI (23-24 onwards)**

S.No.	Components		Title of the Course	Course Code	Hours Per Week	Credits	Exam. Hours	Marks		
								Int.	Ext.	Total
1.	<b>Part III</b>	Core Course -14	Clinical Nutrition-Theory and Practical	23UHSC61	5	4	3	25	75	100
2.		Core Course -15	Food Service Management	23UHSC62	5	4	3	25	75	100
3.		Core Course -16	Functional Foods for Chronic Diseases	23UHSC63	5	4	3	25	75	100
4.		Core Course-17	Food Safety and Quality Control	23UHSC64	4	4	3	25	75	100
5.		DSEC-3	Principles of Resource Management - Theory and Practical / Quantity Food Production and Service - Theory and Practical	23UHSE61/ 23UHSE62	5	5	3	25	75	100
6.		DSEC-4	Food Preservation – Theory and Practical / Concepts in Apparel Designing	23UHSE63/ 23UHSE64	4	3	3	25	75	100
7.		Self- Study Course	Discipline Specific Quiz - online	23UHSQ61	-	1	-	100	-	100
8.	<b>Part IV</b>	SEC -7	Aptitude and Reasoning Skills for Competitive Examinations	23UHSS61	2	2	2	25	75	100
9.	<b>Part V</b>		Extension Activities		-	1	-	100	-	100
<b>Total</b>					<b>30</b>	<b>28</b>				<b>900</b>



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### B.Sc. Home Science – Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester V	<b>DIETETICS</b>	Hours/Week:5	
Core Course - 9		Credits:5	
Course Code <b>23UHSC51</b>		Internal 25	External 75

#### Course Outcomes

On completion of the course, students will be able to

**CO1:** state the concept of diet therapy, dietitian, antioxidant, artificial sweeteners and various diseases and disorders. [K1]

**CO2:** explain the purpose, importance and types of diet, diet therapy, dietitian, antioxidant, artificial sweeteners and indicate the determination, diagnostic techniques and causes of various diseases and disorders. [K2]

**CO3:** discuss the mode of special feeding, the role of dietitian, antioxidant and artificial sweeteners, and also indicate the clinical manifestations and consequences of various diseases and disorders.[K2]

**CO4:** identify the suitable menu for various diseases and disorders based on the principles, nutritional requirements and dietary considerations. [K3]

**CO5:** plan the suitable feeding techniques and diet for various diseases and disorders. [K3]

#### Unit I

Concept of diet therapy and role of dietitian, Principles of therapeutic diets, modification of normal diet, classification of therapeutic diets.

Different feeding techniques -enteral and parenteral feeding. – Indications, contraindications and complications, Dietitian- Definition, role and code of ethics, classification of dieticians in nutritional care.

[15 Hours]

## **UNIT II**

### **Diseases of Gastrointestinal tract**

Etiology, symptoms, dietary management of: Diarrhoea, dysentery, and constipation

Peptic ulcer, irritable bowel syndrome & inflammatory bowel disease (ulcerative colitis), Crohn's disease and celiac disease [15 Hours]

## **UNIT III**

### **Diseases of liver, gall bladder & febrile conditions**

Etiology, symptoms, dietary management of:

Disease of liver & Gall bladder- Hepatitis, cirrhosis, gall stones Febrile conditions - Acute & Chronic fevers (Typhoid, influenza, malaria, tuberculosis, COVID) [15 Hours]

## **UNIT IV**

### **Metabolic disorders**

Etiology, symptoms, and dietary management of: Obesity and PCOS

Diabetes mellitus- types, symptoms and metabolic changes, treatment with diet and insulin, GI, GL, carbohydrate counting, artificial sweeteners and complications

Cardiovascular diseases – hypertension, atherosclerosis. [15 Hours]

## **UNIT V**

### **Diseases of excretory system and cancer**

Etiology, symptoms, dietary management of: Glomerular nephritis Nephrotic syndrome, urinary calculi, renal failure. Cancer – Risk factors, modification of diet in cancer, nutritional problems of cancer therapy

Role of antioxidants in prevention of degenerative diseases. [15 Hours]

## **SELFSTUDY/EXPERIENTIALLEARNING**

Conduct a group discussion to understand various diseases and presentation of case-studies.

Planning of various low-cost recipes using locally available ingredients for dietetics practical

Conducting a nutrition exhibition to display sample menus for various diseased conditions for different sections of society.

SuggestedActivity

Internship in dietary unit of a hospital

## **References**

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3. Joshi.S.A.(2005),NutritionandDietetics,TataMcGraw-HillPublishingCompanyLimited,NewDelhi
4. PassmoreR.andDavidsonS.(1986)HumannutritionandDietetics.Limingstone publishers
5. Sharma.A.(2017),PrinciplesofTherapeuticNutritionandDietetics,CBSPublishers&DistributorsPvtLtd,NewDelhi.
6. SrilakshmiB,Dietetics(2019),8<sup>th</sup>edition,NewAgeInternationalPublishingLtd, NewDelhi
7. WilliamsS.R,(2000)Basic Nutrition and Diet Therapy, Mosby publication.

## **e-learning resources**

- [https://www.cdss.ca.gov/agedblinddisabled/res/VPTC2/9%20Food%20Nutrition%20and%20Preparation/Types\\_of\\_Therapeutic\\_Diets.pdf](https://www.cdss.ca.gov/agedblinddisabled/res/VPTC2/9%20Food%20Nutrition%20and%20Preparation/Types_of_Therapeutic_Diets.pdf)
- <http://www.differencebetween.net/science/health/difference-between-enteral-and-parenteral-nutrition/>
- [https://www.medicinenet.com/difference\\_between\\_diarrhea\\_and\\_dysentery/article.html](https://www.medicinenet.com/difference_between_diarrhea_and_dysentery/article.html)
- <https://my.clevelandclinic.org/health/diseases/15587-inflammatory-bowel-disease-overview>

## Mapping with Programme Outcomes

Course Code 23UHSC51	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	3	2	2	3	2	1	2	3	-	-
CO2	3	2	2	3	2	2	2	3	-	-
CO3	3	3	2	3	3	2	3	3	-	-
CO4	3	2	2	3	3	3	3	3	-	1
CO5	3	2	2	3	3	3	3	3	-	1

Strong(3) Medium(2) Low(1)

Dr.D.Vijayarani

Head of the Department

Mrs.S.Balasaraswathi  
Mrs. Ameena Beebi  
Course Designers



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(for those who join in 2023- 2024)

Semester - V	<b>HUMAN DEVELOPMENT</b>	Hours/Week:5	
Core Course -10		Credits: 5	
Course Code <b>23UHSC52</b>		Internal 25	External 75

#### Course Outcomes

On completion of the course, students will be able to

**CO1:** state the concept of growth and development, methods of child study, play, discipline,

children with special needs, characteristics and developmental task at various stages of life span. [K1]

**CO2:** explain the areas of growth and development of various stages of life span and the needs and identification of children with special needs. [K2]

**CO3:** write the principles of growth and development and find the changes that occur and care to be taken in various stages of lifespan and also classify the methods of child study, play, disciplinary techniques and children with special needs. [K2]

**CO4:** find the causes and prevention of problems in various stages of lifespan and children with special needs. [K3]

**CO5:** identify the best method of rearing and bringing up an individual at various stages of lifespan and rehabilitation of juvenile delinquency and exception children to achieve positive human relationship. [K3]

#### UNIT I

##### Growth and development

Meaning - growth and development, principles of governing growth and development. Methods of study of human development.

**Infancy** – Characteristics and developmental task, physical, social and emotional development, cognitive and language development and care during infancy (15 hours)



## **UNIT II**

### **Childhood**

Characteristics and developmental task, physical, social and emotional development, cognitive and language development and care during early childhood, and late childhood. Behavioral problems.

Children's play – meaning, types, importance stages. Parental disciplinary techniques – merits and demerits (15 hours)

## **UNIT III**

### **Adolescence**

Adolescence – Characteristics and developmental task, physical and psychological changes, emotional, moral and social development, Problems of adolescence.

Delinquency – causes, prevention, and rehabilitation.

Educational and vocational guidance, role of family and schools and colleges in guiding adolescence (15 hours)

## **UNIT IV**

### **Adulthood and Old Age**

Adulthood - Characteristics and developmental tasks, all aspects of development and vocational adjustments.

Old age - Characteristics of old age, physical changes, psychological changes and care. Place of the aged in Indian Society (15 hours)

## **UNIT V**

### **Exceptional Children**

Introduction to Children with Special Needs, causes, identification, care & Educational Rehabilitation

Gifted children, Orthopedically challenged, Mentally retarded, Hearing impaired

Visually handicapped Learning disability (15 hours)

### **Practical:**

1. Preparation of case study - observing various development- physical, motor, cognitive, creative, social, emotional, and intellectual of a particular child.
2. Socio-metric study of early adolescents.
3. Analysis of various play techniques.
4. Survey on problems of old age.
5. Visit to an institution for exceptional children.

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7. Suriakanthi, A., (2009). Child Development– An Introduction. Tamilnadu: Kavitha publications.

## e- Learning Resources

- [http://www.wbnsou.ac.in/online\\_services/SLM/BED/SEM-01\\_A1.pdf](http://www.wbnsou.ac.in/online_services/SLM/BED/SEM-01_A1.pdf)
- <https://ncert.nic.in/textbook/pdf/kepy104.pdf>
- <https://egyankosh.ac.in/bitstream/123456789/17134/1/Unit-3.pdf>
- [https://www.cukashmir.ac.in/departmentsdocs\\_16/Growth%20&%20Development%20-%20Dr.%20Ismail%20Thamarasseri.pdf](https://www.cukashmir.ac.in/departmentsdocs_16/Growth%20&%20Development%20-%20Dr.%20Ismail%20Thamarasseri.pdf)

## Mapping with Programme Outcomes

Course Code <b>23UHSC52</b>	<b>PO1</b>		<b>PO2</b>		<b>PO3</b>	<b>PO4</b>		<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
	<b>PSO 1.a</b>	<b>PSO 1.b</b>	<b>PSO 2.a</b>	<b>PSO 2.b</b>	<b>PSO 3</b>	<b>PSO 4.a</b>	<b>PSO 4.b</b>	<b>PSO 5</b>	<b>PSO 6</b>	<b>PSO 7</b>
<b>CO1</b>	3	3	2	3	1	1	2	3	-	1
<b>CO2</b>	3	3	2	3	1	2	3	3	-	1
<b>CO3</b>	3	3	2	3	2	2	3	3	-	1
<b>CO4</b>	3	3	2	3	3	3	3	3	-	-
<b>CO5</b>	3	3	2	3	3	3	3	3	-	1

Strong(3)

Medium(2)

Low(1)

Dr.D.Vijayarani

Head of the Department

Dr.D.Vijayarani

Dr.S.Mathangi

Course Designers



# V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Reaccredited with 'A++' Grade (4<sup>th</sup> Cycle) by NAAC

**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

## B.Sc. Home Science - Nutrition and Dietetics

(2023 - 2024 onwards)

Semester-V	<b>NUTRITION EDUCATION AND COMMUNICATION</b>	Hours/Week:5	
Core Course - 11		Credits: 4	
Course Code <b>23UHSC53</b>		Internal 25	External 75

### Course Outcomes

On completion of the course, students will be able to

**CO1:** state the concept of nutrition education, public nutrition, nutritional problems, nutritional status, nutritional assessment, nutritional policies and programmes, community and communication system [K1]

**CO2:** discuss the objectives and scope of nutrition education, nutritional assessment, communication, nutritional policies and programmes. [K2]

**CO3:** explain the types of deficiency diseases, nutritional assessment, nutritional policies and programmes, community and communication system and also write the principles of nutrition education. [K2]

**CO4:** identify the clinical features of various deficiency diseases, communication system, rural and urban community and also importance of nutrition education, nutritional status, communication, nutritional policies and programmes [K3]

**CO5:** write the role and factors influencing nutrition education, nutritional assessment, nutritional policies and programmes and communication to overcome the nutrition related problems [K3]

### UNIT I

Nutrition Education - Importance of Nutrition education, objectives, principles and scope of nutrition and health education and promotion.

Concept and Scope of Public Nutrition Definition, concept, scope and multidisciplinary nature of public nutrition. Principles of nutrition education.

Practical

Calculating nutritive value of school children

(15 hours)

## UNIT II

Nutritional problems affecting the community - Etiology, prevalence, clinical features and preventive strategies for malnutrition related problem and Nutrient deficiency control programmes - Protein energy malnutrition, Obesity, Nutritional anemia, Vitamin A deficiency, Iodine deficiency disorders, Fluorosis.

Practical

Visit to an ongoing nutrition and health promotion program Visit to community health centres.

(15 hours)

## UNIT III

Assessment of Nutritional Status - Objectives and importance, Methods of assessment: Direct (Clinical signs, nutritional anthropometry, biochemical tests, biophysical tests); Indirect (Diet surveys, vital statistics) and Indirect assessment methods of nutritional status. Nutritional Anthropometry. Classified list of signs used in Nutritional Assessment. (15 hours)

Practicals

Assessment of nutritional status:

- Anthropometry: Weight and height measurements
- Plotting and interpretation of growth charts for children below 5 years
- Identification of clinical signs of common nutritional disorders
- Dietary assessment: FFQ and 24 hours recall

## UNIT IV

Nutrition Policy and Programs - National nutritional policy; Integrated child development scheme (ICDS), Midday Meal Program, National programs for the prevention of anemia, Vitamin A deficiency, Iodine deficiency disorders. Implementation of Nutrition Education Program.

National organizations and agencies - FSSAI, ICMR, CFTRI, NSI,

FNB, NIN. International organizations and agencies - FAO, WHO, UNICEF. (15 hours)

Practical

Planning of low-cost nutritious recipes for infants, pre-schoolers, pregnant/lactating mothers for nutrition education.

**UNIT V**

Community - Characteristics of rural and urban community, types of community, community nutrition, community health, Factors affecting community health.

Introduction to Communication - Concept, Elements of Communication, Models of Communication.

Expanding scope of Nutrition Practice.

Communication Systems - Nature, characteristics, and types - Formal and Informal communication, Verbal and Non-verbal Communication, Approaches of Communication - One way-two way, Upward-downward, Horizontal - vertical and Interpersonal Communication - Concept, types and functions of interpersonal communication, Barriers of Communication.

(15 hours)

Practical

Preparing Project report in community nutrition Preparing/ creating a new fortified food menu

**Reference**

1. Jelliffe DB, Jelliffe ERP, Zervas A and Neumann CG (1989). Community nutritional assessment with special reference to less technically developed countries. Oxford University Press. Oxford.
2. Park K (2011). Park's Textbook of Preventive and Social Medicine, 21<sup>st</sup> Edition. M/s Banarasi Das Bhanot Publishers, Jabalpur, India.
3. Suryatapa Das (2016). Textbook of Community Nutrition. Academic Publishers, Kolkata.
4. Wadhwa A and Sharma S (2003). Nutrition in the Community - A textbook. Elite Publishing House Pvt. Ltd. New Delhi.
5. WHO (2006). Child Growth Standards: Methods and development: height-for-age, weight-for-age, weight-for-length, weight-for-height, and body mass index-for-age (<http://www.who.int/childgrowth/standards/en/>).

**e-Learning Resources**

- <https://books.google.co.in/books?id=o5CxDAQAQBAJ&printsec=frontcover#v=onepage&q&f=false>
- <https://nces.ed.gov/pubs/96852.pdf>
- <http://www.fao.org/docrep/017/i3235e/i3235e.pdf>

➤ <http://www.fns.usda.gov/sites/default/files/NutritionEdRTC.pdf>

➤ [http://frac.org/wp-content/uploads/2010/10/providing\\_nutrition\\_education\\_after\\_school.pdf](http://frac.org/wp-content/uploads/2010/10/providing_nutrition_education_after_school.pdf)

### Mapping with Programme Outcomes

Course Code 23UHSC53	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO
	1.a	1.b	2.a	2.b	3	4.a	4.b	5	6	7
CO1	3	3	3	3	3	2	3	3	2	2
CO2	3	3	3	3	3	2	3	3	2	2
CO3	3	3	3	3	3	2	3	3	2	2
CO4	3	3	3	3	3	2	3	3	2	2
CO5	3	3	3	3	3	2	3	3	2	2
<div> <div>Strong(3)</div> <div>Medium(2)</div> <div>Low(1)</div> </div>										

Dr.D.Vijayarani

**Head of the Department**

Mrs. S.Balasaraswathi

Mrs.Ameena Beebi

**Course Designers**



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**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

### B.Sc. Home Science – Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester V	<b>DIETETICS PRACTICAL</b>	Hours/Week:3	
Core Course-12 Practical -V		Credits:2	
Course Code <b>23UHSC51P</b>		Internal 40	External 60

#### Course Outcomes

On completion of the course, students will be able to

**CO1:** trace the diet principles, RDA requirements, foods to be included and excluded for various diseases and disorders. [K2]

**CO2:** select and plan the suitable diet for various diseases and disorders. [K2]

**CO3:** prepare the planned menu for various diseases and disorders. [K3]

**CO4:** write the recommended RDA value, compute the nutritional value for the planned menu of the normal and diseased persons and also prepare the record. [K3]

**CO5:** make use of the recommended nutritive values and obtained nutritive values to write the inference. [K3]

#### Practicals

1. Planning, Calculation of nutrient content, Preparation and Service of diets for: Tube feeds for special conditions Fevers – Typhoid and Tuberculosis
2. Planning, Calculation of nutrient content, Preparation and Service of diets for: Diarrhoea Peptic Ulcer and constipation
3. Planning, Calculation of nutrient content, Preparation and Service of diets for: Viral hepatitis Cirrhosis of liver
4. Planning, Calculation of nutrient content, Preparation and Service of diets for: Obesity
5. Diabetes Mellitus Atherosclerosis
6. Planning, Calculation of nutrient content, Preparation and Service of diets for:
7. Hypertension and Chronic kidney disease

## SELF STUDY/EXPERIENTIAL LEARNING

1. Initiate a diet counseling center in the institution for students, teaching, and non-teaching faculty.
2. Conduct exhibitions to display diets for various disease conditions.
3. Prepare pamphlet indicating foods to be included / avoided/ restricted in different disease conditions.
4. Commemorate days such as World Diabetes Day, World Heart Day and organize Seminars and awareness programs.

## References

1. Antia, F.B. (2010), Clinical Nutrition and Dietetics, Oxford University Press, London.
2. IDA. (2018), Clinical Dietetic Manual, 2<sup>nd</sup> edition, Elite Publishing House, New Delhi
3. Sri Lakshmi. B., (2019) Dietetics, 8<sup>th</sup> Ed, New Age International Pub. Co, Chennai.
4. Vimala V. (2010). Advances in Diet Therapy, 1<sup>st</sup> Ed., National Institute of Nutrition–Hyderabad.
5. Williams S.R, (2000) Basic Nutrition and Diet Therapy, Most by publication.
6. Sharma. A. (2017), Principles of Therapeutic Nutrition and Dietetics, CBS Publishers & Distributors Pvt Ltd, New Delhi.
7. Bajaj. M (2019) Diet Metrics: Handbook of Food Exchanges, Norton Press, Chennai.

## e- Learning Resources

- [https://www.cdss.ca.gov/agedblinddisabled/res/VPTC2/9%20Food%20Nutrition%20and%20Preparation/Types\\_of\\_Therapeutic\\_Diets.pdf](https://www.cdss.ca.gov/agedblinddisabled/res/VPTC2/9%20Food%20Nutrition%20and%20Preparation/Types_of_Therapeutic_Diets.pdf)
- <http://www.differencebetween.net/science/health/difference-between-enteral-and-parenteral-nutrition/>
- [https://www.medicinenet.com/difference\\_between\\_diarrhea\\_and\\_dysentery/article.html](https://www.medicinenet.com/difference_between_diarrhea_and_dysentery/article.html)
- <https://my.clevelandclinic.org/health/diseases/15587-inflammatory-bowel-disease-overview>



## Mapping with Programme Outcomes

Course Code 23UHSC51P	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO
	1.a	1.b	2.a	2.b	3	4.a	4.b	5	6	7
<b>CO1</b>	3	2	2	3	2	1	2	3	-	-
<b>CO2</b>	3	2	2	3	2	2	2	3	-	-
<b>CO3</b>	3	3	2	3	3	2	3	3	-	-
<b>CO4</b>	3	2	2	3	3	3	3	3	-	1
<b>CO5</b>	3	2	2	3	3	3	3	3	-	1
<b>Strong(3)</b>			<b>Medium(2)</b>			<b>Low(1)</b>				

Dr.D.Vijayarani

**Head of the Department**

Mrs. S.Balasaraswathi  
Mrs. Ameena Beebi  
**Course Designers**



## V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

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**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

### B.Sc. Home Science - Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester V	<b>PROJECT</b>	Hours/Week: 1	
Core Course Project-13		Credits:1	
Course Code <b>23UHSC54PR</b>		Internal 100	External -

#### Course Outcomes

On completion of the course, students will be able to

**CO1:** trace the existing problems of the community. [K2]

**CO2:** illustrate the research design for the study and carry out it. [K2]

**CO3:** make use of the collected data to prepare the research report. [K3]

**CO4:** find the results and infer it. [K3]

**CO5:** make use of the research findings in the community which in turn helpful for human upliftment. [K3]

Candidate is expected to select a project in the field of Home Science and related fields. The report on the completed project work shall be submitted to the department in the month of November during V semester. Two typed copies (one for candidates and one for Department) of the project report will be submitted to the COE through the Head of the department. Evaluation will be done internally. Minimum pages for project report should be 20 pages. The number of students for each project is two.

Project work and Report - 60 marks

Presentation and Viva-voce - 40 marks

Dr.D.Vijayarani

**Head of the Department**

Dr.D.Vijayarani

**Course Designer**



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### B.Sc. Home Science - Nutrition and Dietetics (Semester)

(for those who join in 2023- 2024)

Semester V	<b>FIBRE TO FABRIC</b>	Hours/Week:5	
DSEC -I		Credits: 4	
Course Code <b>23UHSE51</b>		Internal 25	External 75

#### Course Outcomes

On completion of the course, students will be able to

**CO1:** describe the concept and importance of textile fibres, yarn, weaving, knitting, non-woven fabric, dyeing, printing and finishes. [K1]

**CO2:** classify the types of textile fibre, yarn, weaving, knitting, non-woven fabric, dyeing, printing, finishes and colour fastness testing methods.[K2]

**CO3:** write the processing of textile fibres, yarn, weaving, knitting, non-woven fabric, dyeing, printing and finishes [K2]

**CO4:** identify the properties of textile fibres and yarn, qualities of fabric, factors to be considered in selection of fabric for weaving, dyeing and printing [K3]

**CO5:** find the uses and effect of yarn making, weaving, knitting, non-woven, dyeing, printing and finishes on fabric and select the suitable dyeing, printing and finishes for different fabrics.[K3]

#### UNIT I

**Introduction to Textile-** Introduction, Terms and definition related to textiles, importance of textiles.

Fibre – meaning, classification, general properties - primary and secondary properties and identification of textile fibres. . (15 hours)

#### Textile fibres

- Classification of fibres– natural and man-made fibres. Manufacturing processes/Cultivation,
- properties and uses of Cotton, Silk, Wool, Polyester, Rayon and Nylon. (15 hours)

## UNIT II

### Yarns

- a) Definition of yarn
- b) Spinning process- Conventional yarn spinning- Cotton system and Unconventional yarn spinning.
- c) Types of yarn- spun yarns, filament yarns, sewing threads, simple and complex yarns.
- d) Properties of yarn- Yarn twist, Yarn count/number (definition, unit of yarn count), Texturization–types. (15 hours)

## UNIT III

### Woven Fabric Construction

- a) Weaving- Warp and weft yarns, grain line, selvedge and Fabric count.
- b) Parts of a simple loom and basic weaving operations.

Types of weaves- Basic weaves (Plain weave, variations in plain weave, Twill weave, variations in Twill weave, Satin weave and Sateen weave) Decorative weaves (Dobby weave, Jacquard weave, Leno weave, Surface figure weave, Pile, Double weave) (15 hours)

## UNIT IV

### Other fabric construction

- a) Knitted fabric- warp and weft knitting
- b) Non-Woven fabric- method of manufacture – web formation- parallel laid, cross laid, random laid, high velocity sprayed. Types- bonded fabrics, felts and care of non-woven. Other fabric construction process- Braided fabric, Net, Laces, Film fabric, tufted fabric. Factors influencing the choice of clothes – different age groups, sex, income, family size, occupation, customs and tradition, climate, fashion, occasion and suitability. (15 hours)

## UNIT V

Finishing- definition, need, types- Basic finishes - boiling, bleaching, desizing, weighing, degumming, mercerizing, texturising and calendaring. Special finishes- shrinkage control, water repellency, wrinkle resistance, permanent press, water proof and water resistant – moth proof, mildew

proof and chemical finishes - acid and alkali finishes. Evaluation of finishes.

Dyeing and Printing - classification of dyes and their suitability to different fibres and methods of dyeing. Printing – hand printing- stencil, block, tie and dye and batik. Machine Printing – process and types - roller, screen and stencil. . (15 hours)

### **Practicals**

Identification of fibres.

Identification of yarns

Identification of weaves –Collection of samples for basic weaves.

Field visits to various textiles units

### **Reference**

1. Corbman,B.P(1975)Textilesfibertofabric.Mc.Grawhill,New York.
2. KleinW.DAPractical GuidetoRingSpinningTextile Institute,Manchester
3. MarjoryL.J(1977)IntroductoryTextileSciencesHoltReinhartandWinston,NewYork
4. Sara.K.J,Langford.A(2002)Textiles.9<sup>th</sup>edPrenticeHall,London
5. Rastogi,D.,&Chopra,S.(2017).TextileScience.India:OrientBlackswanPrivateLimited.
6. Robert,R.&Mather,R.H.(2015).TheChemistryofTextileFibers.Cambridge:RSC Publishers.
7. Sekhri,S.(2011)TextbookofFabricScience:FundamentalstoFinishing.India:PHILearningPvt.Ltd.
8. Smith,J.L.(2015).TextileProcessing:PrintingDyeingFinishing.Chandigarh:AbhishekPublication.

### **e- Learning Resources**

- <http://fibersource.com/f-tutor/rayon.htm>
- <http://www.fibersource.com/f-tutor/nylon.htm>
- <http://www.ehow.com/facts5016460parts-loom.html>
- <http://www.fabrics-manufacturers.com/>
- <http://www.fabrics-manufacturers.com/>

## Mapping with Programme Outcomes

Course Code 23UHSE51	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO
	1.a	1.b	2.a	2.b	3	4.a	4.b	5	6	7
CO1	3	2	2	3	2	1	2	3	-	-
CO2	3	2	2	3	2	2	2	3	-	-
CO3	3	3	2	3	3	2	3	3	-	-
CO4	3	2	2	3	3	3	3	3	-	1
CO5	3	2	2	3	3	3	3	3	-	1
<div> <div>Strong(3)</div> <div>Medium(2)</div> <div>Low(1)</div> </div>										

Dr.D.Vijayarani

**Head of the Department**
 Dr.S.Mathangi  
 Mrs. Ameena Beebi  
**Course Designers**



## V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

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**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

### B.Sc. Home Science–Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester V	<b>HOUSE KEEPING</b>	Hours/Week:5	
DSEC- 1		Credits:4	
Course Code <b>23UHSE52</b>		Internal 25	External 75

#### Course Outcomes

On completion of the course, students will be able to

CO1: discuss the concept of guest room and housekeeping department [K1]

CO2: describe the types of guest room and housekeeping department [K2]

CO3: explain the importance, functions and organisational structure of housekeeping department.[K2]

CO4: identify the various duties and responsibilities, linen management and laundry operation in housekeeping department.[K3]

CO5: find the appropriate layout of the housekeeping department, cleaning agents, equipment, safety and security procedure, pest and pest control measures.[K3]

#### UNIT I

**Housekeeping Department** - Importance of housekeeping, Duties and Responsibilities of Housekeeping Department. Organizational Structure, types of lodging establishments. Job Description and Job Specification of staff in the department. Layout of the department, Personal Attributes. Qualities of the Housekeeping staff - skills of a good Housekeeper. (15 hours)

**Activity:** Prepare working schedule for a hotel 10 suites.

#### UNIT II

##### Housekeeping co-ordination and Procedures

Briefing, Debriefing, Gate pass, Inter departmental Co-ordination with more emphasis on Front office and the Maintenance department. Indenting from stores- Inventory of Housekeeping Items, Housekeeping control desk, Importance, Role, Co-ordination, check list, key control, Handling Lost and Found, Forms, Formats and registers used in the Control Desk, Paging systems and methods,

Handling of Guest queries, problem, request. General operations of control desk, Role of control desk during Emergency. (15 hours)

**Activity:** Maintaining various house keeping records and documents.

### UNIT III

**Hotel Guest room** - Importance of the Guestroom to a Guest, Types of guest rooms, Guest Supplies/Amenities in a guest room, Bed making procedures and types.

Different types and importance of keys – section key, master key, floor key and grand master key. Key of executive offices and public areas and computerized key.

Pest control and eradication – with special reference to rats, cockroaches, furniture beetle, clothes moth, etc.

Dealing with emergency like fire, death, theft, accidents, safety security control. (15 hours)

**Activity:** Prepare layout diagram containing furniture and decorative items arrangement in front office, restaurants and guestrooms.

### UNIT IV

#### **Linen/ Uniform / Sewing Room**

Its importance in hotels, selection and buying of linen, inspecting, Storage Facilities, receiving used linen.

Linen stock for any establishment, Layout, Types of Linen, sizes and Linen exchange procedure, and conditions, Linen Inventory system.

Uniform designing: Importance, selection, characteristics, and types. (15 hours)

**Activity:** Practice of Ironing, storing, cleaning and discarding of linen.

### UNIT V

#### **Housekeeping Inventories**

Introduction, Cleaning equipment – Selection of equipment.

Manual Equipment - brooms and brushes, protective equipment, cloths used in cleaning and box sweeper.

Mechanical equipment - electric equipment, vacuum cleaner, floor scrubbing and polishing machine, floor shampooing machine, containers trolley, chambermaid's trolley, etc.

Cleaning Agents – Water, Detergents, Abrasives, Reagents, Organic Solvents, Disinfectants and Bleaches, Glass Cleaners, Laundry Aids, Toilet Cleaners, Polishes, Floor sealers and Carpet Cleaners, characteristics of a good cleaning agent. Selection, Storage and Issuing of Cleaning Agents. (15 hours)

**Activity:** Demonstrate Cleaning and polishing of various surfaces, hard flooring, semi-hard floorings, and wooden flooring.



## References

1. Aleta Nitschke (2008) “Managing Housekeeping Operations” Educational Inst Of The AmerHotel; Revised Edition, Isbn-13 : 978-0866123365
2. G. Raghubalan (2015) “Hotel Housekeeping: Operations and Management” 3e Oxford University Press India, Isbn-13 978-0199451746
3. Jatashankar Tewari (2016), “Hotel Front Office 2E: Operations and Management” Oxford University Press; Third Edition
4. Nishant Pal (2022) “Accommodation Operations: Introduction to Housekeeping and Hotel Guest Room, Guest Services, Housekeeping Control Desk, Linen Room” Kindle Edition.
5. [Reeta Pal](#) and [Nishant Pal](#) (2022), Housekeeping - Housekeeping Procedures, Hotel Guest Room, Housekeeping Manpower Planning, Cleaning Science and Managing Quality Service, Kindle Edition.

## e-Learning Resources

- <https://www.ihmnotes.in/assets/Docs/Books/9780199451746.pdf>
- <https://www.slideshare.net/SatyajitRoy21/personal-attributes-of-housekeeping-staff-62900148>
- <https://www.slideshare.net/96vidya/duties-and-responsibilities-of-an-executivehousekeeper>
- <https://www.ihmnotes.in/assets/Docs/Sem-3&4/Accommodation/Ch-1,%20Linen%20Room.pdf>
- <http://kubershah.blogspot.com/2017/04/uniform-room.html>

## Mapping with Programme Specific Outcomes

Course Code 23UHSE52	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	3	2	1	2	-	-	-	2	-	2
CO2	3	2	1	2	-	1	1	2	-	-
CO3	3	1	2	2	1	1	1	2	-	-
CO4	3	1	2	2	3	1	3	2	-	2
CO5	3	2	2	2	3	2	3	2	-	1

**Strong(3)      Medium(2)      Low(1)**

Dr.D. Vijayarani

**Head of the Department**

Mrs.T.Devi  
Mrs.R.Subha  
**Course Designers**



## V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

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**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

### B.Sc. Home Science – Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester V	<b>LANDSCAPE DESIGN AND ORNAMENTAL GARDENING</b>	Hours/Week: 4	
DSEC-2		Credits: 3	
Course Code <b>23UHSE53</b>		Internal 25	External 75

#### Course Outcomes

On completion of the course, students will be able to

CO1: state the concept and importance of landscape design, ornamental garden, and garden styles, indoor and outdoor plans [K1].

CO2: explain the types of landscape garden, ornamental garden, special garden and plants and also the principles of design in landscaping [K2].

CO3: indicate the requirements for landscaping, gardening and planting [K2].

CO4: identify the properties of soil, components of garden and factors influencing the growth of garden [K3].

CO5: write the plan for landscape designing, ornamental gardening, special gardening, indoor and outdoor plants [K3].

#### UNIT I

Landscape Design -Definition, Importance and Principles of Design in Landscaping. Requirements in Landscape Area- Site & Location, Site Evaluation, Soil Properties, Water Systems, Climatic Conditions and Lighting. Public and Private Garden. Importance of Kitchen Garden. (12 hours)

#### UNIT II

Ornamental Garden - Definition, Components of Garden- Arboretum. Shrubbery, Fernery, Arches and Pergolas, Edges and Hedges. Integral Elements of Garden- Climbers and Creepers, Cacti & Succulents, Herbs, Annuals & Perennials, Flower Borders & Beds. Supplementary Elements of Garden- Ground Covers, Carpet Beds, Bamboo Grooves, Topiary and Garden Adornments. (12 hours)

### UNIT III

Styles and Types of Landscape Garden - Garden Styles: Formal, Informal and Freestyle, Wild Gardening, Types of Gardens: Persian, Mughal, Japanese, English, Italian, Buddha and Spanish garden. (12 hours)

### UNIT IV

Special Types of Gardens - Vertical Garden, Roof Garden, Bog Garden, Sunken Garden, Rock Garden, Clock Garden, Bonsai Gardens, Temple Garden & Sacred Groves.

(12 hours)

### UNIT V

Indoor-Outdoor Plants - Kinds and Classification, Factors Influencing Growth of Plants. Planning and Execution of Landscape Design Based on the Styles and Kinds of Plants.

(12 hours)

### EXPERIENTIAL LEARNING

Preparation of home garden designs. Identifying and Selection of ornamental plants. Practices in preparing any one style of garden design. Visit to parks and botanical gardens.

### References

1. A K Tiwari (2012) Fundamentals of Ornamentals Horticulture and Landscape Gardening, NIPA publisher
2. Alka singh (2015) A colour handbook: Landscape gardening, NIPA publisher
3. Desh raj (2017) Floriculture at a glance, Kalyani publishers
4. G. S. Randhawa, A.N. Mukhopadhyay, A. Mukhopadhyay (1998) Floriculture in India, Jaideep publishers Delhi.
5. Harikrishnan Paliwal (2013) Ornamental Gardening- A user's Companion, Jain Publishing Company, New Delhi
6. M Kannan , P Ranchana , S Vinodh (2016) Ornamental Gardening and Landscaping, New India publishing agency

### e-Learning Resources

- [http://www.megagriculture.gov.in/PUBLIC/floriculture\\_objectives.aspx](http://www.megagriculture.gov.in/PUBLIC/floriculture_objectives.aspx)
- <http://ncert.nic.in/vocational/pdf/kegr101.pdf>
- [http://agritech.tnau.ac.in/horticulture/horti\\_Landscaping\\_freshflower.html](http://agritech.tnau.ac.in/horticulture/horti_Landscaping_freshflower.html)
- <https://www.basicsofgardening.com/types-of-garden>
- [https://www.designcad.com.au/wp/Docs/Landscape%20Design%20and%20CA\\_D.pdf](https://www.designcad.com.au/wp/Docs/Landscape%20Design%20and%20CA_D.pdf)

## Mapping with Programme Outcomes

Course Code 23UHSE52	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
<b>CO1</b>	3	2	3	2	2	2	2	-	3	2
<b>CO2</b>	3	2	3	2	2	3	2	-	3	1
<b>CO3</b>	3	2	3	3	3	3	3	-	2	3
<b>CO4</b>	2	2	2	2	2	3	3	-	2	1
<b>CO5</b>	3	3	3	3	3	3	3	1	2	1

**Strong 3 Medium 2 Low 1**

Dr.D.Vijayarani

**Head of the Department**

Mrs.S.Balasaraswathi

Dr.R.Sreebha

**Course Designers**



## V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Reaccredited with 'A++' Grade (4<sup>th</sup> Cycle) by NAAC

**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

### B.Sc. Home Science - Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester V	<b>FUNDAMENTALS OF RESEARCH IN NUTRITIONAL SCIENCES</b>	Hours/Week: 4	
DSEC-2		Credits: 3	
Course Code <b>23UHSE54</b>		Internal 25	External 75

### Course Outcomes

On completion of the course, students will be able to

CO1: describe the concept of research, research design, sampling, data collection, coding, data analysis and report writing [K1].

CO2: explain the types of research design, sampling techniques, data, data collection, data presentation, statistical analysis and bibliographic styles to pursue research [K2].

CO4: discuss the significance, advantages, disadvantages and challenges of the research process to overcome scientific research problems [K2].

CO3: find the data collection tools, statistical tools, sources of data, data manipulation and interpretation of data for the research in nutrition [K3].

CO5: identify the procedure for identifying research problem, construction of research design, sampling, data processing and report writing [K3].

### UNIT I

Introduction to research

Research- Meaning, objectives, significance.

Research problem- Definition and selection of research problem. Research design –Types of research design

Method of sampling - probability and non-probability sampling – Merits and Demerits

Determining sample size (12 hours)

## **UNIT II**

Data Collection - Primary and secondary data, selection of appropriate method for data collection.

Tools used for data collection- Questionnaire and Interview schedule (12 hours)

## **UNIT III**

Coding and tabulation of data

Data entry and computation, Tabulation of data – parts of the table

Presentation of data- use of bar graph and pie chart (12 hours)

## **UNIT IV**

Basic statistical tools for analysis and interpretation Measures of central tendency – Mean, Median, Mode. Variations-the range and standard deviation (12 hours)

## **UNIT V**

Correlation –Karl Pearson's coefficient of correlation Test of significance- Student's t test

Report writing - Steps in report writing, Layout of a report. Bibliography-citing references-any one style.

(12 hours)

## **EXPERIENTIAL LEARNING**

Carry out a small survey, code and tabulate data and present data using tables and graphs. Interpret data using simple statistical tools and present report following rules for report writing.

## **References**

1. Kerlinger F. N. and Lee, H.B. (2000) Foundations of Behavioural Research 4<sup>th</sup> Ed. Harcourt College Publishers.
2. Kothari, C.R. (2019). Research methodology methods and techniques, New Age International publishers, New Delhi.
3. Kumar, R. (2005) Research Methodology: A Step-by-Step Guide for Beginners. Sage Publications, New Delhi.
4. Goode, WJ and Hatt, PK (1981) Methods in Social Research, McGrawHill International Editions, Sociology Series.
5. G. Vijayalakshmi, C. Sivapragasam. (2019). Research Methods Tips and Techniques. New Delhi: MJP Publisher.

6. Kothari ,G.R.(2019). Research Methodology Methods and Techniques, New Delhi: Wiley Eastern Limited.
7. Peer Mohamed and Shazuli Ibrahim.(2015). Research Methodology.Madurai :Pass publications.
8. Gupta, S.P. (2019) Statistical methods. 46th ed. Sultan Chand and Co, New Delhi.
9. Agarwal,B.L. (2023). Basic Statistics, 8 th edition, New Delhi: New Age International Publishers.
10. Gupta, S.P. (2021). Statistical Methods, New Delhi: Sultan Chand and Sons.
11. Gurumani,N. (2021). An Introduction to Biostatistics, Chennai: MJP Publishers.
12. Pillai, R.S.N. and Bagavathi (2016).Statistics Theory and Practice.8 th edition, New Delhi: Chand and Company Ltd.
13. Rajathi, A. and Chandran, P. (2016). SPSS for You, Chennai: MJP Publishers.

### e-Learning Resources

- <http://www.socialresearchmethods.net/tutorial/mugo/tutorial.htm>
- [https://ebooks.lpude.in/library\\_and\\_info\\_sciences/MLIS/year\\_1/DLIS401\\_MET\\_HO\\_DO\\_LOGY\\_OF\\_RESEARCH\\_AND\\_STATISTICAL\\_TECHNIQUES.pdf](https://ebooks.lpude.in/library_and_info_sciences/MLIS/year_1/DLIS401_MET_HO_DO_LOGY_OF_RESEARCH_AND_STATISTICAL_TECHNIQUES.pdf)
- <https://mfs.mkcl.org/images/ebook/Fundamental%20of%20Research%20Methodology%20and%20Statistics%20by%20Yogesh%20Kumar%20Singh.pdf>

### Mapping with Programme Outcomes

Course Code	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
23UHSE54										
CO1	3	2	3	2	2	2	2	-	3	2
CO2	3	2	3	2	2	3	2	-	3	1
CO3	3	2	3	3	3	3	3	-	2	3
CO4	2	2	2	2	2	3	3	-	2	1
CO5	3	3	3	3	3	3	3	1	2	1

**Strong 3 Medium 2 Low 1**

Dr.D.Vijayarani

**Head of the Department**

Dr.R.Sreebha

Mrs.A.Jeevarathinam

**Course Designers**



## V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

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**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

### B.Sc. Home Science - Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester V	<b>Internship</b>	Hours/Week: -
PART IV		Credit: 1
Course Code- <b>23UHSI51</b>		Internal 100

#### Course Outcomes

On completion of the Internship, students will be able to

- CO1: discuss the procedure followed in the dietary department of the hospital, nutritional assessment techniques and clinical manifestations of the patients. [K2]
- CO2: plan and prepare the routine hospital and special feeding diet for the diseased persons based on the diet principles and RDA recommended by ICMR. [K3]
- CO3: make use of ICMR recommended RDA value and compute the nutritional value for the planned menu of the diseased persons. [K3]
- CO4: identify the nutritive values for the planned menu and infer the result and prepare the record.[K3]
- CO5: examine the suitable therapeutic diet for the patients to improve the health status. [K4]

#### Guidelines/ Regulations:

- ❖ Each student must go for Internship training in a reputed Hospital (Dietary department) / Industry / Company / Organization/ Educational Institution.
- ❖ Students should produce the completion certificate after the completion of Internship period.
- ❖ A report of 10-15 pages must be submitted by each student after the completion of the Internship period.
- ❖ Internal Viva-voce examination will be conducted.
- ❖ Students with diverse disabilities must complete a 10 day internship programme at their preferred places.



## Mapping with Programme Outcomes

<b>Course Code 23UHSI51</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>
<b>CO1</b>	3	2	2	2	2	3	-
<b>CO2</b>	3	2	2	2	2	3	
<b>CO3</b>	3	2	-	-	-	3	
<b>CO4</b>	3	3	2	2	-	2	3
<b>CO5</b>	3	2	3	3	2	-	

Dr.D.Vijayarani  
**Head of the Department**

Dr.D.Vijayarani  
**Course Designer**



# V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

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**VIRUDHUNAGAR**

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## B.Sc. Home Science - Nutrition and Dietetics (Semester)

(for those who join in 2023- 2024)

Semester V	<b>COMMUNITY NUTRITION</b>	Hours/Week:-	
Extra Credit Course		Credits: 2	
Course Code <b>23UHSO51</b>		Internal 100	External -

### Course Outcomes

On completion of the course, students will be able to

CO1: state the concept of community nutrition, malnutrition, healthcare, nutrition monitoring, nutrition education, food and nutrition security.

CO2: identify the causative factors and consequences of the nutrition and health problems in the community.

CO3: describe the methods to assess the nutritional status and intervention programmes to combat nutritional problems of the community.

CO4: illustrate the frame work for health care system, food security, nutrition security, nutrition surveillance system and nutrition education.

CO5: analyse the role of food security, nutritional assessment, nutrition education and public nutritionists in prevention of nutritional problems.

### UNIT I

Community nutrition - definition, factors influencing community nutrition and health.

Health Care - concept, levels and primary health care.

Health care delivery system – definition, meaning, principles. Health system in India - central, state, district, block and village levels.

Role of public nutritionists in health care delivery

### UNIT II

Malnutrition - meaning, definition, types, risk, aetiology, prevalence of malnutrition, poverty - malnutrition interaction, consequences, impact of malnutrition on national development, indicators of malnutrition and prevention of malnutrition.

### **UNIT III**

Food Security - definition, meaning, dimensions, determinants of food security, framework for assessment of food security, food security system in India.

Nutrition security - definition, meaning, inputs, factors underlying the current status of food and nutrition security - Global perspective and Indian perspective, principles of ensuring food and nutrition Security.

### **UNIT IV**

Nutrition monitoring and surveillance - objectives, components, nutrition monitoring and surveillance system in India.

Nutritional assessment methods – objectives, types - anthropometric measurement, clinical method, biochemical analysis and diet survey.

### **UNIT V**

Nutrition education – definition, importance, components, steps and methods – individual, group and mass.

### **References**

1. Boyle, M.A. (2016). Community nutrition in action: An entrepreneurial approach, 7th edition, USA: Brooks cole publishers.
2. Das, S. (2020). Text book of community nutrition, Kolkata: Academic publishers.
3. Edelstein, S, (2010). Nutrition in public health: A handbook for developing programmes and services, 3rd edition, USA: Jones and bartlett publishers.
4. Park, A. (2015). Textbook of preventive and social medicine, 23rd edition, India: Bhanot publishers.
5. Srilakshmi, B. (2016). Human nutrition, Delhi: New age international pvt ltd.

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**VIRUDHUNAGAR**

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### B.Sc. Home Science – Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester VI	<b>CLINICAL NUTRITION – THEORY AND PRACTICAL</b>	Hours/Week:5	
Core Course-14		Credits:4	
Course Code <b>23UHSC61</b>		Internal 25	External 75

#### Course Outcomes

On completion of the course, students will be able to

**CO1:** state the definition and concept of various diseases and disorders. [K1]

**CO2:** explain the various types of diseases and disorders. [K2]

**CO3:** describe the causes and consequences of various diseased conditions. [K2]

**CO4:** identify the clinical manifestations of various diseased conditions and biochemical role of nutrients in metabolism. [K3]

**CO5:** find the nutritional implications and recent advances in various diseased conditions. [K3]

#### UNIT I

##### Biochemical changes due to disorders of metabolism

Metabolic and Nutritional implications in Diabetes mellitus, Inborn errors of metabolism – Gout, phenylketonuria, Galactosemia, Lactose intolerance, Ageing – physiological changes with ageing. Cellular adaptations to stress.

(15 hours)

#### UNIT II

##### Cardiovascular Disorders

Metabolic and Nutritional implications of Myocardial infarction, atherosclerosis hyperlipidaemia, hypertension, metabolic syndrome, Role of lipids in cardiovascular disease and Recent advances.

(15 hours)

#### UNIT III

##### Digestive System, Liver and Pancreatic Disorders

Metabolic and Nutritional implications of Diarrhoea, constipation. Gastritis, ulcers, colitis, malabsorption syndrome, celiac disease, Inflammatory bowel disease, Irritable bowel syndrome, Diet and gut microflora. Recent advances.

Metabolic and nutritional implications of Hepatitis. Cirrhosis of liver, Hepatic coma, Pancreatitis, Cholecystitis and Cholelithiasis. Recent advances (15 hours)

## UNIT IV

### Renal Disorders

Metabolic and nutritional implications of Nephritis, Nephrotic syndrome, Renal Transplant, Nephrolithiasis and Dialysis. Role of kidney in Water and Electrolyte Balance and Imbalance. (15 hours)

## UNIT V

### Carcinogenesis

Carcinogens in Food, Types of cancer, Causes, pathogenesis, cancer cachexia, Effect of cancer on metabolism and nutritional status, Recent developments in nutrition and cancer. (15 hours)

### Practicals

1. Analysis of urine
2. Collection of blood and separation of plasma and serum
3. Estimation of blood glucose
4. Estimation of total protein
5. Determination of A/G ratio
6. Estimation of serum urea
7. Estimation of serum creatinine
8. Estimation of cholesterol
9. Estimation of bilirubin

### References

1. Schlenker, E., & Gilbert, J. A., (2018), Williams' Essentials of Nutrition and Diet Therapy-E-Book. Elsevier Health Sciences.
2. Wardlaw, GM., (2004), Contemporary Nutrition, 2nd edition, Mosby Publishing.
3. Rolfes, S. R., Pinna, K., & Whitney, E. (2020), Understanding normal and clinical nutrition, Cengage learning.
4. Carol Byrd – Bredbenner, (2013), Wardlaw's perspectives in Nutrition, 9th edition McGraw – Hill International Edition.
5. Mahan L.K., Sylvia Escott-Stump, (2012), Krause's Food Nutrition and Diet Therapy, 13th edition, W.B. Saunders Company, London.
6. Srilakshmi B., (2014), Dietetics, 7th edition, New Age International Pvt. Ltd. New Delhi.
7. Antia F.P., Abraham P, (2002), Clinical Dietetics, 4th edition, Oxford Publishing Company.
8. Whitney, E., & Rolfes, S. R., (2018), Understanding nutrition. Cengage Learning.

### e - Learning References

- <https://www.nutrition.gov/>
- <https://nutrition.org/>
- [Nutrition Resources for Online Learning \(healthyeating.org\)](https://www.healthyeating.org/)

## Mapping with Programme Outcomes

Course Code 23UHSC61	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	3	1	-	1	1	2	2	1	-	1
CO2	3	1	-	1	3	3	2	2	-	2
CO3	3	1	-	1	3	3	2	2	-	2
CO4	3	1	-	1	3	3	3	3	-	3
CO5	3	1	-	1	3	3	3	3	-	3

**Strong(3)      Medium(2)      Low(1)**

Dr.D.Vijayarani

**Head of the Department**

Mrs.T.Devi

Ms.S.Vaishnavi

**Course Designers**



## V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

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**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

### B.Sc. Home Science– Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester VI	<b>FOOD SERVICE MANAGEMENT</b>	Hours/Week:5	
Core Course-15		Credits:4	
Course Code <b>23UHSC62</b>		Internal 25	External 75

#### Course Outcomes

On completion of the course, students will be able to

CO1: describe the concept of food service organization, personnel, food, physical plant, equipment and financial management, hygiene, sanitation, safety and state the principles of food service establishment [K1]

CO2: explain the different types of food service establishment, training, leadership style, storage, equipment, hygiene, pest and cost. [K2]

CO3: discuss the functions of various food service management [K2]

CO4: write the organization tools and methods of personnel management, food management, pest control, financial management, hygiene, sanitation and safety management in food service establishments. [K3]

CO5: identify the management tools for effective functioning of organization, labour laws, factors affecting food management, physical plant, equipment and financial management. [K3]

#### UNIT I

##### Organisation Management

Types of Organisation, Management - definition, principles, functions and tools of management- Tangible tools-organization chart, job description, job specification, job analysis, work schedule, Intangible tools-budget, leadership styles, decision making, and communication skills.

(15 hours)

#### UNIT II

##### Personnel Management

Definition, functions of personnel department, Recruitment- sources, Selection- steps, Induction - definition, methods, uses, Training- advantages, methods, supervision, performance appraisal,

promotion, demotion, transfer, retirement, termination and dismissal of employees. Labor laws pertaining to the food service establishment

(15 hours)

### **UNIT III**

#### **Food Management**

Food purchase – purchasing process, functions of food buyer, methods of buying open market, formal, negotiated, wholesale, blanket order, contract. Storage in food service – types of stores, storeroom management, purchase, stores records- Physical and perpetual inventory order form, requisition slip, invoice, goods received book, stock book, bin card, stores ledger.

(15 hours)

### **UNIT IV**

#### **Plant and Equipment Management**

Planning of food service unit - Layout of a food service, planning of storage, production and service areas, concepts of workflow and work simplification technique. Environmental hygiene-pest control- types of pests and pest control methods; garbage disposal method.

Safety in food service institution - Accidents - causes and prevention.

Equipment in food service - Classification of equipment, factors affecting selection of equipment.

(15 hours)

### **UNIT V**

#### **Financial Management**

Book- keeping – definition, advantages of double entry system, books of accounts– an introduction.

Costing and Cost control: Basic cost concepts – elements of cost (material, labour, overheads), behavior of cost (fixed, variable, semi-fixed / semi-variable), methods of costing (Dish, meal, menu costing & costing for events), cost control, concept of break-even, break-even point.

Pricing - factors affecting pricing, pricing methods (cost plus, factor, rate of return, subsidy, discount).

(15 hours)

### **SELF STUDY/EXPERIENTIAL LEARNING**

1. Group discussion and power point presentation, job descriptions, recruitment advertisements in print media / online sites.
2. Prepare resumes for job interview and conducting of mock interview.
3. Role plays of different leadership skills.



## References

1. Andrews and Sudhir. (2000). Introduction to Hospitality Industry, Tata-McGraw Hill Pub. Co., New Delhi.
2. Dhawan and Vijay. (2001). Food and Beverage Service, Frank Boss and Co, New Delhi.
3. Foskett David. (2011). The Theory of Hospitality and Catering, Hodder Education, London.
4. Lillicarp, D.R. and Cousins, J. (2010). Food and beverage Service, 8<sup>th</sup> edition, Hodder Education, London.
5. Sethi, Mohini, Malhan, Surjeet. (2015). Catering Management – An Integrated Approach, 3<sup>rd</sup> ed, New Age International Publishers, New Delhi.
6. Suganthi, V and Premakumari, C. (2017). Food Service Management, Dipti Press (OPC) Pvt. Ltd, Chennai.
7. Verghese and Brian. (2000). Professional Food and Beverage Service Management, Macmillan India Ltd., India.

## e- Learning Resources

- <http://open.lib.umn.edu/principlesmanagement/chapter/1-5-planning-organizing-leading-and-controlling-2/>
- [https://www.managementstudyguide.com/management\\_functions.htm](https://www.managementstudyguide.com/management_functions.htm)
- <http://www.bngkolkata.com/web/food-and-beverage-service-equipment/>
- <http://www.fcijammu.org/food/food/orders/F&B%20Service-Unit-2.pdf>
- <https://www.scribd.com/doc/29362905/Equipments-in-Food-and-Beverage>

## Mapping with Programme Outcomes

Course Code 23UHSC62	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	3	2	1	2	-	-	-	2	-	2
CO2	3	2	1	2	-	1	1	2	-	-
CO3	3	1	2	2	1	1	1	2	-	-
CO4	3	1	2	2	3	1	3	2	-	2
CO5	3	2	2	2	3	2	3	2	-	1

**Strong(3)      Medium(2)      Low(1)**

Dr.D.Vijayarani

**Head of the Department**

Mrs.T.Devi

Mrs.R.Subha

**Course Designers**



## V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

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**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

### B.Sc. Home Science – Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester VI	<b>FUNCTIONAL FOODS FOR CHRONIC DISEASES</b>	Hours/Week: 5	
Core Course -16		Credits: 4	
Course Code <b>23UHSC63</b>		Internal 25	External 75

#### Course Outcomes

On completion of the course, students will be able to

- CO1. state the concept of antioxidants, functional foods, various diseases and disorders [K1]
- CO2. trace the history, sources and components of various functional foods used to treat the various diseases and disorders [K2]
- CO3. discuss the types of functional foods in the prevention and management of various diseases and disorders. [K2]
- CO4. identify the role and properties of functional foods in the prevention and management of various diseases and disorders. [K3]
- CO5. find the effect of functional foods in the prevention of various diseases and disorders. [K3]

#### UNIT I

##### Introduction

Functional foods - Definition, History, types and classification of functional foods, Relation of functional foods (FF) to chronic diseases.

##### Food sources

Functional foods in different foods: cereal products (oats, wheat bran, rice bran, etc.), fruits and vegetables, milk and milk products, legumes, nuts, oil seeds and sea foods, herbs, spices and medicinal plants. Coffee, tea and other beverages as functional foods/drinks and their protective effects.

(15 hours)

#### UNIT II

##### Antioxidants

Concept of free radicals and antioxidants, antioxidant role as functional foods. Antioxidant and chronic diseases.

**Properties and functions of various functional food ingredients**

Protein, complex carbohydrates (dietary fiber) as functional food ingredients; probiotic, prebiotics, symbiotic foods, and their functional role. Sources and role of isoprenoids, isoflavones, flavonoids, carotenoids, tocotrienols, chlorophyll, polyunsaturated fatty acids, lecithin, choline, terpenoids, Glucosamine, lycopene, proanthocyanins. (15 hours)

**Unit III**

**Functional foods and cardiovascular diseases (CVD)** Epidemiology of cardiovascular diseases, Biomarkers of different cardiovascular diseases, effect of functional food on biomarkers of CVD, Effect of functional foods like green tea, grapes, oats, soybean, sunflower seeds or pumpkin seeds on CVD (15 hours)

**UNIT IV****Functional foods and cancer**

Functional Food Components in Cancer Disease, Effect of functional foods like cruciferous vegetables, green tea, garlic, walnuts, berries on cancer.

**Functional foods and renal diseases**

Epidemiology of kidney disease, functional foods for kidney diseases, Effect of functional foods like garlic, buckwheat on kidney. (15 hours)

**UNIT V****Functional foods and obesity**

Functional foods and obesity, biomarkers of obesity, bioactive compounds in functional foods to manage healthy weight. Effect of functional foods like dietary fibres, psyllium husk, apple on obesity.

**Functional foods and diabetes**

Epidemiology of Diabetes, Functional Foods for Type 2 diabetes, effect of functional foods like turmeric, garlic, green tea, dietary fibre on diabetes. (15 hours)

**Activity**

- Prepare a list of functional foods and its benefits.
- Make a Power point presentation of Biomarkers for obesity, CVD, cancer, diabetes, kidney failure.
- Group discussion on Bioactive compounds and its functions that are beneficial for chronic diseases.

**Reference**

1. Cho S. S. and Dreher, M.L. (2001): Handbook Dietary Fibre, Marcel Dekker Inc., New York.
2. Gibson, G.R. and C.M. Williams (2000), "Functional Foods : Concept to Product". Woodhead.
3. Giuseppe Mazza (1998), "Functional Foods: Biochemical and Processing Aspects", Volume 1; CRC Press

4. Goldberg, I. Ed (1994): Functional Foods: Designer Foods, Pharma Foods, Nutraceuticals, Chapman & Hall, New York.
5. Ikan, Raphael (2005), “Natural Products: A Laboratory Guide”, 2nd Edition, Academic Press / Elsevier.
7. Webb, P P (2006), “Dietary Supplements and Functional Foods”. Blackwell.
8. Wildman, Robert E.C (2006), “Handbook of Nutraceuticals and Functional Foods”. CRC.

**e- learning resources**

- <https://youtu.be/uFf0zxQ3rBU>
- <http://epgp.inflibnet.ac.in/Home/Download>

**Mapping with Programme Outcomes**

Course Code 23UHSC63	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO	PSO
	1.a	1.b	2.a	2.b	3	4.a	4.b	5	6	7
CO1	3	3	3	3	-	-	-	3	-	-
CO2	3	3	3	3	-	-	2	2	-	3
CO3	2	2	1	1	-	-	2	2	-	1
CO4	1	1	1	1	1	2	2	1	-	1
CO5	1	1	1	1	1	1	1	1	-	1

**Strong(3)      Medium(2)      Low(1)**

Dr.D.Vijayarani

**Head of the Department**

Mrs.B.Ameena Beebi

Mrs.R.Subha

**Course Designers**



# V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Reaccredited with 'A++' Grade (4<sup>th</sup> Cycle) by NAAC

**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

## B.Sc. Home Science – Nutrition and Dietetics

(for in those who join 2023- 2024)

Semester VI	<b>FOOD SAFETY AND QUALITY CONTROL</b>	Hours/Week:4	
Core Course-17		Credits:4	
Course Code		Internal	External
<b>23UHSC64</b>		25	75

### Course Outcomes

On completion of the course, students will be able to

**CO1:** describe the concept of food safety, quality control, food laws and food regulations in food industries [K1].

**CO2:** discuss the types of food quality systems, adulteration, contaminants, SOPs, safety systems, laws and regulations to enhance food safety [K2].

**CO3:** explain the importance of food safety regulations, quality assurance, certifications, licensing, SOP, quality policy, food hygiene and sanitation in food sectors [K2].

**CO4:** find the role of food safety, quality management, standards, regulatory system and SOP check list in maintaining the quality of food production [K3].

**CO5:** identify the applications of HACCP, food adulteration trends, factors contributing food borne hazards, procedures to determine food related risks and control it an industry to ensure food safety [K3].

### UNIT I

**Food safety** - Introduction to concepts of food quality, food safety, food quality assurance. General food laws and food safety regulations. History of Food regulations. Importance of Food safety and quality control concepts applied in the food processing industry.

**Evaluation of Food safety** – Applications of HACCP in the food industry. (12 marks)

### UNIT II

**Quality assurance** - Importance and functions of quality control. Theoretical and practical considerations, description of different systems: GAP, GMP, TQM, ISO. Indian food standards -Voluntary and Obligatory standards (PFA, FPO, MMPO, AGMARK etc) Codex Alimentarius.

(12 hours)

### UNIT III

**Food sanitation and safety** - Factors contributing to physical, chemical and biological contamination in food chain, prevention and control of food borne hazards. Personal hygiene of food handlers, cleaning compounds, sanitation methods, waste disposal strategy (solid and liquid waste) and pest control

**Food adulteration** - Food adulteration, Common adulterants, Simple tests for detection of adulteration and toxic constituents. Functional role and safety issues - Recent trends and challenges in food adulteration.

(12 hours)

### UNIT IV

**Food safety regulation in India** - An overview of Food Regulation in India, Food Laws and Regulations; Structure, organization and duties of regulatory system- Duties and responsibilities of food business operator, Registration and Licensing process and requirements, Labeling of Food Products, Traceability, Import and Export of Foods, Liability for Defective Products, Food safety management systems and certifications.

(12 hours)

### UNIT V

**Standard operating procedure and checklist** - Preparing scope, quality policy and quality objectives of food processing company, Defining Standard operating procedure. SOP for purchasing raw materials, receiving raw materials, storage, cleaning, holding, cooling, freezing, thawing, reheating, personal hygiene, facility and equipments.

**Preparation of HACCP based SOP checklist** - personal hygiene, food preparation, hot holding, cold holding, refrigerator, freezer and milk cooler, food storage and dry storage, cleaning and sanitizing, utensils and equipments, large equipments, garbage storage and disposal and pest control.

(12 hours)

#### Activity

Assignment on the preparation of food safety related risk analysis in food processing industry.

Training on the preparation of Standard Operating

Procedure (SOP) and manual for GMP

Prepare a HACCP Plan for a food processing industry.

Practical analysis of the detection of adulteration in different types of foods.

Preparing work instructions for the staff in charge of sanitation and the cleaning staff in food industry/food outlets.

Prepare Audit Checklist for various food industries.

## References

1. AOAC International. (2005) Official methods of analysis of AOAC International. 17<sup>th</sup> Ed., current through 1st revision. Gaithersburg, MD, USA, Association of Analytical Communities.
2. Bhatia, R. and Ichhpujan, R.L (2004), Quality assurance in Microbiology, CBS Publishers and Distributors, New Delhi. 2004.
3. Bryan, F.L. (2007) Hazard Analysis Critical Control Point Evaluations A Guide to Identifying Hazards and Assessing Risks Associated with Food Preparation and Storage. World Health Organization, Geneva.
4. Early, R. (2006) Guide to Quality Management Systems for the Food Industry, Blackie, Academic and professional, London.
5. FAO (2006) Manuals of Food Quality Control. 2-Additives Contaminants Techniques, Rome.
6. Food and Agricultural Organization (1980): Manuals of Food Quality Control. 2 Additives Contaminants Techniques, Rome
7. Food safety and standards act 2006, Rules 2011, Regulations 2011, 10<sup>th</sup> Edition, ILBCOIndia, Indian Law Book Company, 2013.

## e-Learning Resources

- <http://www.fssai.gov.in/>
- <http://www.medindia.net>
- <http://www.foodsafety.unl.edu/>

Course Code 23UHSC64	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	3	2	3	2	2	3	3	2	2	3
CO2	3	2	3	2	2	3	3	2	2	3
CO3	3	2	3	3	2	3	3	2	2	3
CO4	3	2	3	2	2	3	3	2	2	3
CO5	3	3	3	3	2	3	3	2	2	3

**Strong(3)    Medium(2)    Low(1)**

Dr.D.Vijayarani

Mrs.A.Jeevarathinam

Ms.S.Vaishnavi

**Course Designers**

**Head of the Department**



## V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

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**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

### B.Sc. Home Science - Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester VI	<b>PRINCIPLES OF RESOURCE MANAGEMENT - THEORY AND PRACTICAL</b>	Hours/Week: 5	
DSEC - 3		Credits: 5	
Course Code <b>23UHSE61</b>		Internal 25	External 75

#### Course Outcomes

On completion of the course, the students will be able to

- CO1:** describe the concept and importance of management, characteristics of home management, motivating factors in management, decision, decision making, resources and resource management. [K1]
- CO2:** discuss the types of motivating factors in management, decision, resource, efforts in energy management, fatigue, income, budget and saving. [K2]
- CO3:** explain the process of management and decision making, methods of handling money, time and energy. [K2]
- CO4:** write the principles of home management, body mechanism in energy management, decision making and budget, techniques involved in work simplification, Mundel's classes of change and Engel's law of consumption. [K3]
- CO5:** identify the factors influencing the use of resources, time, energy and money for standard of living and determine the motivating factors in management. [K3]

#### UNIT I

**Introduction to Management** - Management Concepts - Definition, Concept, Micro and Macro environment. Principles of Management Process - Planning, Controlling, Evaluating. Qualities of a Good Manager. Motivational factors - Values, Goals and Standards. (15hours)

#### UNIT II

**Resources** - Meaning and classification, optimizing the use of familyresources, Factors affecting the use of resources.

**Decision making** - Meaning and its importance, Types of decisions, Decision making process, Methods of resolving conflicts. (15hours)



**UNIT III**

**Time Management** - Tools in time management - Time norms, Peak loads, Work Curves and rest periods, Time management process - Planning - Steps in making time plans - Controlling the planning action - Evaluation.

**Energy Management** - The efforts required in home-making activities; Energy required for household activities.

(15hours)

**UNIT IV**

**Work Simplification** - Definition, Importance, Techniques – Formal and Informal Techniques - Mundel's Classes of change - Planning efficient work areas in kitchen.

**Body Mechanics** - Posture, Gravity, Rhythmic movement, Proper use of Muscle and advantage of Momentum.

**Fatigue** - Concepts, Types - Physiological and Psychological fatigue and Managerial process applied to energy.

(15hours)

**UNIT V**

**Money Management** - Family Income - Types, sources and methods of augmenting family income.

**Family Expenditure** - Budget - Meaning - Types of budgets, Planning a budget for a family of a fixed income, Hotel / Restaurant, advantages of budgeting, Factors affecting family budget, Engel's law of consumption, methods of handling money - Family financial records, Savings-importance and types.

(15hours)

**Activity:**

Identification of personal and family values and goals – their interrelationship.

List out the resources optimizing the goal.

Preparation of a time schedule and Evaluate time schedule using Gantt chart.

Study on work heights based on anthropometric measurement on vertical and horizontal planes.

Preparation of family budget. Study of a saving institution and its scheme.

**References**

1. Bela Bhargava (2005), “Family resource Management & Interior Decoration”, university book house pvt ltd, ISBN-13: 978-8187339229
2. Marion Giordan (2016), “Consumer Education: A handbook for Teachers”, Routledge; 1st edition, ISBN-13: 978-1138839151

3. Nickell & Dorsey (2002), “Management in Family Living”, CBS; 4th edition, ISBN-13: 978-8123908519
4. Pushpa Chakravorty (2007), Home Management, New Delhi: Pointer Publishers.
5. Rao (2020), “Taxmann’s Human Resource Management”, Taxmann Publications Pvt. Ltd.; 2nd edition, ISBN-13: 978-9390128396
6. Ready GB (2021), “EBC consumer Protection Act”, LAW BOOKS, ASIN: B097TQ64QV
7. Steven, D.S, (2016). Consumer Economics: A Practical Overview”, New York: Routledge Taylor and Francis group.
8. Sudhir Dixit (2018), “Time Management”, Manjul Publishing House, ISBN-13: 978-9388241106

### e- Learning Resources

- <http://www.yourarticlelibrary.com/decision-making/decision-making-in-management-definition-and-features-explained/25657/>
- <http://www.familyresourcemanagement.org/services/goals/>
- <http://www.familyresourcemanagement.org/services/standards/>
- [http://www.nios.ac.in/media/documents/sechmscicour/english/home%20science%20\(eng\)%20ch-15.pdf](http://www.nios.ac.in/media/documents/sechmscicour/english/home%20science%20(eng)%20ch-15.pdf)
- <https://books.google.co.in/books?id=NJkrzK3CgisC&pg=PA149&lpg=PA149&dq=ti+me,+energy,+money+as+resource+in+management&source=bl&ots=xmSp-LDkia&sig=57qLKHx2UX3sxnBIJhm>

Course Code 23UHSE61	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	3	3	2	3	2	1	2	3	-	1
CO2	3	3	2	3	1	2	3	3	-	1
CO3	3	3	2	3	1	2	3	3	-	1
CO4	3	3	2	3	2	2	3	3	-	1
CO5	3	3	2	3	3	3	3	3	-	-

Dr.D.Vijayarani

Dr. S.Mathangi

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**Head of the Department**

**Course Designers**



# V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

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**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

## B.Sc. Home Science–Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester VI	<b>QUANTITY FOOD PRODUCTION AND SERVICE - THEORY AND PRACTICAL</b>	Hours/Week:5	
DSEC-3		Credits:5	
Course Code <b>23UHSE62</b>		Internal 25	External 75

### Course Outcomes

On completion of the course, students will be able to

**CO1:** describe the history and concept of food service establishments and entrepreneurship in catering [K1]

**CO2:** explain the different types of food service establishment, food production, menu, styles of service and entrepreneur in food service establishments. [K2]

**CO3:** discuss the system management for food production and procedure for quantity food production, table laying and start-up process [K2]

**CO4:** identify the functions of food service systems and menu planning and significance of production forecasting, food service personnel and entrepreneurship in foodservice establishments. [K3]

**CO5:** write the skills required for quantity food production and food service personnel and find the factors affecting menu planning, challenges and problems faced by women entrepreneurs.[K3]

### UNIT I

#### Food Service Industry

History of development of food service institution in India. Classification of food service establishments – Commercial -Transport catering, Hotels, Restaurants, Outdoor catering and Non-commercial / Welfare - Hospital, Institutional -School / College, Orphanage / Old age homes, prisons, Industrial catering.

Food Service systems - conventional, ready-prepared, commissary, assembly-serve. (15 hours)

### UNIT II

#### Quantity food production

Production forecasting, planning, production scheduling;

Standardization of recipes definition, need, uses, methods of enlargement of recipes. Portion control, effective use of left-overs. (15 hours)

**UNIT III****Menu Planning**

Menu – origin, definition and functions of menu, importance of planning menus, factors affecting menu planning, French classical menu. Types of menu - A la carte, Table d' hote, Du jour, static, cyclic, single use, construction and writing menu, menu display.

Basic terminologies in food service relating to stocks, soups, sauces, salads and beverages - alcoholic and non-alcoholic. (15 hours)

**UNIT IV****Food and Beverage Service**

Table Setting - Mise-en-scene, Mise-en-place, Basic rules for laying a table, Cover – definition, A la Carte cover and Table d' hote cover.

Food service personnel: basic technical skills, inter-personal skills, attributes of food and beverage personnel. Duties of a waiter- before guests arrive, when guests arrive, during the meal and after guests leave, rules for waiting at table.

Styles of Service - Table Service - Waiter – Silver / English, Family, American, French, Russian, Gueridon; Bar Counter, Assisted- Carvery, Buffet, Self-service-Cafeteria - Counter, Free-flow, Echelon, Supermarket, Single-point Service- Takeaway, Drive-thru, Fast food; Vending; Kiosks; Food court, In- situ Service- Tray, Trolley, Home delivery, Lounge, Room, Drive-in (15 hours)

**UNIT V****Entrepreneurship in catering**

Entrepreneurship–concept and significance

Entrepreneur-definition, characteristics and classification.

Food start up, Start -up process, steps, opportunities and challenges, problems faced by women entrepreneurs. (15 hours)

**Practicals**

1. Plan menu for different types of food service institutions- commercial and non- commercial food service institution
2. Preparation of menus for different types of events.
3. Preparation and standardisation of dishes of different cuisines (one portion).
4. Quantity production and service of meals - stepping up of recipe to 50 portions.
5. Table Setting – Cover- A la carte and Table d' hote covers.
6. Napkin folding.
7. Visit to food service units – commercial and non- commercial.
8. Organise food sales.
9. Internship in food service establishment for a month.

## References

1. Sethi, Mohini, Malhan, Surjeet.(2015).Catering Management–An Integrated Approach,3<sup>rd</sup> ed, New Age International Publishers,New Delhi.
2. JunePayne Palacio,Monica Theis,Introduction to Foodservice(2009),11<sup>th</sup> illustrated, Published by Pearson/Prentice Hall.
3. Dhawan andVijay. (2001).Foodand Beverage Service, Frank Boss and Co,NewDelhi.
4. Suganthi, Vand Premakumari,C.(2017).FoodService Management, Dipti Press(OPC)Pvt.Ltd, Chennai.
5. Andrews and Sudhir. (2000). Introduction to Hospitality Industry, Tata-Mc GrawHill Pub.Co.,New Delhi.
6. FoskettDavid.(2011).The Theory of Hospitality and Catering, Hodder Education,London.
7. Gupta,CB and Srinivasan, NP.(2002) Entrepreneurial Development, Sultan Chand& Sons,NewDelhi.
8. Jagmohan.N.(2013).Food and Beverage Service Operation,S.Chand & Co.Ltd.,NewDelhi.

## e- Learning Resources

- <https://www.scribd.com/document/119449120/History-of-Food-Service-Industry>
- <https://sirvo.com/>
- <https://www.yaaka.cc/unit/types-of-catering-establishment/>
- <https://www.scribd.com/doc/24003230/Unit-1-Food-and-Beverage-Service-Management>
- <https://www.universalclass.com/.../types-of-service-and-table-settings-in-waiter>

## Mapping with Programme Outcomes

Course Code 23UHSE62	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	3	3	3	3	-	-	-	3	-	-
CO2	3	3	3	3	-	-	2	2	-	3
CO3	2	2	1	1	-	-	2	2	-	1
CO4	1	1	1	1	1	2	2	1	-	1
CO5	1	1	1	1	1	1	1	1	-	1

**Strong(3)      Medium(2)      Low(1)**

Dr.D.Vijayarani

**Head of the Department**

Mrs.T.Devi

Ms.R.Subha

**Course Designers**



## V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

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**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

### B.Sc. Home Science – Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester VI	<b>FOOD PRESERVATION –THEORY AND PRACTICAL</b>	Hours/Week:4	
DSEC-4		Credits:3	
Course Code <b>23UHSE63</b>		Internal 25	External 75

#### Course Outcomes

On completion of the course, students will be able to

**CO1:** describe the concept of food preservation, food spoilage, food packaging and food additives. [K1]

**CO2:** explain the causes of food spoilage, need and principles of food preservation techniques [K2]

**CO3:** explain the different types of preservation method, food spoilage, food packaging and food additives [K2]

**CO4:** identify the various microorganism involved in food spoilage and write the processing steps involved in preserving food by using drying, sugar, salt, low and high temperature. [K3]

**CO5:** find out the role of microbes in food spoilage and the effect of preservation methods on the quality of food [K3]

#### UNIT I

**Food Spoilage** - Definition, causes, microorganisms involved in spoilage of bread, fruits and vegetables, meat, fish, egg, milk, juices and pickles.

**Food preservation** - Definition, principles and importance, classification– bactericidal and bacteriostatic methods. (12 hours)

#### UNIT II

##### Processing by high temperature

Processing and preservation by high temperature: blanching, pasteurization, sterilization and UHT processing, canning, extraction cooking, dielectric heating, Dehydration. (12 hours)

### UNIT III

#### Processing by low temperature

Processing and preservation by low temperature – refrigeration, freezing, dehydro-freezing.

(12 hours)

### UNIT IV

#### Preservation by drying

Processing and preservation by drying, concentration and evaporation: various methods sun – drying, tray or tunnel drying, spray drying, drum drying freeze drying, fluidized bed drying, advantages and disadvantages.

(12 hours)

### UNIT V

**Preservation by non - thermal treatments** and food packaging Processing and preservation by non – thermal methods: salt, sugar, chemicals, smoking. Irradiation

Food additives: Definition, types and functions, permissible limits and safety aspects.

Food packaging- its types and uses

Practical - Preparation of jams, jellies and squashes using seasonal fruits and vegetables. Preparation of pickles using fruits and vegetables.

Preparation of sauce and ketchup.

(12 hours)

#### References

1. Arthey, D and Ashurst, P.R (1996), Fruit processing, Blackie academic and professional. London.
2. Fellows, P.J (2016): Food Processing Technology: Principles and Practice, second edition, CRC Wood head publishing Ltd, Cambridge.
3. Gould. G.W (1995), New methods of food preservation. Blackie academic and professional. London.
4. Rahman M S (2020) Handbook of Food Preservation CRC Press, USA
5. Srilakshmi B (2017) Food Science, New Age International Publications, New Delhi.
6. Suganthi.V and Subaratinam.R (2021) Textbook on Food preservation, Dipti Press(OPC) Pvt. Ltd, Chennai.

**e- Learning Resources**

- <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/food-spoilage>.
- <http://ecoursesonline.iasri.res.in/mod/page/view.php?id=111436>
- <http://ecoursesonline.iasri.res.in/mod/page/view.php?id=111435>
- <http://www.homepreservingbible.com/2247-an-introduction-to-the-drying-food-preservation-method/>

**Mapping with Programme Outcomes**

Course Code 23UHSE63	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
<b>CO1</b>	3	3	1	1	1	2	1	3	1	3
<b>CO2</b>	3	3	1	1	3	3	2	3	1	3
<b>CO3</b>	3	3	2	2	3	3	2	3	2	3
<b>CO4</b>	3	3	1	1	3	3	2	3	1	3
<b>CO5</b>	3	3	1	1	3	3	2	3	1	3

**Strong(3)      Medium(2)      Low(1)**

Dr.D.Vijayarani

**Head of the Department**

Mrs.S.Balasaraswathi

Mrs.T.Devi

**Course Designers**





## V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

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**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

### B.Sc. Home Science – Nutrition and Dietetics

(for those who join in 2023- 2024)

Semester VI	<b>CONCEPTS IN APPAREL DESIGNING</b>	Hours/Week: 4	
DSEC 4		Credits: 3	
Course Code - <b>23UHSE64</b>		Internal 25	External 75

#### Course Outcomes

On completion of the course, students will be able to

CO1: state the concept of sewing tools, fabric and garment components such as stitches, seams, seam finishes, fullness, plackets, fasteners, sleeves, sleeve and bodice combined, collars, pockets and facings. [K1]

CO2: classify the types of basic clothing construction techniques to make an attire. [K2]

CO3: explain the functions of basic construction techniques. [K2]

CO4: apply the principles and techniques involved in garment construction in an attractive way. [K3]

CO5: write the factors to be considered while making the basics of clothing construction and develop the skills needed to construct the trendy garments. [K3]

#### UNIT I

##### Introduction and basic hand stitches

a) Parts, functions, attachments and use and care of a Sewing machine. Minor troubles and solutions encountered while sewing.

b) Tools used for clothing construction– cutting tools, measuring tools, marking tools, general tools, pressing tools.

c) Basic hand stitches- temporary and permanent stitches.

d) Hems – types, different stitches used.

##### Practical

1. Preparation of samples for Basic hand stitches.

2. Preparation of samples for Hems

(12 hours)

## UNIT II

### Basic construction techniques- seams and fullness

- a) Seams and seam finishes – types, working of seams and seam finishes.
- b) Fullness- definition, types- darts, tucks, pleats, flares and godets, gathers and shirrs, frills or ruffles, flounces

### Practical

- 1.Preparation of samples for seam -Plain, Top Stitched, Flat fell, Piped seam.
- 2.Preparation of samples for seam finishes - Overcast, Hem, Edge stitched, Bound.
- 3. Preparation of samples for fullness - Darts, Tucks -pin, cross, group tucking with scalloped effect, Pleats (any 3)-knife, box, kick, gathering by machine, elastic. Ruffles- single, double. (12 hours)

## UNIT III

### Basic construction techniques- Plackets and Fasteners

- a) Plackets – definition, characteristics of a good placket, types – inconspicuous placket and conspicuous plackets. Method of constructing the same.
- b) Fasteners – conspicuous (Button and button-holes, button loops, button with holes, shank buttons, eyelets and cords). Inconspicuous (press buttons, hooks and eyes, zips).

### Practical

Preparation of samples for Plackets and Fasteners-continuous, bound, faced and zipper plackets, Tailored Placket, button and buttonhole, press button, hook and eye.

(12 hours)

## UNIT IV

### Basic construction techniques-sleeves and neckline

- a) Sleeves – definition, types, set-in-sleeves – plain sleeve, puff sleeve, bishop sleeve, bell, circular, cap sleeve and magyar sleeve.
- b) Sleeve and bodice combined – raglan, kimono and dolman.
- c) Modified armhole – squared armhole.
- d) Collars – definitions, types of collars- peter pan, scalloped, puritan, sailor, square, rippled, full shirt collar, open collar, chinese, turtleneck, shawl collar

e) Yokes – types, simple yoke, yoke with fullness within the yoke, yoke supporting/ releasing fullness

### **Practical**

- 1.Preparation of samples for Sleeves- plain sleeve, puff sleeve and Raglan or cap sleeve.
- 2.Preparation of samples with Yoke –simple yoke and yoke supporting fullness.
- 3.Preparation of samples for Collar - peter pan collar and shirt collar (12 hours)

## **UNIT V**

### **Basic construction techniques-Pockets, Facing and Binding**

a) Pockets – definition, types of pockets – patch pocket, bound pocket, pocket in a seam, front hip pocket.

b) Facings – bias facing, shaped facing and decorative facing and

Binding – single bias binding, double bias binding.

### **Practical**

- 1.Preparation of samples for Pocket- Patch pocket
- 2.Preparation of samples for Facing and Binding-bias facing, shaped facing, binding (12 hours)

### **References:**

1. Dorothy Wood (2007). The Practical Encyclopedia of Sewing. Anness Publishing Ltd.
2. Claire B. Shaeffer (2011). Couture Sewing Techniques. Taunton Press Inc., USA.
3. J. Matthews (2018). Pattern Design: Fundamentals — Construction and Pattern Making for Fashion Design. Fairbanks Publishing, USA.
4. Adele Margolis (2019). The Dressmaking Book: A Simplified Guide for Beginners. Echo Point Books & Media, USA.

### **e-learning Resources:**

- <http://www.sewingsupport.com/seam-finishes.html>
- <http://vintagesewing.info/1930s/33-pt/pt-02.html>
- <http://www.stitchplaystudio.com/AnnouncementRetrieve.aspx?ID=521146>
- <http://aces.nmsu.edu/pubs/c/C-233.html>

## Mapping with Programme Outcomes

Course Code 23UHSE64	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1.a	PSO 1.b	PSO 2.a	PSO 2.b	PSO 3	PSO 4.a	PSO 4.b	PSO 5	PSO 6	PSO 7
CO1	3	3	1	1	1	2	1	3	1	3
CO2	3	3	1	1	3	3	2	3	1	3
CO3	3	3	2	2	3	3	2	3	2	3
CO4	3	3	1	1	3	3	2	3	1	3
CO5	3	3	1	1	3	3	2	3	1	3

**Strong(3)      Medium(2)      Low(1)**

Dr.D.Vijayarani  
**Head of the Department**

Dr.S.Mathangi  
Mrs.B.Ameena Beebi  
**Course Designers**



## V.V.VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Reaccredited with 'A++' Grade (4<sup>th</sup> Cycle) by NAAC

**VIRUDHUNAGAR**

**Quality Education with Wisdom and Values**

### B.Sc. Home Science – Nutrition and Dietetics (for those who join in 2023- 2024)

Semester VI	<b>APTITUDE AND REASONING SKILLS FOR COMPETITIVE EXAMINATIONS</b>	Hours/Week:2	
SEC -7		Credits:2	
Course Code <b>23UHSS61</b>		Internal 25	External 75

#### Course Outcomes:

On completion of this course, the students will be able to

**CO1:** state the formulas to perform various mathematical operations [K1].

**CO2:** describe the types of number systems, data representation, logical reasoning, analogies, family trees, and rules for reasoning problems [K1].

**CO3:** illustrate the steps to solve problems in numbers, arithmetic, finance, graphs, language-based reasoning and critical analysis [K2].

**CO4:** discuss the methods to compute roots, averages, data trends, logical thinking, decision-making, action-based reasoning and time and motion problems [K2].

**CO5:** determine the solution for percentage, probability, set-based representation, non-verbal reasoning, and interpretation-based reasoning [K3].

#### UNIT I

##### Quantitative Ability (Basic Mathematics)

Number Systems, LCM and HCF, Simplification, Square Roots and CubeRoots, Average, Problems on Ages, Percentages, Problems on Numbers (6 hours)

#### UNIT II

##### Quantitative Ability (Advanced Mathematics)

Probability, Profit and Loss, Simple and Compound Interest, Time, Speed and Distance, Time & Work, Ratio and Proportion. (6 hours)

**UNIT III****Data Interpretation**

Tables, Column Graphs, Bar Graphs, Line Charts, Pie Chart, VennDiagrams (6 hours)

**UNIT IV****Verbal and Non-Verbal reasoning**

Analogy, Blood Relation, Directional Sense, Number and Letter Series, Coding – Decoding, Calendars, Clocks, Venn Diagrams, Mathematical Operations, logical sequence of work, Mirror-image, Water-image, Completion of incomplete pattern, Grouping of identical figures (6 hours)

**Logical Reasoning**

Statement – Argument, Statement Assumptions, Statement – Course of action, Statement and Conclusions, Cause and Effect reasoning, Deriving conclusion from passages, Theme detection.

(6 hours)

**References**

1. Aggarwal, R. S. (2000). *A Modern Approach to Verbal & Non Verbal Reasoning*. S.Chand.
2. Sijwali, B. S and Indu Sijwali (2014). *Analytical and Logical reasoning*, Arihant Publications.
3. Guha A, (2020) *Quantitative Aptitude by Competitive Examinations*, 7th Edition, Mcgraw Hill Education Publication.
4. Rajgotra, A. & Pradhan P (2020). *Wileys Exam Xpert A simpler Approach to Logical Reasoning*, Willey Publications

**e – Learning Resources**

- <https://prepinsta.com/>
- <https://www.indiabix.com/>
- <https://www.javatpoint.com>

Mapping with Programme Outcomes

Course Code 23UHSS61	PO1		PO2		PO3	PO4		PO5	PO6	PO7
	PSO 1a	PSO 1b	PSO 2a	PSO 2b	PSO 3	PSO 4a	PSO 4b	PSO 5	PSO 6	PSO 7
CO1	2	3	3	3	3	2	3	2	3	3
CO2	2	3	3	3	3	2	3	2	3	3
CO3	2	3	3	3	3	2	3	2	3	3
CO4	2	3	3	3	3	2	3	2	3	3
CO5	2	3	3	3	3	2	3	2	3	3

**Strong 3 Medium 2 Low 1**

Dr.D.Vijayarani

**Head of the Department**

Mrs.A.Jeevarathinam

Ms.S.Vaishnavi

**Course Designers**