

ANNEXURE 18B05

V.V. VANNIAPERUMAL COLLEGE FOR WOMEN



(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

CHOICE BASED CREDIT SYSTEM

REGULATIONS AND SYLLABUS

(with effect from Academic Year 2018 - 2019)

V.V. Vanniaperumal College for Women, Virudhunagar, established in 1962, offers 19 UG Programmes, 14 PG Programmes, 6 M.Phil. Programmes and 3 Ph.D. Programmes. All these programmes, except Ph.D. Programmes, have been framed as per the guidelines given by UGC under Choice Based Credit System (CBCS).

The Departments of Commerce, English and History 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.

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 Students' performance will be evaluated based on the uniform grading system. Computation of the Cumulative Grade Point Average (CGPA) is made to ensure uniformity in evaluation system.

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

UG PROGRAMMES

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

PG PROGRAMMES

Arts & Humanities	:	History, English, Tamil
Physical & Life Sciences	:	Mathematics, Physics, Biochemistry, Food Processing & Quality Control, Chemistry, Zoology, Computer Science, Information Technology, Computer Applications (MCA*)
Commerce & Management	:	Commerce, Business Administration (MBA*)

* AICTE approved Programmes

PRE-DOCTORAL PROGRAMMES (M.Phil.)

Arts & Humanities	:	History, English, Tamil
Physical & Life Sciences	:	Mathematics, Biochemistry
Commerce & Management	:	Commerce

OUTLINE OF CHOICE BASED CREDIT SYSTEM

1. Core Courses
2. Elective Courses
 - 2.1. Discipline Specific Elective Courses (DSEC)
 - 2.2. Dissertation / Project
3. Non Major Elective Courses (NMEC)
4. Generic Elective Courses (GEC)
5. Ability Enhancement Courses (AEC)
 - 5.1 Ability Enhancement Compulsory Courses (AECC)
 - 5.2. Skill Enhancement Courses (SEC)

List of Non Major Elective Courses (NMEC) Offered

UG PROGRAMMES

Name of the Course	Semester	Department
History of India upto A.D.1858	III	History(EM)
இந்திய வரலாறு கி.பி. 1858 வரை	III	History (TM)
Indian National Movement (A.D 1885-1947)	IV	History(EM)
இந்திய தேசிய இயக்கம் (கி.பி. 1885 – 1947)	IV	History(TM)
English for Professions I	III	English
English for Professions II	IV	
இக்காலநீதி இலக்கியம்	III	Tamil
உரைநடை இலக்கியம்	IV	
Basic Hindi - I	III	Hindi
Basic Hindi - II	IV	
Practical Banking	III	Commerce
Basic Accounting Principles	IV	
Business Management	III	Business Administration
Entrepreneurship	IV	
Quantitative Aptitude – I	III	Mathematics
Statistics and Operation Research	IV	
Physics in Everyday life	III	Physics
Fundamentals of Electronics	IV	
Industrial Chemistry	III	Chemistry
Drugs and Natural Products	IV	
Applied Zoology	III	Zoology
Animal Science	IV	
Basic Food Science	III	Home Science –
Basic Nutrition and Dietetics	IV	Nutrition and Dietetics
Women and Health	III	Biochemistry
Life style associated disorders	IV	
Medical Lab Technology	III	Microbiology
Applied Microbiology	IV	
Infectious Diseases	III	Biotechnology
Organic Farming	IV	
Basics of Fashion	III	Costume Design And
Interior Designing	IV	Fashion
Introduction to Computers and Office Automation	III	Computer Science
Introduction to Internet and HTML 5	IV	
Computer Fundamentals and E-mail	III	Information Technology
Introduction to HTML	IV	
Fundamentals of Computers	III	Computer Applications
Web Design with HTML	IV	
Horticulture – I	III	
Horticulture – II	IV	Botany
மருத்துவ தாவரவியல் - I	III	
மருத்துவ தாவரவியல் - II	IV	
Library and Information Science – I	III	Library Science
Library and Information Science - II	IV	

List of Generic Elective Courses (GEC) Offered

GENERIC ELECTIVE COURSES – 1 (Any one)

1. Human Rights/
2. Women Studies

GENERIC ELECTIVE COURSES – 2 (Any one)

1. Constitution of India/
2. Modern Economics/
3. Adolescent Psychology/
4. Disaster Management

ABILITY ENHANCEMENT COMPULSORY COURSES (AECC)

1. Environmental Studies
2. Value Education

மேல்நிலை கல்வி வரை தமிழை முதன்மை பாடமாக எடுத்து படிக்காத மாணவிகள் கீழ்க்கண்ட பாடங்களை கட்டாயம் படிக்க வேண்டும்

1. அடிப்படை தமிழ் - எழுத்தறிதல்
2. அடிப்படைத் தமிழ் - மொழித்திறனறிதல்

ELIGIBILITY FOR ADMISSION

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 COURSE

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

MEDIUM OF INSTRUCTION

English

SUBJECTS OF STUDY

Part I-Tamil/Hindi

Part II-English

Part-III - Core Courses

Core Elective: Discipline Specific Electives and Project

Allied Courses: 1. Chemistry

2. Allied Biology

Part IV- Skill Enhancement Courses (SEC)

Non-Major Elective Courses (NMEC)

Generic Elective Courses (GEC)

Dissertation / Field Project/Internship

Ability Enhancement Compulsory Courses (AECC)

Part V -National Service Scheme, Physical Education, Youth Red Cross

Society, Red Ribbon Club, Science Forum, Eco Club, Library and

Information Science, Consumer Forum, Health and Fitness Club,

National Cadet Corps

Study Tour/ Field visit is mandatory for UG students.

Internship / Field Project is compulsory for II year UG Science students

Internship: A designated activity that carries one credit involving more than 7 days of working in an organization under the guidance of an identified mentor

Field Project: Project students comprising of maximum 5 members in a team need to undertake project that involve conducting surveys inside/outside the college premises and collection of data from designated communities or natural places.

EVALUATION SCHEME**Core Courses, Discipline Specific Electives Courses & Allied Courses**

Components	Internal Assessment Marks	External Examination Marks	Total Marks
Theory	25	75	100
Practical	40	60	100
Project	40	60	100
Internship	50	50	100

PART III - Core Courses, Discipline Specific Elective Courses & Allied Courses

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

Mode of Evaluation		Marks
Periodic Test	:	15
Assignment	:	5
Quiz	:	5
Total	:	25

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

Two Assignments - Best of the two will be considered

Three Quiz Tests - Best of the three will be considered

Practical

Mode of Evaluation		Marks
Model Test	:	30
Performance	:	10
Total	:	40

Two Model Tests - Best one will be considered

Performance - Attendance and Record

Internship

One month internship training in well reputed hospitals. Internal evaluation carried out by project guide (Dietitian) and external evaluation by University practical examiner.

Question Pattern for Periodic Assessment**Duration: 2 Hours**

Section	Type of Question	No. of Questions	No. of Questions to be answered	Marks for each question	Total Marks
A Q. No.(1- 4)	Multiple choice	4	4	1	4
B Q. No.(5 - 7)	Either or type	3	3	7	21
C Q. No.(8-10)	Open Choice	3	2	10	20
Total					45

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

Section	Type of Question	No. of Questions	No. of Questions to be answered	Marks for each question	Total Marks
A Q. No.(1- 10)	Multiple choice (At least Two question from each unit)	10	10	1	10
B Q. No.(11 -15)	Either or type (one set from each unit)	5	5	7	35
C Q. No.(16-20)	Open Choice (one from each unit)	5	3	10	30
				Total	75

CORE COURSES ASSESSMENT

Online Test will be conducted for the Core Courses in V & VI Semester.

Multiple Choice questions Pattern is followed.

PART IV- Skill Enhancement Courses and Non Major Elective Courses

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

Mode of Evaluation		Marks
Periodic Test	:	25
Assignment	:	10
Quiz	:	5
Total	:	40

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

Two Assignments - Best of the two will be considered

Three Quiz Tests - Best of the three will be considered

Question Pattern**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- 4)	Open Choice	4	3	5	15
B Q. No.(5- 6)	Open Choice	2	1	10	10
Total					25

External 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- 8)	Open Choice	8	6	5	30
B Q. No.(9- 13)	Open Choice	5	3	10	30
Total					60

PART IV- Generic Elective Courses & Ability Enhancement Compulsory Courses

- Assessment by Internal Examiner only
- Model Examination is conducted after two periodic tests.
- Book and Study Material prepared by the Faculty Members of the respective departments will be prescribed.

ASSESSMENT PATTERN

Mode of Evaluation		Marks
Periodic Test	:	30
Assignment	:	10
Model Examination	:	60
Total	:	100

Two Periodic tests - Best of the two will be considered

Two Assignments - Best of the two will be considered

Question Pattern for Periodic Test**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- 4)	Open Choice	4	3	6	18
B Q. No.(5- 6)	Open Choice	2	1	12	12
Total					30

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- 8)	Open Choice	8	5	6	30
B Q. No.(9- 13)	Open Choice	5	3	10	30
Total					60

ELIGIBILITY FOR THE DEGREE

- i) The candidate will not be eligible for degree without completing the prescribed Courses of study and a minimum Pass marks in all the Courses.
- ii) 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.
 - Pass minimum for External Examination is 27 marks out of 75 marks for Core Courses, Allied Courses and Discipline Specific Elective Courses.
 - Pass minimum for External Examination is 21 marks out of 60 marks for Non Major Elective Courses and Skill Enhancement Courses.
 - The aggregate minimum pass percentage is 40.
 - Pass minimum for External Practical Examination is 21 marks out of 60 marks.
 - Pass minimum for Generic Elective Course and Ability Enchantment Compulsory Course is 40.

B.Sc. HOME SCIENCE - NUTRITION AND DIETETICS

Program Code -2028

PROGRAMME OUTCOMES

The students will be able to

- get an in-depth understanding of the subject.
- develop an effective oral and written communication.
- have wider social mobility into reality.
- outsource the acquired knowledge with social concern and responsibility.
- have a wholesome personality by imbibing ethical and traditional values.
- strengthen the passion for learning with vigour and self-motivation.

PROGRAMME SPECIFIC OUTCOMES

The students of B.Sc Home Science – Nutrition and Dietetics programme will be able to

1. hone 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.
2. apply the scientific principles involved in various branches of Home Science to promote holistic health among the people.
3. apply the concepts of nutritional sciences in dietetic and clinical interventions
4. use their knowledge in cookery, diet planning, diet counseling, food preservation, bakery and confectionary, nutritional assessment improve the food and nutrition security and over all status of the community.
5. cultivate critical thinking and research skills.
6. acquire scientific skills necessary for career options in institutions, industries and organizations in the field of home science or for economic empowerment in self in particular and community in general and entrepreneurial skills required for economic empowerment.
7. transfer their experience gained in science and technology from the laboratory to the community.
8. inculcate moral values and ethics for sound health and holistic living.
9. recognize the role of governmental and non-governmental organization in promoting the health and nutrition of the people.

V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

PART – I-TAMIL

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1.	I	18UTAG11	தாள்: 1 பொதுத்தமிழ்	3	100
2.	II	18UTAG21N	தாள்: 2 பொதுத்தமிழ்	3	100
3.	III	18UTAG31	தாள்: 3 பொதுத்தமிழ்	3	100
4.	IV	18UTAG41	தாள்: 4 பொதுத்தமிழ்	3	100
TOTAL				12	400

PART I -HINDI

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1.	I	18UHDG11	Prose – I & II, Ancient Stories - I, General Essays, Functional Hindi – I & Grammar	3	100
2.	II	18UHDG21	Drama, Ancient Stories - II, Letter Correspondence, Functional Hindi-II & Grammar	3	100
3.	III	18UHDG31	Ancient Poetry, Drama, Indian History, Hindi Grammar & Functional Hindi III	3	100
4.	IV	18UHDG41	Modern Poetry, Hindi Literary Essays, Letter Correspondence, Conversation & Functional Hindi IV	3	100
TOTAL				12	400

PART II

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1.	I	18UENG11A	English for Advanced Learners I	3	100
		18UENG11B	English for Career Guidance - I		
		18UENG11C	English for Communicative Competence-I		
2.	II	18UENG21A	English for Advanced Learners II	3	100
		18UENG21B	English for Career Guidance - II		
		18UENG21C	English for Communicative Competence - II		
3.	III	18UENG31A	English for Advanced Learners III	3	100
		18UENG31B	English for Career Guidance – III		
		18UENG31C	English for Communicative Competence - III		
4.	IV	18UENG41A	English for Advanced Learners IV	3	100
		18UENG41B	English for Career Guidance – IV		
		18UENG41C	English for Communicative Competence - IV		
TOTAL				12	400

PART III – CORE, DISCIPLINE SPECIFIC ELECTIVE COURSES

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1	I	18UHSC11	Food Science I	4	100
2	I	18UHSC12	Nutrition Science	4	100
3	II	18UHSC21	Food Science II	4	100
4	II	18UHSC22	Food Service Management	4	100
5	II	18UHSC21P	Food Science Lab	2	100
6	III	18UHSC31	Dietetics I	5	100
7	IV	18UHSC41	Dietetics II	5	100
8	IV	18UHSC41P	Dietetics Lab	2	100
9	V	18UHSC51	Food Microbiology	4	100
10	V	18UHSC52	Food Preservation and Bakery	4	100
11	V	18UHSC53	Human Development	4	100
12	V	18UHSE51/ 18UHSE52	Family Resource Management/ Bio Statistics	4	100
13	V	18UHSO51	Online Assessment	1	50
14	VI	18UHSC61	Nutritional Biochemistry	4	100
15	VI	18UHSC62	Internship	4	100
16	VI	18UHSC63	Extension Education	4	100
17	VI	18UHSE61/ 18UHSE62	Textiles and Clothing/ Food Toxicology	4	100
18	VI	18UHSO61	Online Assessment	1	50
19	VI	18UHSC61P	Food Analysis Lab	3	100
20	VI	18UHSC62P	Food Preservation and Bakery Lab	3	100
21	VI	18UHSC63P	Art in Everyday Life	2	100
Total				72	2000

PART III – ALLIED COURSE I- CHEMISTRY

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1.	I	18UCHA11	Inorganic, Organic and Physical Chemistry I	4	100
2.	II	18UCHA21	Inorganic, Organic and Physical Chemistry II	4	100
3.	II	18UCHA21P	Volumetric Analysis	2	100
Total				10	300

PART III - ALLIED COURSE II- ALLIED BIOLOGY

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1.	III	18UBHA31	Human Physiology	4	100
2.	IV	18UBHA41	Functional Foods and Nutraceuticals	4	100
	IV	18UBHA41P	Biochemical Analysis	2	100
Total				10	300

PART IV - SKILL ENHANCEMENT COURSES

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1.	II	18UHSS21P	MS-Office - Lab	2	100
2.	III	18UHSS31	Entrepreneurship Development	2	100
3.	IV	18UHSS41	Interior Design	2	100
4.	V	18UHSS51	Food Safety and Quality Control	2	100
5.	V	18UHSS52	Public Nutrition and Hygiene	2	100
6.	VI	18UHSS61	Family Dynamics	2	100
Total				12	600

PART IV – NON MAJOR ELECTIVE COURSES

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1.	III	18UHSN31	Basic Food Science	2	100
2.	IV	18UHSN41	Basic Nutrition and Dietetics	2	100
Total				4	200

PARTIV–GENERIC ELECTIVE AND ABILITY ENHANCEMENT COMPULSORY COURSES

S.No.	Sem.	Code	Title of the Course	Credits	Marks
1.	I	18UGVE11	Value Education	2	100
2	III	18UGEH31/ 18UGEW32	Human Rights Women studies	1	100
3.	IV	18UGEC41	Constitution of India	1	100
		18UGEM42	Modern Economics		
		18UGEA43	Adolescent Psychology		
		18UGED44 18UGED44N	Disaster Management Disaster Management		
4		18UPHI41G	Internship/Field Project	1	100
		PART V	Extension Activities	1	-
5	V	18UGES51	Environmental Studies	2	100
Total				8	500

PART –V EXTENSION ACTIVITIES

S.No.	Sem.	Code	Title of the Course	Credit
1	I, II, III & IV	18UVNS1 18UVNS2	National Service Scheme	1
2		18UVPE1 18UVPE2	Physical Education	
3		18UVYR1 18UVYR2	Youth Red Cross Society	
4		18UVRR1	Red Ribbon Club	
5		18UVSF1	Science Forum	
6		18UVEC1	Eco Club	
7		18UVLI1	Library and Information Science	
8		18UVCC1	Consumer Forum	
9		18UVHF1	Health and Fitness Club	
10		18UVNC1 18UVNC2	National Cadet Corps	



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

DEPARTMENT OF HOME SCIENCE

B.Sc. HOME SCIENCE - NUTRITION AND DIETETICS

PROGRAMME STRUCTURE

Semester	Course Code	Courses	Hours per week	Credits	Total Marks		
					Int.	Ext.	
I	Part I	18UTAG11	Tamil/Hindi I	6	3	25	75
	Part II	18UENG11	English I	6	3	25	75
	Part III	18UHSC11	Core Course -1 Food Science I	4	4	25	75
		18UHSC12	Core Course -2 Nutrition Science	4	4	25	75
		18UHSC21P	Core Course Practical – 1 Food Science Lab	2	-	-	-
		18UCHA11 18UCHA11P	Allied Course –I Inorganic , Organic and Physical Chemistry -1 Allied Practical 1	4 2	4	25	75
	Part IV	18UGVE11	Value Education	2	2	100	
	TOTAL			30	20	600	

Semester	Course Code	Courses	Hours per week	Credits	Total Marks		
					Int.	Ext.	
II	Part I	18UTAG21	Tamil /Hindi II	6	3	25	75
	Part II	18UENG21	English II	6	3	25	75
	Part III	18UHSC21	Core Course - 3 Food Science II	4	4	25	75
		18UHSC22	Core Course - 4 Food Service Management	4	4	25	75
		18UHSC21P	Core Course Practical –1 Food Science Lab	2	2	40	60
		18UCHA21	Allied Course –I Inorganic , Organic and Physical Chemistry -2	4	2	25	75
		18UCHA21P	Allied Practical- 1	2	2	40	60
	Part IV	18UHSS21P	SEC -1 MS Office Lab	2 T-1,P-1	2	40	60
	TOTAL			30	24	800	

Semester	Course Code	Courses	Hours per week	Credits	Total Marks			
					Int.	Ext.		
III	Part I	18UTAG31	Tamil/ Hindi III	6	3	25	75	
	Part II	18UENG31	English III	6	3	25	75	
	Part III	18UHSC31	Core Course -5 Dietetics I	5	5	25	75	
		18UHSC41P	Core Course Practical – 2 Dietetics Lab	2	-	-	-	
		18UBHA31	Allied II -Course 1 Allied Biology – Human Physiology	4	4	25	75	
		18UBHA41P	Biochemical Analysis Lab	2	-	-	-	
	Part IV	18UHSS31	SEC -2 Entrepreneurship Development	2	2	40	60	
		18UHSN31	NMEC-1 Basic Food Science	2	2	40	60	
	Part IV	18UGEH31/ 18UGEW32	Generic Elective -1 1.Human Rights/ 2. Women studies	0	1	40	60	
		18UGEC41/ 18UGEM42/ 18UGEA43/ 18UGED44 18UGED44N	Generic Elective -2 Constitution of India/ Modern Economics/ Adolescent Psychology/ Disaster Management Disaster Management	1	-	-	-	
		TOTAL			30	20	700	

Semester	Course Code	Courses	Hours per week	Credits	Total Marks		
					Int	Ext	
IV	Part I	18UTAG41	Tamil /Hindi IV	6	3	25	75
	Part II	18UENG41	English IV	6	3	25	75
		18UHSC41	Core Course - 6 Dietetics II	5	5	25	75
		18UHSC41P	Core Course Practical-2 Dietetics Lab	2	2	40	60
	Part III	18UBHA41	Allied II -Course – 2 Allied Biology – Functional Foods and Nutraceuticals	4	4	25	75
		18UBHA41P	Biochemical Analysis Lab	2	2	40	60
		18UHSS41	SEC -3 Interior Design	2	2	40	60
		18UHSN41	NMEC-2 Basic Nutrition and Dietetics	2	2	40	60
	Part IV	18UHS41G	Internship/Field Project	0	1	100	-
			Generic Elective -2				
		18UGEC41/ 18UGEM42/	Constitution of India/ Modern Economics/	1	1	100	-
		18UGEA43/	Adolescent Psychology/				
		18UGED44 18UGED44N	Disaster Management Disaster Management				
	Part V		Extension Activities	-	1	-	-
		TOTAL	30	26	1000		

Semester	Course Code	Courses	Hours per week	Credits	Total Marks		
					Int.	Ext.	
V	Part III	18UHSC51	Core Course – 7 Food Microbiology	4	4	25	75
		18UHSC52	Core Course - 8 Food Preservation and Bakery	4	4	25	75
		18UHSC53	Core Course – 9 Human Development	4	4	25	75
		18UHSC61P	Core Course Practical - 3 Food Analysis Lab	3	-	-	-
		18UHSC62P	Core Course Practical - 4 Food Preservation and Bakery Lab	3	-	-	-
		18UHSC63P	Core Course Practical -5 Art in Everyday Life	2	-	-	-
		18UHSE51/ 18UHSE52/ 18UHSE53	DSEC -1 1. Family Resource Management 2. Biostatistics 3. Textile Testing	4	4	25	75
	18UHSOL51	Online Assessment	-	1	50		
	Part IV	18UHSS51	SEC -4 Food Safety and Quality Control	2	2	40	60
		18UHSS52	SEC -5 Public Nutrition and Hygiene	2	2	40	60
		18UGES51	Environmental Studies	2	2	100	
		TOTAL	30	23	750		

Semester	Course Code	Courses	Hours per week	Credits	Total Marks		
					Int.	Ext.	
VI	Part III	18UHSC61	Core Course -10 Nutritional Biochemistry	5	4	25	75
		18UHSC62	Core Course -11 Internship	5	4	50	50
		18UHSC63	Core Course -12 Extension Education	5	4	25	75
		18UHSC61P	Core Course Practical -3 Food Analysis Lab	3	3	40	60
		18UHSC62P	Core Course Practical -4 Food Preservation and Bakery Lab	3	3	40	60
		18UHSC63P	Core Course Practical -5 Art in Everyday Life	2	2	40	60
		18UHSE61/ 18UHSE62/ 18UHSE63	DSEC -2 1. Textiles and Clothing 2. Food Toxicology 3. Front Office Management	5	4	25	75
	18UHSOL61	Online Assessment	-	1	50		
Part IV	18UHSS61	SEC -6 Family Dynamics	2	2	40	60	
TOTAL			30	27	850		

DSEC : Discipline Specific Elective Course

SEC : Skill Enhancement Course



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester: V	FOOD MICROBIOLOGY	Hours/Week:4	
Core course - 7		Credits: 4	
Course Code 18UHSC51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- explain the classification and characteristics of microorganisms in food.
- Summarize the spoilage causing microorganisms associated with different foods.
- recommend the methods to control microbial growth.
- categorize the food borne diseases and also find the transmission route, symptoms and prevention of food borne pathogens.
- assess the role of microbes in fermentation and how it influences the quality of various food products.
- promote job opportunities in food laboratories.

UNIT I

Basic concept of Microbiology

Microbiology – Definition, Classification of microorganisms - Bacteria, Fungi, Virus, Protozoa and Algae - Morphology, reproduction and economic importance.

(12 Hours)

UNIT II

Control of microbes

Sterilization - meaning, physical agents - dry and moist heat methods. Removal of microbes - filtration and sedimentation. Disinfection - meaning, chemical agents, preservatives and antibiotic.

(12 Hours)

UNIT III

Food spoilage

Microbial spoilage of foods and their prevention - cereals and cereal products, vegetables and fruits, sea foods, meat, egg , poultry, milk and milk products. (15Hours)

UNIT IV

Food borne diseases - Symptoms, mode and sources of transmission, food borne disease outbreak and methods of prevention. Food poisoning – Staphylococcus food poisoning, Botulism, Bacillus cereus food poisoning, Perferingens food poisoning, Aflatoxicoasis. Food infections – Salmonellosis, Typhoid, Shigellosis, Cholera, Amoebic dysentery, Hepatitis. Importance of sanitation and hygiene in food handling. Vector born diseases – Dengue and swine Flu. (10 Hours)

UNIT V

Fermented Foods

Importance of fermented foods, Role of microbes in fermented foods, Cereal , wheat products, milk products, soy products and alcoholic beverages. (11 Hours)

REFERENCES BOOKS

1. Frazier, W.C. and Westhoff, D.C. (2015). *Food microbiology*. (4thEds). New York : John wiley & sons, inc.
2. Joshua, A.K. (1998) .*Microbiology*. (3rd Edition). Madras : Popular book depot.
3. Khetarpaul, N. and Jood,S .(2003). *Food microbiology*. Udaipur : Agrotech Publishing Academy.
4. Roday, S. (1999). *Hygiene and sanitation in food industry*. New Delhi: Tata McGraw hill publishing company ltd.
5. Sharma,D.K. (2013). *Microbiology*. New Delhi: Narosa publishing house.

Mrs.S.Balasaraswathi
Course Designer



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)
 An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai
Re-accredited with 'A' Grade (3rd Cycle) by NAAC
 VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester V	FOOD PRESERVATION AND BAKERY	Hours/Week: 4	
Core Course - 8		Credits: 4	
Course Code 18UHSC52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the meaning, objectives and importance of food preservation.
- utilize the role of ingredients , basic principles, methods used for food preservation and bakery.
- apply the food standards in food preservation and bakery.
- acquire skills in preparing food products by using food preservation and baking techniques.
- apply the baking and preservation techniques in the field of research
- obtain placement in food industries and set up small scale food industries.

UNIT I

Food preservation – definition and objectives, importance, principles and methods. (10 Hours)

UNIT II

Preservation by using sugar, principles of gel formation, preparation of jam, jelly, marmalade, preserves, candies, glazed and crystallized fruits, problems encountered in preparation and FPO specification. (12 Hours)

UNIT III

Preservation by using chemicals and salt - chemical preservatives - role of preservation - permitted preservatives and levels - preparation and preservation of fruit juices, pickling - types of pickles. (12 Hours)

UNIT IV

Bakery - Role of raw materials and optional raw materials used in baking

Cookies - Preparation, principles, methods, types, faults and causes. (13 Hours)

UNIT V

Cake - Ingredients, principles involved while preparing cake, methods, characteristics of cake, cake faults and their causes. Bread making - Methods, steps, characteristics of bread, bread faults and their causes. (13 Hours)

REFERENCE BOOKS

1. Ashokkumar, Y. (2006). *Theory of bakery and confectionery*. TamilNadu: Visiga publication.
2. Desrosier, N.W. (1963). *The technology of food preservation*. USA : Avi publishing company.
3. Vennila, P. (2003). *Principles on preservation of fruits and vegetables*, Tamilnadu: Ratna publications.

Dr.D.Vijayarani

Course Designer



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)
 An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai
Re-accredited with 'A' Grade (3rd Cycle) by NAAC
 VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester: V	HUMAN DEVELOPMENT	Hours/Week:4	
Core course - 9		Credits: 4	
Course Code 18UHSC53		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the principles and factors influencing growth and development
- know the different stages in life span, the domains of growth and development and care taken at each stage.
- acquire knowledge and skills regarding the objectives, importance and programme planning of early childhood education which provide career options in preschools/crèche and government programmes.
- understand the various methods of child study, the values of play and types of discipline in achieving positive human relationship.
- identify the causes, treatment and preventive measures of behavior problems of children and for the children with special needs.

UNIT I

Conception to Early Childhood

Definition, principles and factors affecting growth and development. Pregnancy - symptoms and complications. Prenatal stage, birth process and types of birth, antenatal and postnatal care. APGAR Scale Early childhood - Physical and motor, social, emotional and cognitive development. (13 Hours)

UNIT II

Late childhood to Old age

Late childhood - physical and motor, emotional, social and cognitive development
 Adolescence - problems, physical and motor, emotional, social and cognitive

development Adulthood - characteristics and developmental tasks Old age - characteristics, physical, physiological and psychological changes. (11 Hours)

UNIT III

Methods of Child Study

Observation, interview, questionnaire, case study, rating scale, cross sectional and longitudinal and experimental method. Play - definition, types, theories and values Psychological needs of children - Love and affection, security, achievement, approval Habits - Definition, advantages, principles of habit formation. (11 Hours)

UNIT IV

Preschool education- Meaning, objectives, importance, types, preschool setup, equipments, programme and characteristics of a preschool teacher. Behavioral Problems - causes, prevention, types - temper tantrum, thumb sucking, bed wetting, stealing, truancy and masturbation. Discipline- meaning, types. (13 Hours)

UNIT V

Children with special needs

Definition, classification - physically handicapped, hearing impaired, visually impaired, speech impaired, mentally handicapped, gifted, emotionally and socially maladjusted children. Special education services. (12 Hours)

REFERENCE BOOKS

1. Berk,L.E. (2010). *Child development*. (9th Eds.). New Delhi: PHI learning private ltd.
2. Devadas, R.P. & Jaya.N. (1991). *Textbook on child development*. India : Macmillan and co.
3. Hurlock, B. (1980). *Developmental psychology*. NewDelhi : McGraw-Hill Publishing company Ltd.
4. Suriakanthi, A. (1989). *Child development an introduction*. Tamilnadu: Kavitha publications.

Dr.D.Vijayarani
Course Designer



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)
 An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai
Re-accredited with 'A' Grade (3rd Cycle) by NAAC
 VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester V	FAMILY RESOURCE MANAGEMENT	Hours/Week: 4	
DSEC-1		Credits: 4	
Course Code 18UHSE51		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- recognize the concept of management process and its value, goals and standards.
- utilize the resources and decision making techniques to meet the goals of the standard of living.
- realize the importance of money management and types of income.
- promote the skills in improving the family income by following the principles of investments.
- utilize the time and energy in an efficient and effective way to overcome the fatigue.
- promote the professional competency to grab the career options and enhance the entrepreneurial skills to engage in business venture.

UNIT I

Home management - definition, Factors motivating management - Values, Goals and Standards. Human Values - meaning and classification. Goal - meaning and types Standards - Meaning and types. Relationship of values, Goals and standards. (12 Hours)

UNIT II

Resources - meaning, classification and characteristics of resources, factors affecting use of resources, Process of management - planning, controlling and evaluation Decision making - meaning and steps in decision making. (12 Hours)

UNIT III

Management of money- types of income - Money income, Real income and Psychic income, various ways to improve the income of the family. Family budget - definition, its importance and steps in making budget. Account keeping - meaning, importance and account keeping systems. (12 Hours)

UNIT IV

Savings - definition, its importance and methods of saving family income.
Investment - meaning, types of investment, principles involved in investment. (12 Hours)

UNIT V

Time Management - steps in making time plan, tools in time management
Energy management - fatigue, types of fatigue and ways to overcome fatigue. Work simplification - definition, Techniques, Mundel's classes of changes. (12 Hours)

REFERENCE BOOKS

1. Deacon, R.E. and Firebaugh, F.M. (1975). *Home management context and concept*. Boston: Houghton, Mifflin company.
2. Gross, I.H., Crandall, E.W. and Knoll, M.M. (1980). *Management for modern families*. New Jersey: Prentice hall.
3. Nickell, P. and Dorsey, J.M. (1978). *Management in family living*. New Delhi: John Wiley and sons.
4. Varghese, M.A. (2006). *Home management*. New Delhi: New Age International private ltd.

Mrs.S.Balasaraswathi
Course Designer



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)
 An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai
Re-accredited with 'A' Grade (3rd Cycle) by NAAC
 VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester V	BIOSTATISTICS	Hours/Week: 4	
DSEC – 1		Credits: 4	
Course Code 18UHSE52		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the principle concept of statistics.
- identify the suitable sample by using various sampling methods for the selection of the sample for research.
- collect data relating to variables which will be examined.
- Compute central tendency and dispersion using descriptive tools.
- Interpret Correlation and Regression results accurately and effectively.
- Promote skills in analyzing data which will be helpful for carrier options.

UNIT I

Statistics - meaning, importance, limitations. Data - definition, types - primary data and secondary data, sources, collection methods, advantages and disadvantages.

(10 Hours)

UNIT II

Sampling- definition, advantages, limitations. Probability sampling – simple random sampling, restricted random sampling, stratified sampling. Non probability sampling – judgment sampling, quota sampling and convenience sampling.

(11 Hours)

UNIT III

Diagrammatic representation - advantages, limitations, types - one dimensional, two dimensional, three dimensional, pictogram and cartogram. Graphic representation -

advantages, types - graphs of frequency distribution and graphs of time series.
Tabulation - meaning, parts of tabulation, types of table. (13 Hours)

UNIT IV

Measures of central tendency – mean, median, mode. Measures of dispersion - range, mean deviation and standard deviation. (13 Hours)

UNIT V

Correlation - definition, significance and types. Regression - definition, significance and methods. Difference between correlation and regression. (13 Hours)

REFERENCES

1. Arumugam, N. (2010). *Biostatistics computer application bioinformatics instrumentation*. Nagercoil: Saras publication.
2. Gupta, S.P. (2005). *Statistical methods*. New Delhi: Sultan chand and sons.
3. Gurumani, N. (2005). *An introduction to biostatistics*. Chennai: MJP publishers.
4. Pillai, R.S.N. (2005). *Statistics*. New Delhi: Chand and company ltd.

Dr.D.Vijayarani
Course Designer

V.V. VANNIAPERUMAL COLLEGE FOR WOMEN



(Belonging to Virudhunagar Hindu Nadars)
 An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai
Re-accredited with 'A' Grade (3rd Cycle) by NAAC
 VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester V	TEXTILE TESTING	Hours/Week: 4	
DSEC – 1		Credits: 4	
Course Code 18UHSE53		Internal 25	External 75

COURSE OUTCOME

On completion of the course, students will be able to

- recall the primary and secondary properties of textile fibres
- make use of the textile skills in fibre testing.
- discover the method suitable for physical testing of fibre, yarn and fabric.
- assess the properties of dyed and finished fabrics.
- predict the changes occur in textiles and fabric properties during textile processing

UNIT I

Testing of fibres- length, importance of fibre length, methods of measuring fibre length, hand stapling method, baer sorter and digital fibrograph. Fibre fineness- importance, methods of measurement, micronaire. Fibre maturity -importance, estimation by swelling method. Fibre strength - importance, measurement by pressley tester. (18 hours)

UNIT II

Evaluation of yarns – direct system, indirect and metric system, quadrant balance, physical balance, Twist - Importance of twist, twist estimation- single yarn, untwist,

twist method. Yarn diameter, yarn strength - single yarn strength, lea strength. Yarn evenness. (18 hours)

UNIT III

Evaluation of woven fabrics- physical tests; tensile strength, length and width, IS method, fabric thickness, fabric weight, count, stiffness, drape, abrasion, pilling, crease recovery and air permeability. (18 hours)

UNIT IV

Evaluation of wet ability - sinking, wicking, drop , water repellency , color fastness ; sunlight, artificial sunlight, wash, crocking and pressing. (18 hours)

UNIT V

Evaluation of Knitted fabrics - Bursting strength analysis, wales, coarse, GSM, Drapability, thickness and colour fastness properties. Dimensional stability, absorbency tests; sinking, drop, capillary raise test. (18 hours)

REFERENCES BOOKS

1. Jewel, R. (2009). *Textile Testing*, New Delhi: APH Publishing Corporation.
2. Rastogi, M. (2009). *Fibres and yarn*, New Delhi : Sonali Publications.
3. Jinlian H.U.,(2008). *Fabric Testing*, Cambridge England : Wood Head Publishing Limited.
4. Anandjiwala,R., Hunter, L., Kozlowski, R. and Zaikov, G.(2007). *Textiles for Sustainable Development*, New York : Nova Science Publications, Inc.
5. Sheraz, A., Rasheed Abher, R., Afzal, A. and Faheem, A. (2017), *Advanced Textile Testing Techniques*, US: Taylor and Francis.
6. Lijing, W. (2016), *Performance Testing of Textiles, Methods, Technology and Applications*, Woodhead Publishing, Elsevier Ltd., USA.

Dr.D.Vijayarani
Course Designer



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester V	FOOD SAFETY AND QUALITY CONTROL	Hours/Week: 2	
Skill Enhancement Course -4		Credits: 2	
Course Code 18UHSS51		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the principles and methods of food quality control.
- inspect the types of hazards which affect food safety.
- analyze the various adulterants present in different foods.
- predict the role of food regulation and standards at the national and international levels.
- develop and implement an effective system for food safety using HACCP standards.

UNIT I

Quality Control - Meaning, principles of quality control of food - raw material control, process control and finished product inspection. Total quality management.

(6 Hours)

UNIT II

Food safety - Definition - food related hazards - physical, biological and chemical toxicants.

(5 Hours)

UNIT III

Food Adulteration: Types - Intentional and Incidental. Adulterants - contamination of food with toxic metals, pesticides and insecticides – Simple tests to

detect common adulterants. Food additives - meaning, need, types, additives and food safety (6 Hours)

UNIT IV

Food Safety and Standards (2006) - National – Voluntary - ISI and AGMARK Mandatory - PFA, FPO. International - Codex Alimentarius. Consumer Protection Act, FSSAI. Laws related to packaging, nutritional labeling, labeling provisions in existing food laws. (8 Hours)

UNIT V

A food safety assurance system - HACCP - need, benefits, principles and applications. (5 Hours)

Demonstration:

1. Detection of metanil yellow in the given food sample.
2. Check the presence of rhodamine B in the food sample.
3. Test the presence of sugar in honey.
4. Detection of NaHCO₃ (Chalk) in flour.
5. Check for the presence of vanaspati and rancidity in the ghee.
6. Check the milk for presence of proteins, urea, sugar and starch.
7. Determination of peroxide value.
8. Determination of impurities
9. Determination of the physical characteristics and presence of any additive.

REFERENCE BOOKS

1. Manay, S. and Shadaksharaswamy, M. (2010). *Food facts and principles*. New Delhi: New age international private limited.
2. Sivasankar, B.(2012). *Food processing and preservation*. New Delhi: Prentice hall of India private limited.
3. Srilakshmi, B. (2018). *Food science*. New Delhi: New age international ltd.

Dr.D.Vijayarani
Course Designer



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)
 An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai
 Re-accredited with 'A' Grade (3rd Cycle) by NAAC
 VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester V	PUBLIC NUTRITION AND HYGIENE	Hours/Week: 2	
Skill Enhancement Course -5		Credits: 2	
Course Code 18UHSS52		Internal 40	External 60

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the fundamental concept of community nutrition, health and hygiene.
- realize and enunciate health and nutrition problems, causes, consequences and its preventive measures.
- promote rational thinking, problem solving capacity to face the community nutrition problems
- develop the skills in organizing and assessing data related to health and nutritional status of an individual, groups and population and transfer lab knowledge and skills to disseminate health and nutritional messages to the rural people for promoting holistic health
- recognize the role of international and national policies and programmes to combat malnutrition among the people and acquire job opportunities in Governmental and Non-governmental organizations

UNIT I

Community nutrition - definition, factors influencing community nutrition and health Malnutrition – PEM - causes, consequences and preventive measures.

10 Hours)

UNIT II

Major nutritional intervention programmes - National Nutritional Anaemia Control Programme, Vitamin A Prophylaxis Programme, Iodine Deficiency Disorders

Programme, Policy on use of Zinc in the national programme for management of diarrhoea(2006),Mid-Day Meal Programme, ICDS. (15 Hours)

UNIT III

Nutritional assessment - objectives, methods - clinical examination, anthropometric measurement, biochemical evaluation and dietary assessment.

(20 Hours)

UNIT IV

National organizations - ICMR, NIN, CFTRI, NIPCCD International organizations - FAO, WHO, UNICEF, UNESCO, World Bank. 15 Hours)

UNIT V

Nutrition education and Hygiene

Nutrition education – definition, scope and methods

Personal Hygiene –Definition, importance of personnel hygiene, health of staff, personal appearance, sanitary practices, habits, protective clothing, importance of rest, exercise and recreation. (15 Hours)

REFERENCE BOOKS

1. Bamji,M.S.(2003).*Text book of human nutrition*. New Delhi: Oxford publishing PVT .Ltd.
2. Ghosh,S.(1992) . *The feeding and care of infants and young children*. New Delhi : Voluntary Health Association of India.
3. Roday, S. (1999). *Food hygiene and sanitation*. New Delhi: TATA McGraw - hill publishing company limited.
4. Sohi,D.(2011). *Nutrition*. India: Vikas and company.
5. Srilakshmi, B. (2018). *Nutrition science*. New Delhi: New age international PVT Ltd.

Mrs.S.Balasaraswathi
Course Designer



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)
 An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai
Re-accredited with 'A' Grade (3rd Cycle) by NAAC
 VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester VI	NUTRITIONAL BIOCHEMISTRY	Hours/Week: 5	
Core Course-10		Credits: 4	
Course Code 18UHSC61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- understand the basis of buffer systems in relation to health.
- know the biological importance of pH, buffer and water in human nutrition.
- acquire knowledge on structure and functions of biomolecules.
- analyze the physical and chemical properties of the food constituents which help in maintaining the quality of food.
- obtain knowledge regarding metabolic process of macronutrients.
- comprehend the metabolic disorders of macromolecules.
- realize the role of biomolecules in human health.

UNIT I

pH, Buffer and Water

pH - Introduction, Biological importance - pH measurement and pH regulation,
 Buffer - acid base balance, buffer systems of bicarbonate, phosphate and haemoglobin.
 Water –functions , electrolyte balance, dehydration and rehydration. (15 Hours)

UNIT II

Carbohydrates

Carbohydrates - structure, properties, metabolism - glycolysis, citric acid cycle, glycogenesis, glycogenolysis, HMP Shunt and gluconeogenesis. Metabolic disorder - glycosuria. (15 Hours)

UNIT III

Proteins and Enzymes

Amino acids and Proteins –structure and properties, reaction of amino acids- transamination, deamination and urea cycle. Metabolic disorders- Alkaptonuria, phenylketonuria, Tyrosinemias and Albinism. Enzymes- types, mechanism of enzyme action, factors affecting enzyme activity and applications of enzymes. (20 Hours)

UNIT IV

Fatty acids and Lipids

Fatty acids and Lipids - structure and properties, beta oxidation of fatty acids and ketogenesis. Metabolic disorders - Ketosis, Gouchers disease, Niemann pick disease and Taysach's diseases. (15 Hours)

UNIT V

Nucleic acids - types, structure, and biological importance. Difference between DNA and RNA, Metabolic disorders - Gout and Lesch - Nyhan syndrome. (10 Hours)

TEXT BOOK

Arumugam, N. (2014). *Biochemistry*, 5th Edition Nagercoil: Saras Publications.

REFERENCE BOOKS

1. Rao,N.M.(1992). *Medical biochemistry*. New Delhi: New age international publishers.
2. Shanmugam,A. (1998). *Fundamentals of biochemistry for medical student*. Chennai: Kartik offset printers.
3. Singh,S.P. (1986). *Principles of biochemistry*. New Delhi: CBS publishers.
4. William, P.J. (1972). *An introduction to biochemistry*. London: Van nostrand co, inc.

Mrs.S.Balasaraswathi
Course Designer



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)
 An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai
Re-accredited with 'A' Grade (3rd Cycle) by NAAC
 VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester VI	INTERNSHIP	Hours/Week: 5	
Core Course 11		Credits: 4	
Course Code		Internal	External
18UHSC62		50	50

COURSE OUTCOME

On completion of the course, students will be able to

- gain practical experience in the management of the dietary department and patient counseling for a period of one month

CONTENT

1. Observation and study of organization and management of the dietary department.
2. Understanding the medical history of the patients, study of case sheets and diagnostic tests used.
3. Planning therapeutic diets and computation of nutritive value.
4. Observation and study of
 - a. Purchase storage and issue
 - b. Production
 - c. Service
 - d. Evaluation and follow up
5. Participation in diet counselling units, experience in imparting diet counselling and understanding the records maintained in diet counseling units.



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester: VI	EXTENSION EDUCATION	Hours/Week:5	
Core course - 12		Credits: 4	
Course Code 18UHSC63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- Understand the concept, scope, objectives, principles, philosophy of extension education and types of education.
- Promote professional competent in communications, models and its components and also make use of current information technologies when communicating with individuals, groups and public.
- Impart knowledge and skills for selecting extension methods and aids appropriate for different aspects of Home Science extension education.
- Develop an ability to design a programme for planning, implementing and evaluating the Home Science extension programme.
- Assist in solving the rural problems by taking the solution from the laboratory and research centres to the rural people and explore the
- e programmes available for the development of rural people.
- Empower to become a good leader in local bodies through studying the Panchayat Raj system exist in our country and also make to fit in various government welfare sectors.

UNIT I

Extension Education and Communication:

Formal, Informal and Non-Formal education – meaning and their differences
Extension education - meaning, types, objectives, principles and philosophy. Extension Worker – definition, qualities and role. Communication – definition, objectives, types, elements, models of communication and barriers in communication. (20 Hours)

UNIT II

Extension Teaching Methods:

Individual methods - Farm and home visit, farmer's call and personal letters.
Group methods - Result demonstration, method demonstration, group meetings, study tour and puppet show. Mass methods and media - Farm publications, mass meetings, exhibition, campaign, newspaper, radio and T.V. (20 Hours)

UNIT III

Audio – Visual Aids

Definition, classification, criteria for selection and evaluation of audio-visual aids and PPT with animation.

Audio aids:

Tape records, public address system, F.M.Radio

Visual Aids:

Projected - slides, filmstrip, overhead projector, LCD and PPT. Non-projected - Chalkboard, Bulletin board, flannel graph, flash card, poster, diagram, map, chart, graph, specimen and models. (15 Hours)

UNIT IV

Programme Planning - meaning, importance, principles, criteria for good programme planning and steps in programme planning process. Democratic decentralization - meaning and definition. Panchayat Raj - meaning, three tier system of Panchayat Raj and its functions, 73rd Amendment. (10 Hours)

UNIT V

Poverty Alleviation Programmes - IRDP, TRYSEM, DWACRA, NREP, JRY, SGSY, IAY, RLEGP, NRY and Self Help Group. (10 Hours)

TEXT BOOKS

1. Dahama, O.P. and Bhatnagar, O.P. (1985). *Education and communication for development*. New Delhi: Oxford and IBH publishing co. pvt. Ltd.
2. Reddy, A. A. (1971). *Extension Education*. Andhra Pradesh: Sri Lakshmi Press.

REFERENCE BOOKS

1. Crouch, R. (1981). *Extension education and rural development*. New York: John Wiley and Sons Ltd.
2. Rathore, O.S. *et al.*, (2001). *Handbook of Extension Education*. Udaipur : Agrotech publishing academy.
3. Supe, S.V. (2017). *An introduction to extension education*. 2nd edition, New Delhi : Oxford and IBH publishing company.
4. Swaminathan, M.S. (1987). *Integrated rural development*. New Delhi: Oxford publishing.

Mrs.S.Balasaraswathi
Course Designer

V.V. VANNIAPERUMAL COLLEGE FOR WOMEN



(Belonging to Virudhunagar Hindu Nadars)
 An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai
Re-accredited with 'A' Grade (3rd Cycle) by NAAC
 VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester: V	FOOD ANALYSIS LAB	Hours/Week:3	
Core Course practical - 3		Credits: 3	
Course Code 18UHSC61P		Internal 40	External 60

1. Personal protection and conduct in Microbiology Lab.
2. Sterilization Techniques
3. Microscopy: Principles, use and maintenance.
4. Examination of yeasts, moulds, protozoa and bacteria under the microscope
5. Examination of stained organisms – Simple staining and Gram's Method of staining
6. Preparation of media for cultivation of microorganism
 - a. Agar slant
 - b. Agar stab
 - c. Agar plate
7. Methods of obtaining pure culture of microorganisms.
 - a. Spread plate
 - b. Pour plate
 - c. Streak plate
8. Enumeration of microorganisms from food sample
9. Demonstration of phosphatase test
10. Demonstration of certain types of food fermentation
11. Visit to a milk processing plant.
12. Qualitative test for sugars
 - a) Glucose
 - b) Fructose
 - c) Sucrose

d) Lactose

e) Maltose

13. Qualitative test for Proteins.
14. Qualitative test for Minerals.
15. Quantitative estimation of Reducing sugar
16. Quantitative estimation of Phosphorus
17. Quantitative estimation of Iron
18. Quantitative estimation of Vitamin C.
19. Quantitative test for protein by Lowry's method.



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)
 An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai
Re-accredited with 'A' Grade (3rd Cycle) by NAAC
 VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester: VI	FOOD PRESERVATION AND BAKERY LAB	Hours/Week:3	
Core Course - practical 4		Credits: 3	
Course Code 18UHSC62P		Interna 40	Externa 60

PRACTICALS:

1. Preparation of short and long shelf life pickles, sweet pickles, spicy and sour pickles with or without oil.
2. Preparation of jam, jellies and marmalade.
3. Preparation of preserves and candies.
4. Preparation of tomato ketchups, tomato sauce, tamarind sauce and white sauce.
5. Tomato chutney and various dry chutneys.
6. Preparation of synthetic syrups and squashes
7. Preparation of dried vegetables and vadams
8. Preparation of cakes - plain cake, sponge cake
 Icings – butter cream, royal icing
9. Preparation of cookies – short bread, sweet and salt biscuits, melting moments.
10. Preparation of pastries –puffs, danish pastry, burger and pizza

Tarts- Jam tarts



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester: VI	ART IN EVERYDAY LIFE	Hours/Week:2	
Core Course Practical - 5		Credits: 2	
Course Code 18UHSC63P		Internal 40	External 60

PRACTICAL:

- Preparation of low cost play equipment for preschool children.
- Preparation of puppets - Finger and Glove puppet
- Soft toy making
- Preparation of greeting cards
- Preparation of flower vases by using various materials
- Flower arrangement
- Ready-made floor decoration
- Preparation of wall hangings
- Apply the family resource management process in the cottage.
- Preschool Visit

PRACTICAL:

- Preparation of charts, posters, flip books, flash cards and news bulletin – rhymes and stories for preschool children and also disseminate health and nutritional messages.
- Designing handkerchief and blouses by using basic hand stitches and embroidery.
- Napkin folding
- Preparation of accessories – Bangles, anklets, earrings and rings
- Preparation of tumbler mat by using crocheting



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)
 An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai
Re-accredited with 'A' Grade (3rd Cycle) by NAAC
 VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (Semester) (2018 -19 onwards)

Semester: VI	TEXTILES AND CLOTHING	Hours/Week:5	
DSEC - 2		Credits: 4	
Course Code 18UHSE61		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- gain knowledge in various types of fiber, properties, manufacturing process and identification of textile fibres.
- acquire professional competency and skills in converting fiber into yarn, fabric and non-woven materials.
- make familiar about the basic and special finishes applied to grey goods.
- understand the concept of different types of dye, methods of dyeing and printing, traditional textiles to enhance the appearance of the fabric.
- assist to asses' knowledge on inventory, selection and care of clothing for wardrobe.
- create employability in the textile industries.

UNIT I

Introduction to textile fibres

Definition, Classification, Primary and Secondary properties and identification of textile fibres. Properties and manufacturing process of

1. Natural fibres – Cotton, Wool and Silk

2. Manmade fibres – Rayon, Polyester, Nylon.

(15 Hours)

UNIT II

Yarn construction and Fabric Construction

Yarn -Definition, Spinning – hand, mechanical spinning and chemical spinning, Yarn numbering and Yarn twist. Types of Yarns – simple, complex and textured yarns.

Weaving - Definition, types- Basic -plain, twill and satin. Decorative – Dobby, pile and jacquard. Non-Woven: Meaning of Knitting, braiding, lacing, felting and bonding.

(15 Hours)

UNIT III

Bleaching and Finishing of fabric

Bleaches- oxidizing, reducing and optical bleaches. Finishing- Definition, Need, Types- Basic finishes - boiling, bleaching, desizing, weighing, degumming, mercerizing and calendering. Special finishes- water proof and water resistant, acid and alkali finishes.

(20 Hours)

UNIT IV

Dyeing and Printing

Classification of dyes and methods of dyeing. Printing – Hand printing- Stencil, block, tie and dye, batik. Machine Printing: Roller, screen and stencil. Traditional textiles of India.

(15 Hours)

UNIT V

Selection of clothes and wardrobe planning

Selection of clothes

Qualities in fabric – thread count/ cloth count, slippage, off grain and on grain, shrinkage, textile labels, brand names. Factors influencing the choice of clothes - age, sex, income, family size, occupation, customs and tradition, climate, fashion, occasion and suitability.

Wardrobe planning

Wardrobe planning – principles, clothing inventory, wardrobe planning for an adolescent girl.

(10 Hours)

REFERENCE BOOKS

1. Dantyagi, S. (1983). *Fundamentals of textiles and their care*. New Delhi : Orient longman limited.
2. Gobi, E.P. and Vileusky, L.D. (1977). *Textiles for Modern Living*. Melbourne: Longman cheshire.
3. Joseph, M. (1972). *Introductory textile sciences*. New York: Holt rinehart and winston.

4. Joseph, M. (1980). *Essentials of textiles*. New York: Holt rinehart and winston.
5. Tortora, P.G.(1982).*Understanding textiles*. London: Collier macmillan.

Mrs.B.Ameenabeebi
Course Designer



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics

(2018 -19 onwards)

Semester VI	FOOD TOXICOLOGY	Hours/Week:5	
DSEC - 2		Credits: 4	
Course Code 18UHSE62		Internal 25	External 75

Course outcomes

On completion of the course, students will be able to

- understand the basic concepts and principles of food toxicology
- distinguish between toxins in animal and plant food stuffs.
- identify the toxicants formed during processing of foods.
- evaluate the effect of toxins on human health.
- determine the toxicants in food

UNIT I

Toxicology – definition, scope, divisions. Toxicants – definition, sources and classification. Principles of toxicology - dose response, safety, absorption, translocation, storage and excretion. (15 Hours)

UNIT II

Natural toxins in animal foodstuffs - bile acids and vitamin A, toxins occurring in marine animals - scombroid poisoning, saxitoxin, Tetramine, Tetrodotoxin, Ciguatoxin. (15 Hours)

UNIT III

Natural toxins in plant foodstuffs - natural goitrogens, cyanogenic glycosides, favism, lathyrism, lectins (hemagglutinins), Pyrrolizidine Alkaloids, Enzyme Inhibitors, Vasoactive Amines, protease inhibitors and trypsin inhibitors, Mutagens in Natural Plants. (20 Hours)

UNIT IV

Toxicants formed during food processing - polycyclic aromatic hydrocarbons, *benzol[a]pyrene*, maillard reaction products, amino acid pyrolysates, n-nitrosamines (10 Hours)

UNIT V

Effect of toxins - teratogens, carcinogens, mutagens – causes and mode of action.

Determination of Toxicants in Foods - Decision-tree protocol proposed by U.S. Food Safety Council, Qualitative and Quantitative Analyses of Toxicants in Foods , Sample Preparations , Toxicity Testing. (15 Hours)

REFERENCES BOOKS

1. Manay, S.M. and Shadaksharaswamy, M. (1987). *Food facts and principles*. New Delhi: New age international ltd.
2. Sharma, P.D.(2003). *Toxicology*. Meerut: Rastogi publications.
3. Shibamoto, T. and Bjeldanes, L.B.(1993). *Introduction to food toxicology*. California : Academic press inc.
4. Sivasankar, B. (2002). *Food processing and preservation*. New Delhi: Prentice-hall of india private ltd.
5. Sri Lakshmi. (1998). *Food science*. New Delhi: New age international ltd.
6. Subramanian, M.A.(2004). *Toxicology principles and methods*. Chennai: MJP publishers.



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (2018 -19 onwards)

Semester: VI	FRONT OFFICE MANAGEMENT	Hours/Week:5	
DSEC- 2		Credits: 4	
Course Code 18UHSE63		Internal 25	External 75

COURSE OUTCOMES

On completion of the course, students will be able to

- explain the concept of food service operation, organizational structure of front office department and its role and its duty.
- classify the guest cycle and reservation system.
- examine check in and checkout procedures in front office management.
- assess the guest relation services and safety, security measures followed in front office.
- compile the accounting procedures and in front office operations.

UNIT I Introduction to food service operations

Food Service Operations - Objectives, classification and types. Front office Department- types of rooms, plans and rates, key hotel terms, sections of front office, hierarchy pattern, qualities and functions of front office personal.

Staff, modes of communication in the front desk, co-ordination with other departments, switch board operations, operator room, telephone communication and etiquette. Practice communication skills over telephone- role play. (15 Hours)

UNIT II Reservation system

Guest cycle, types of guest, need, modes and procedure, maintaining room status, individual and group reservation, forecasting, computerized reservation system, records in the reservation desk. Handling messages, mail, room keys, paging. (15 Hours)

UNIT III Check in and check out procedures

Check in procedures-preparation for guest arrival, room assignment, registration, form, issuing room keys, escorting the guest, check out procedures-late charges, late check out, mode of settlement cash and credit.

Gaining skills and technique in checking, check-out, reservation, registration, handling guest complaints. (20 Hours)

UNIT IV Guest relation services

Objectives and importance, travel desk, bell desk, information desk, handling guest baggage, paging, currency exchange, safe deposit lockers, wakeup services, errand jobs and security measures. (10 Hours)

UNIT V Accounting

Guest billing- billing procedure, computerized billing, compiling sales and revenue, front

desk log, electronic point of sales and check out audit, Records, maintaining room status,

reservation forms, front desk statistics reports. (15 Hours)

TEXT BOOKS

1. Bhatnagar, S.K. (2009). *Front Office Management*. 2nd edition. MJP publishers.
2. James, A. (2007). *Hotel Front Office Management*. 5th edition. New Delhi: Prentice-hall of india private ltd.

REFERENCE BOOKS

1. Ismail, A. (2002). *Front Office Operation and Management*. Melbourne: Longman cheshire.
2. Baker, S., Huyton, J. and Pam Bradly, P. (2000). *Principles of Hotel Front Operation*. 2nd edition. New York: Holt rinehart and Winston.
3. Andrews, S. (2008). *Textbook of Front office Management and Operations*. 3rd edition.

Journals:

1. International Journal of Operations and Production Management.
2. International Journal of Tourism and Hospitality Research.
3. Journal on Hospitality and Tourism Management.
4. International Journal of Contemporary Hospitality Management.
5. International Journal of Business and Management Invention (IJBMI).

Mrs.S.Balasaraswathi
Course Designer



V.V. VANNIAPERUMAL COLLEGE FOR WOMEN

(Belonging to Virudhunagar Hindu Nadars)

An Autonomous Institution Affiliated to Madurai Kamaraj University, Madurai

Re-accredited with 'A' Grade (3rd Cycle) by NAAC

VIRUDHUNAGAR - 626 001

B.Sc. Home Science - Nutrition and Dietetics (2018 -19 onwards)

Semester: VI	FAMILY DYNAMICS	Hours/Week: 2	
Skill Enhancement Course - 6		Credits: 2	
Course Code 18UHSS61		Internal 40	External 60

Course outcomes

On completion of the course, students will be able to

- realize the functions of family as a basic institution
- acquaint the concept, goals and areas of adjustment in marital relationship in adherence to the marriage laws.
- understand the dynamics of family crises.
- gain knowledge on family planning methods and population education.
- recognize the welfare and rehabilitation policies and programmes to bring harmonious relationship among the family members and acquire job opportunities in family welfare and counseling centers.

UNIT I

Family – definition, characteristics and functions, types based on structure – nuclear, joint and extended family. Modern democratic family – characteristics and problems. (6 Hours)

UNIT II

Marriage – definition, functions, Preparation for marriage, adjustments and factors affecting marital life. Indian laws for Hindus, Muslims and Christians in relation to marriage. (6 Hours)

UNIT III

Crisis in family – meaning, classification – usual and expected and unexpected - suicide, mental illness, unemployment, divorce, separation, alcoholism and drug addiction. (6 Hours)

UNIT IV

Population education – Definition, objectives and content of population education. Family planning - Importance and methods. (7 Hours)

UNIT V

Sex education

Counseling - premarital and marital. (5 Hours)

REFERENCES BOOKS

1. Devadas, R.P. and Jaya.N. (1991). *Textbook on child development*. India: Macmillan and co.
2. Hurlock, E.B. (1984). *Child growth and development*. 5theds. New Delhi: McGraw hill, inc.
3. Sharma,R.N. (1982). *Indian social problems*. Bombay: Dia promoters and publishers.
4. Suriakanthi, A. (1991). *Child development an introduction*. Gandhigram, Tamilnadu: Kavitha publications.