



UNIVERSITY OF CALICUT

Abstract

General and Academic IV- Faculty of Science- Scheme and Syllabus of B.Sc. Family and Community Science Honours Programme -in tune with the CUFYUGP Regulations 2024, with effect from 2024 Admission onwards - Approved-Subject to ratification by the Academic Council-Implemented- Orders Issued

G & A - IV - J

U.O.No. 9132/2024/Admn

Dated, Calicut University.P.O, 12.06.2024

*Read:-*1.U.O.No. 3103/2024/Admn dated 22.02.2024.

2.Minutes of the meeting of the Board of Studies in Home Science(SB) held on 22.03.2024.

3.Remarks of the Dean, Faculty of Science dated 20.05.2024.

4. Orders of the Vice Chancellor in the file of even no and dated 24.05.2024.

ORDER

1. The Regulations of the Calicut University Four Year UG Programmes (CUFYUGP Regulations 2024) for Affiliated Colleges, has been implemented with effect from 2024 admission, vide paper read as (1)
2. The meeting of the Board of Studies in Home Science (SB) held on 22.03.2024, vide paper read as (2) , has approved the Scheme and Syllabus of B.Sc.Family and Community Science Honours Programme in tune with CUFYUGP Regulations 2024 ,with effect from 2024 admission .
3. The Dean, Faculty of Science vide paper read as (3) , has approved the minutes of the meeting of the Board of Studies in Home Science(SB) held on 22.03.2024.
4. Considering the urgency, the Vice Chancellor has approved the minutes of the meeting of the Board of Studies in Home Science(SB) held on 22.03.2024 and accorded sanction to implement the Scheme and Syllabus of B.Sc.Family and Community Science Honours programme with effect from 2024 admission ,subject to ratification by the Academic Council.
5. The Scheme and Syllabus of B.Sc.Family and Community Science Honours programme in tune with CUFYUGP Regulations 2024 ,is thus implemented with effect from 2024 admission .
6. Orders are issued accordingly. (Syllabus appended)

Ajayakumar T.K

Assistant Registrar

To

1.Principals of all affiliated colleges 2.DR, CDOE

Copy to: PS to VC/PA to PVC/ PA to Registrar/PA to CE/DR, DOA/JCE I/JCE IV/DoA/EX and EG Sections/GA I F/CHMK Library/Information Centres/SF/DF/FC

Forwarded / By Order

Section Officer

UNIVERSITY OF CALICUT



B.Sc. FAMILY AND COMMUNITY SCIENCE HONOURS

(MAJOR, MINOR AND GENERAL FOUNDATION COURSES)

SYLLABUS & MODEL QUESTION PAPERS

w.e.f. 2024 admission onwards

(CUFYUGP Regulations 2024)

B.Sc. FAMILY AND COMMUNITY SCIENCE
HONOURS
(MAJOR, MINOR AND GENERAL FOUNDATION COURSES)

SYLLABUS

CURRICULUM RESTRUCTURING COMMITTEE

Sl. No	Name	Designation and Address
BOARD OF STUDIES- HOME SCIENCE		
1	Dr. Thomas Ruby Mariamma (Chairperson)	Assistant Professor , Vimala College, (Autonomous), Thrissur
2	Smt. Anitha Beegum AS (Member)	Associate Professor, KAHM Unity Womens College, Manjeri
3	Dr. Betty Rani Issac (Member)	Associate Professor, St. Tresa's College (Autonomous), Ernakulam
4	Smt. Mony Geege (Member)	Assistant Professor , Vimala College, (Autonomous), Thrissur
5	Dr. Mini Joseph (Member)	Associate Professor, Government College for Women, Thirivanathapuram
6	Dr. Seeja Thomachan (Member)	Associate Professor, College of Agriculture, KAU
7	Dr.. Sharon CL (Member)	Assistant Professor, College of Agriculture, KAU
8	Dr. Megha Thampy (Member)	Assistant Professor, Morning Star College of Home Science, Angamaly
9	Dr. Shyna PK (Member)	Associate Professor, Government College for Women, Thirivanathapuram
10	Dr. Jyoti H (Member)	Associate Professor, Government College for Women, Thirivanathapuram

Faculty Members		
14	Dr. Susan Cherian Subject expert- Family Resource Management	Associate Professor, St. Tresa's College (Autonomous), Ernakulam
15	Dr. Annie Ninan Subject expert- Nutrition & Dietetics	Associate Professor, KAHM Unity Womens College, Manjeri
16	Dr Dhanya N Subject expert- Human Development	Associate Professor, St. Tresa's College (Autonomous), Ernakulam
17	Dr.Fathimathu Zuhara NV Subject expert- Food & Nutrition	Assistant Professor, KAHM Unity Womens College, Manjeri
18	Ms. Sarika V. Rajan	Assistant Professor on Contract, Savitri devi Saboo Memorial College, Kozhikode
19	Dr. Agey Pappachan T.	Assistant Professor on Contract, Vimala College (Autonomous), Thrissur
20	Ms. Alina Ann Vijay	Assistant Professor on Contract, Vimala College (Autonomous), Thrissur
21	Dr. Nivya EM	Assistant Professor on Contract, Vimala College (Autonomous), Thrissur
22	Smt. Honey S Nair	Assistant Professor on Contract, Vimala College (Autonomous), Thrissur
23	Smt. Vidya KB	Assistant Professor on Contract, Vimala College (Autonomous), Thrissur
24	Smt. Maria Johnson	Assistant Professor on Contract, Vimala College (Autonomous), Thrissur
25	Smt. Sherja K Raphael	Assistant Professor on Contract, Vimala College (Autonomous), Thrissur
26	Ms. Jismy KJ	Assistant Professor on Contract, Vimala College (Autonomous), Thrissur

PROGRAMME OUTCOMES (PO):

At the end of the graduate program at Calicut University, a student would:

PO 1	Demonstrate a profound understanding of knowledge trends and their impact on the chosen discipline of study.
PO 2	Become a team player who drives positive change through effective communication, collaborative acumen, transformative leadership, and a dedication to inclusivity.
PO 3	Demonstrate professional skills to navigate diverse career paths with confidence and adaptability
PO 4	Demonstrate proficiency in varied digital and technological tools to understand and interact with the digital world, thus effectively processing complex information.
PO 5	Emerge as an innovative problem-solver and impactful mediator, applying scientific understanding and critical thinking to address challenges and advance sustainable solutions.
PO 6	Become a responsible leader, characterized by an unwavering commitment to human values, ethical conduct, and a fervent dedication to the well-being of society and the environment.
PO 7	Emerge as a researcher and entrepreneurial leader, forging collaborative partnerships with industry, academia, and communities to contribute enduring solutions for local, regional, and global development.

PROGRAMME SPECIFIC OUTCOMES (PSO):

At the end of the BSc Family and Community Science Honours program at Calicut University, a student would:

PSO 1	Understand and appreciate the role of interdisciplinary sciences in the development and well- being of individuals, families and communities
PSO 2	Understand the sciences and technologies that enhance the quality of life of people
PSO 3	Acquire entrepreneurial skills for economic empowerment of self in particular, and community in general
PSO 4	Develop professional skills in food, nutrition, textiles, housing, product making, communication technologies and human development
PSO 5	Promotion of sustainability in different walks of life
PSO 6	Skill to assess the nutritional status of the community and help promote public health

**MINIMUM CREDIT REQUIREMENTS OF THE DIFFERENT PATHWAYS
IN THE THREE-YEAR PROGRAMME IN CUFYUGP**

Sl. No .	Academic Pathway	Major	Minor/ Other Disciplines	Foundation Courses AEC: 4 MDC: 3 SEC: 3 VAC: 3	Intern -ship	Total Credits	Example
		Each course has 4 credits		Each course has 3 credits			
1	Single Major (A)	68 (17 courses)	24 (6 courses)	39 (13 courses)	2	133	Major: Family and Community Science + six courses in different disciplines in different combinations
2	Major (A) with Multiple Disciplines (B, C)	68 (17 courses)	12 + 12 (3 + 3 = 6 courses)	39 (13 courses)	2	133	Major: Family and Community Science + Botany and Chemistry
3	Major (A) with Minor (B)	68 (17 courses)	24 (6 courses)	39 (13 courses)	2	133	Major: Family and Community Science Minor: Chemistry
4	Major (A) with Vocational Minor (B)	68 (17 courses)	24 (6 courses)	39 (13 courses)	2	133	Major: Family and Community Science Minor: Catering and Culinary Arts
Exit with UG Degree / Proceed to Fourth Year with 133 Credits							

B.Sc. FAMILY AND COMMUNITY SCIENCE HONOURS PROGRAMME

COURSE STRUCTURE FOR PATHWAYS 1 – 4

1. Single Major

2. Major with Multiple Disciplines

3. Major with Minor

4. Major with Vocational Minor

Semester	Course Code	Course Title	Total Hours	Hours/Week	Credits	Marks		
						Internal	External	Total
1	FCS1CJ101/ FCS1MN100	Core Course 1 in Major – Perspectives of Food Science	75	5	4	30	70	100
		Minor Course 1	60/ 75	4/ 5	4	30	70	100
		Minor Course 2	60/ 75	4/ 5	4	30	70	100
	ENG1FA 101(2)	Ability Enhancement Course 1– English	60	4	3	25	50	75
		Ability Enhancement Course 2 – Additional Language	45	3	3	25	50	75
		Multi-Disciplinary Course 1 – Other than Major	45	3	3	25	50	75
		Total		23/ 25	21			525
2	FCS2CJ101/ FCS2MN100	Core Course 2 in Major – Fibre to Fabric	75	5	4	30	70	100
		Minor Course 3	60/ 75	4/ 5	4	30	70	100
		Minor Course 4	60/ 75	4/ 5	4	30	70	100
	ENG2FA 103(2)	Ability Enhancement Course 3– English	60	4	3	25	50	75
		Ability Enhancement Course 4 – Additional Language	45	3	3	25	50	75
		Multi-Disciplinary Course 2 – Other than Major	45	3	3	25	50	75
		Total		23/ 25	21			525
3	FCS3CJ201/ FCS3MN200	Core Course 3 in Major – Human Physiology	60	4	4	30	70	100
	FCS3CJ202	Core Course 4 in Major – Textile Wet Processing	75	5	4	30	70	100
		Minor Course 5	60/ 75	4/ 5	4	30	70	100

		Minor Course 6	60/ 75	4/ 5	4	30	70	100
		Multi-Disciplinary Course 3 – Kerala Knowledge System	45	3	3	25	50	75
	ENG3FV 108(2)	Value-Added Course 1 – English	45	3	3	25	50	75
		Total		23/ 25	22			550
4	FCS4CJ203	Core Course 5 in Major – Human Development	75	5	4	30	70	100
	FCS4CJ204	Core Course 6 in Major – Principles of Nutrition	75	5	4	30	70	100
	FCS4CJ205	Core Course 7 in Major – Fashion design and Illustration	75	5	4	30	70	100
	ENG4FV 109(2)	Value-Added Course 2 – English	45	3	3	25	50	75
		Value-Added Course 3 – Additional Language	45	3	3	25	50	75
	ENG4FS 111(2)	Skill Enhancement Course 1 – English	60	4	3	25	50	75
		Total		25	21			525
5	FCS5CJ301	Core Course 8 in Major – Nutrition through Lifecycle	75	5	4	30	70	100
	FCS5CJ302	Core Course 9 in Major – Resource and Space Design Management	75	5	4	30	70	100
	FCS5CJ303	Core Course 10 in Major – Traditional Indian Textiles and Needlework	60	4	4	30	70	100
		Elective Course 1 in Major*	60	4	4	30	70	100
		Elective Course 2 in Major*	60	4	4	30	70	100
	FCS5FS112	Skill Enhancement Course 2- Baking and Culinary Arts	45	3	3	25	50	75
		Total		25	23			575
6	FCS6CJ304/ FCS8MN304	Core Course 11 in Major – Diet therapy	75	5	4	30	70	100

	FCS6CJ305/ FCS8MN305	Core Course 12 in Major–Apparel Construction and Care	75	5	4	30	70	100
	FCS6CJ306/ FCS8MN306	Core Course 13 in Major – Family Dynamics	60	4	4	30	70	100
		Elective Course 3 in Major*	60	4	4	30	70	100
		Elective Course 4 in Major*	60	4	4	30	70	100
	FCS6FS113	Skill Enhancement Course 3 – Landscaping and Nursery Management	45	3	3	25	50	75
	FCS6CJ349	Internship in Major (Credit for internship to be awarded only at the end of Semester 6)	60		2	50	-	50
		Total		25	25			625
Total Credits for Three Years					133			3325
7	FCS7CJ401	Core Course 14 in Major – Textile Chemistry	75	5	4	30	70	100
	FCS7CJ402	Core Course 15 in Major – Clinical and Therapeutic Nutrition	75	5	4	30	70	100
	FCS7CJ403	Core Course 16 in Major – Participatory Programme Management	75	5	4	30	70	100
	FCS7CJ404	Core Course 17 in Major – Building and Services	75	5	4	30	70	100
	FCS7CJ405	Core Course 18 in Major – Developmental Challenges	75	5	4	30	70	100
			Total		25	20		
8	FCS8CJ406/ FCS8MN406	Core Course 19 in Major – Advanced Food Science	75	5	4	30	70	100
	FCS8CJ407/ FCS8MN407	Core Course 20 in Major – Finance and Consumer Behaviour	60	4	4	30	70	100
	FCS8CJ408/ FCS8MN408	Core Course 21 in Major – Technical Textiles	60	4	4	30	70	100
	OR (instead of Core Courses 19 - 21 in Major)							

FCS8CJ449	Project (in Honours programme)	360	13***	12	90	210	300
FCS8CJ499	Research Project (in Honours with Research programme)	360	13***	12	90	210	300
	Elective Course 5 in Major** / Minor Course 7	60	4	4	30	70	100
	Elective Course 6 in Major** / Minor Course 8	60	4	4	30	70	100
	Elective Course 7 in Major** / Minor Course 9 / Major Course in any Other Discipline	60	4	4	30	70	100
OR (instead of Elective Course 7 in Major, in the case of Honours with Research Programme)							
FCS8CJ489	Research Methodology	60	4	4	30	70	100
	Total		25	24			600
Total Credits for Four Years					177		4425

*Choose any two elective courses each from the course basket of eight elective courses each from semester 5 and semester 6 as listed below in the table of electives with specialisation.

**Choose any three elective courses from the course basket of six elective courses in semester 8, as listed below in the table of electives with no specialisation.

*** The teacher should have 13 hrs/week of engagement (the hours corresponding to the three core courses) in the guidance of the Project(s) in Honours programme and Honours with Research programme, while each student should have 24 hrs/week of engagement in the Project work. Total hours are given based on the student's engagement.

CREDIT DISTRIBUTION FOR PATHWAYS 1 – 4

- | | |
|---------------------|------------------------------------|
| 1. Single Major | 2. Major with Multiple Disciplines |
| 3. Major with Minor | 4. Major with Vocational Minor |

Semester	Major Courses	Minor Courses	General Foundation Courses	Internship/ Project	Total
1	4	4 + 4	3 + 3 + 3	-	21
2	4	4 + 4	3 + 3 + 3	-	21
3	4 + 4	4 + 4	3 + 3	-	22
4	4 + 4 + 4	-	3 + 3 + 3	-	21
5	4 + 4 + 4 + 4 + 4	-	3	-	23
6	4 + 4 + 4 + 4 + 4	-	3	2	25
Total for Three Years	68	24	39	2	133
7	4 + 4 + 4 + 4 + 4	-	-	-	20
8	4 + 4 + 4	4 + 4 + 4	-	12*	24
* Instead of three Major courses					
Total for Four Years	88 + 12 = 100	36	39	2	177

**DISTRIBUTION OF MAJOR COURSES IN FAMILY AND COMMUNITY
SCIENCE
FOR PATHWAYS 1 – 4**

1. Single Major

2. Major with Multiple Disciplines

3. Major with Minor

4. Major with Vocational Minor

Semester	Course Code	Course Title	Hours/ Week	Credits
1	FCS1CJ101/ FCS1MN100	Core Course 1 in Major – Perspectives of Food Science	5	4
2	FCS2CJ101/ FCS2MN100	Core Course 2 in Major – Fibre to Fabric	5	4
3	FCS3CJ201/ FCS3MN200	Core Course 3 in Major – Human Physiology	4	4
	FCS3CJ202	Core Course 4 in Major – Textile Wet Processing	5	4
4	FCS4CJ203	Core Course 5 in Major – Human Development	5	4
	FCS4CJ204	Core Course 6 in Major – Principles of Nutrition	5	4
	FCS4CJ205	Core Course 7 in Major – Fashion Design and Illustration	5	4
5	FCS5CJ301	Core Course 8 in Major – Nutrition through Lifecycle	5	4
	FCS5CJ302	Core Course 9 in Major – Resource & Space Design Management	5	4
	FCS5CJ303	Core Course 10 in Major – Traditional Indian Textiles and Needlework	4	4
		Elective Course 1 in Major*	4	4

		Elective Course 2 in Major*	4	4
6	FCS6CJ304/ FCS8MN304	Core Course 11 in Major – Diet Therapy	5	4
	FCS6CJ305/ FCS8MN305	Core Course 12 in Major – Apparel Construction and Care	5	4
	FCS6CJ306/ FCS8MN306	Core Course 13 in Major – Family Dynamics	4	4
		Elective Course 3 in Major*	4	4
		Elective Course 4 in Major*	4	4
	FCS6CJ349	Internship in Major	-	2
Total for the Three Years				70
7	FCS7CJ401	Core Course 14 in Major – Textile Chemistry	5	4
	FCS7CJ402	Core Course 15 in Major – Clinical and Therapeutic Nutrition	5	4
	FCS7CJ403	Core Course 16 in Major – Participatory Programme Management	5	4
	FCS7CJ404	Core Course 17 in Major – Building and Services	5	4
	FCS7CJ405	Core Course 18 in Major – Developmental Challenges	5	4
	FCS8CJ406/ FCS8MN406	Core Course 19 in Major – Advanced Food Science	5	4
	FCS8CJ407/ FCS8MN407	Core Course 20 in Major – Finance and Consumer Behaviour	4	4
	FCS8CJ408/ FCS8MN408	Core Course 21 in Major – Technical Textiles	4	4
	OR (instead of Core Courses 19 – 21 in Major)			
	FCS8CJ449	Project (in Honours programme)	13	12
	FCS8CJ499	Research Project (in Honours with Research programme)	13	12

8		Elective Course 5 in Major**	4	4
		Elective Course 6 in Major**	4	4
		Elective Course 7 in Major**	4	4
	OR (instead of Elective course 7 in Major, in Honours with Research programme)			
	FCS8CJ489	Research Methodology	4	4
Total for the Four Years				114

*Choose any two elective courses each from the course basket of eight elective courses each from semester 5 and semester 6 as listed below in the table of electives with specialisation.

**Choose any three elective courses from the course basket of six elective courses in semester 8, as listed below in the table of electives with no specialisation.

ELECTIVE COURSES IN FAMILY AND COMMUNITY SCIENCE WITH SPECIALISATION

Group No.	Sl. No.	Course Code	Title	Semester	Total Hrs	Hrs/Week	Credits	Marks		
								Internal	External	Total
1	CLINICAL NUTRITION & DIETETICS									
	1	FCS5EJ301(1)	Food Microbiology	5	60	4	4	30	70	100
	2	FCS5EJ302(1)	Food Service Management	5	60	4	4	30	70	100
	3	FCS6EJ301(1)	Nutrition for Health and Fitness	6	60	4	4	30	70	100
	4	FCS6EJ302(1)	Nutrition Counselling and Education	6	60	4	4	30	70	100
2	HUMAN DEVELOPMENT									
	1	FCS5EJ303(2)	Child Rights and Welfare	5	60	4	4	30	70	100
	2	FCS5EJ304(2)	Early Childhood Care and	5	60	4	4	30	70	100

			Intervention							
	3	FCS6EJ303(2)	Adulthood and Aging	6	60	4	4	30	70	100
	4	FCS6EJ304(2)	Guidance and Counselling	6	60	4	4	30	70	100
3	FAMILY RESOURCE MANGEMENT									
	1	FCS5EJ305(3)	Furniture and Furnishings in Interiors	5	60	4	4	30	70	100
	2	FCS5EJ306(3)	Hospitality and Housekeeping	5	60	4	4	30	70	100
	3	FCS6EJ305(3)	Sustainable resources	6	60	4	4	30	70	100
	4	FCS6EJ306(3)	Ergonomics	6	60	4	4	30	70	100
4	EXTENSION EDUCATION									
	1	FCS5EJ307(4)	Extension Education	5	60	4	4	30	70	100
	2	FCS5EJ308(4)	Community Development	5	60	4	4	30	70	100
	3	FCS6EJ307(4)	Women Studies	6	60	4	4	30	70	100
	4	FCS6EJ308(4)	Entrepreneurship Management	6	60	4	4	30	70	100

ELECTIVE COURSES IN FAMILY AND COMMUNITY SCIENCE WITH NO SPECIALISATION

Sl. No.	Course Code	Title	Semester	Total Hrs	Hrs/Week	Credits	Marks		
							Internal	External	Total
1	FCS8EJ401	Macronutrients	8	60	4	4	30	70	100
2	FCS8EJ402	Visual Merchandising	8	60	4	4	30	70	100
3	FCS8EJ403	Oncology Nutrition	8	60	4	4	30	70	100
4	FCS8EJ404	Art and Textile Design	8	60	4	4	30	70	100
5	FCS8EJ405	Public Health & Sanitation	8	60	4	4	30	70	100
6	FCS8EJ406	Fashion Psychology	8	60	4	4	30	70	100

GROUPING OF MINOR COURSES IN FAMILY AND COMMUNITY SCIENCE

The minor/Vocational minor courses given below should not be offered to students who have taken Family and Community Science as their Major discipline. They should be offered to the students from other major disciplines only.

(Title of the Minor: **FOOD AND NUTRITION**)

Group No.	Sl. No.	Course Code	Title	Semester	Total Hrs	Hrs/Week	Credits	Marks		
								Internal	External	Total
1		NUTRITION AND DIETETICS (preferable for Biochemistry/Microbiology students)								
	1	FCS1MN 101	Human Nutrition	1	75	5	4	30	70	100
	2	FCS2MN 101	Diet and Health	2	75	5	4	30	70	100
	3	FCS3MN 201	Nutrition Counselling	3	75	5	4	30	70	100
2		FOOD SCIENCE AND NUTRITION (preferable for Biochemistry/Microbiology students)								
	1	FCS1MN 102	Basics of Food Science	1	75	5	4	30	70	100
	2	FCS2MN 102	Food Preservation	2	75	5	4	30	70	100
	3	FCS3MN 202	Food Toxicology	3	75	5	4	30	70	100

GROUPING OF VOCATIONAL MINOR COURSES IN FAMILY AND COMMUNITY SCIENCE

The minor/Vocational minor courses given below should not be offered to students who have taken Family and Community Science as their Major discipline. They should be offered to the students from other major disciplines only.

(Title of the Vocational Minor: **FOOD PROCESSING**)

Group No.	Sl. No.	Course Code	Title	Semester	Total Hrs	Hrs/Week	Credits	Marks		
								Internal	External	Total
1	Food Processing									
	1	FCS1VN101	Basic Bakery Management	1	75	5	4	30	70	100
	2	FCS2VN101	Fruit And Vegetable Processing	2	75	5	4	30	70	100
	3	FCS3VN201	Dairy Processing	3	75	5	4	30	70	100
	4	FCS8VN301	Food Packaging and Labelling	8	60	4	4	30	70	100
2	Food Quality Management									
	1	FCS1VN102	Spices And Plantation Crops	1	75	5	4	30	70	100
	2	FCS2VN102	Food Additives and Adulteration	2	75	5	4	30	70	100
	3	FCS3VN202	Animal Food Processing	3	75	5	4	30	70	100
	4	FCS8VN302	Food Safety And Quality Control	8	60	4	4	30	70	100

- (i). Students in Single Major pathway can choose course/courses from any of the Minor/ Vocational Minor groups offered by a discipline other than their Major discipline.
- (ii). Students in Major with Multiple Disciplines pathway can choose as one of the multiple disciplines, all the three courses from any one of the Minor/ Vocational Minor groups offered by any discipline, other than their Major discipline. If the students choose any one

of the Minor/ Vocational Minor groups in Family and Community Science as given above, then the title of the group will be the title of that multiple discipline.

(iii). Students in Major with Minor pathway can choose all the courses from any two Minor groups offered by any discipline. If the students choose any two Minor groups in Family and Community Science as given above, then the title of the Minor will be **Food and Nutrition**

(iv). Students in Major with Vocational Minor pathway can choose all the courses from any two Vocational Minor groups offered by any discipline (other than their major). If the students choose any two Vocational Minor groups in Family and Community Science as given above, then the title of the Vocational Minor will be **Food Processing**.

DISTRIBUTION OF GENERAL FOUNDATION COURSES IN FAMILY AND COMMUNITY SCIENCE

Sem	Course Code	Course Title	Total Hours	Hours/Week	Credits	Marks		
						Internal	External	Total
1	FCS1FM105	Multi-Disciplinary Course 1 – Interior Decoration	45	3	3	25	50	75
2	FCS2FM106	Multi-Disciplinary Course 2 – Family Meal Management	45	3	3	25	50	75
5	FCS5FS112	Skill Enhancement Course 2 – Baking and Culinary Arts	45	3	3	25	50	75
6	FCS6FS113	Skill Enhancement Course 3 – Landscaping and Nursery Management	45	3	3	25	50	75

EVALUATION SCHEME

1. The evaluation scheme for each course contains two parts: internal evaluation (about 30%) and external evaluation (about 70%). Each of the Major and Minor courses is of 4-credits. It is evaluated for 100 marks, out of which 30 marks is from internal evaluation and 70 marks, from external evaluation. Each of the General Foundation course is of 3-credits. It is evaluated for 75 marks, out of which 25 marks is from internal evaluation and 50 marks, from external evaluation.
2. The 4-credit courses (Major and Minor courses) are of two types: (i) courses with only theory and (ii) courses with 3-credit theory and 1-credit practical.
 - In 4-credit courses with only theory component, out of the total 5 modules of the syllabus, one open-ended module with 20% content is designed by the faculty member teaching that course, and it is internally evaluated for 10 marks. The internal evaluation of the remaining 4 theory modules is for 20 marks.
 - In 4-credit courses with 3-credit theory and 1-credit practical components, out of the total 5 modules of the syllabus, 4 modules are for theory and the fifth module is for practical. The practical component is internally evaluated for 20 marks. The internal evaluation of the 4 theory modules is for 10 marks.
3. All the 3-credit courses (General Foundational Courses) in Home Science are with only theory component. Out of the total 5 modules of the syllabus, one open-ended module with 20% content is designed by the faculty member teaching that course, and it is

internally evaluated for 5 marks. The internal evaluation of the remaining 4 theory modules is for 20 marks.

Sl. No.	Nature of the Course		Internal Evaluation in Marks (about 30% of the total)		External Exam on 4 modules (Marks)	Total Marks
			Open-ended module / Practical	On the other 4 modules		
1	4-credit course	only theory (5 modules)	10	20	70	100
2	4-credit course	Theory (4 modules) + Practical	20	10	70	100
3	3-credit course	only theory (5 modules)	5	20	50	75

1. MAJOR AND MINOR COURSES

1.1. INTERNAL EVALUATION OF THEORY COMPONENT

Sl. No.	Components of Internal Evaluation of Theory Part of a Major / Minor Course	Internal Marks for the Theory Part of a Major / Minor Course of 4-credits			
		Theory Only		Theory + Practical	
		4 Theory Modules	Open-ended Module	4 Theory Modules	Practical
1	Test paper/ Mid-semester Exam	10	4	5	-
2	Seminar/ Viva/ Quiz	6	4	3	-
3	Assignment	4	2	2	-
Total		20	10	10	20*
		30		30	

* Refer the table in section 1.2 for the evaluation of practical component

1.2. EVALUATION OF PRACTICAL COMPONENT

The evaluation of practical component in Major and Minor courses is completely by internal evaluation.

- Continuous evaluation of practical by the teacher-in-charge shall carry a weightage of 50%.
- The end-semester practical examination and viva-voce, and the evaluation of practical records shall be conducted by the teacher in-charge and an internal examiner appointed by the Department Council.
- The process of continuous evaluation of practical courses shall be completed before 10 days from the commencement of the end-semester examination.
- Those who passed in continuous evaluation alone will be permitted to appear for the end-semester examination and viva-voce.
- It is mandatory for students to be in white garments and a lab coat for all Food and Nutrition Practicals. Lab Coats are mandatory for Food analysis and chemistry related practicals in the laboratory.

The scheme of continuous evaluation and the end-semester examination and viva-voce of practical component shall be as given below:

Sl. No.	Evaluation of Practical Component of Credit-1 in a Major / Minor Course	Marks for Practical	Weightage
1	Continuous evaluation of practical/ exercise performed in practical classes by the students	10	50%
2	End-semester examination and viva-voce to be conducted by teacher-in-charge along with an additional examiner arranged internally by the Department Council	7	35%
3	Evaluation of the Practical records submitted for the end semester viva-voce examination by the teacher-in-charge and additional examiner	3	15%
Total Marks		20	

1.3. EXTERNAL EVALUATION OF THEORY COMPONENT

External evaluation carries 70% marks. Examinations will be conducted at the end of each semester. Individual questions are evaluated in marks and the total marks are converted into grades by the University based on 10-point grading system (refer section 5).

PATTERN OF QUESTION PAPER FOR MAJOR AND MINOR COURSES

Duration	Type	Total No. of Questions	No. of Questions to be Answered	Marks for Each Question	Ceiling of Marks
2 Hours	Short Answer	10	8 – 10	3	24
	Paragraph/ Problem	8	6 – 8	6	36
	Essay	2	1	10	10
Total Marks					70

2. INTERNSHIP

- All students should undergo Internship of 2-credits during the first six semesters in a firm, industry or organization, or training in labs with faculty and researchers of their own institution or other Higher Educational Institutions (HEIs) or research institutions.
- Internship can be for enhancing the employability of the student or for developing the research aptitude.
- Internship can involve hands-on training on a particular skill/ equipment/ software. It can be a short project on a specific problem or area. Attending seminars or workshops related to an area of learning or skill can be a component of Internship.
- A faculty member/ scientist/ instructor of the respective institution, where the student does the Internship, should be the supervisor of the Internship.

2.1. GUIDELINES FOR INTERNSHIP

1. Internship can be in Family and Community Science/Home Science.
2. There should be minimum 60 hrs. of engagement from the student in the Internship.
3. Summer vacations and other holidays can be used for completing the Internship.
4. In BSc. Family and Community Science Honours programme, institute/ industry visit or study tour is a requirement for the completion of Internship. Visit to minimum one national research institute/research laboratory/Industry visits should be part of the study tour. A brief report of the study tour has to be submitted with photos and analysis.
5. The students should make regular and detailed entries in to a personal log book through the period of Internship. The log book will be a record of the progress of the Internship and the time spent on the work, and it will be useful in writing the final report. All entries should be dated. The Internship supervisor should periodically examine and countersign the log book.
6. The log book and the typed report must be submitted at the end of the Internship.
7. The institution at which the Internship will be carried out should be prior-approved by the Department Council of the college where the student has enrolled for the UG Honours programme.

2.2. EVALUATION OF INTERNSHIP

- The evaluation of Internship shall be done internally through continuous assessment mode by a committee internally constituted by the Department Council of the college where the student has enrolled for the UG Honours programme.
- The credits and marks for the Internship will be awarded only at the end of semester 6.
- The scheme of continuous evaluation and the end-semester viva-voce examination based on the submitted report shall be as given below:

Sl. No.	Components of Evaluation of Internship		Marks for Internship 2 Credits	Weightage
1	Continuous evaluation of internship through interim presentations and reports by the committee internally constituted by the Department Council	Acquisition of skill set	10	40%
2		Interim Presentation and Viva-voce	5	
3		Punctuality and Log Book	5	
4	Report of Institute Visit/ Study Tour		5	10%
5	End-semester viva-voce examination to be conducted by the committee internally constituted by the Department Council	Quality of the work	6	35%
6		Presentation of the work	5	
7		Viva-voce	6	
8	Evaluation of the day-to-day records, the report of internship supervisor, and final report submitted for the end semester viva-voce examination before the committee internally constituted by the Department Council		8	15%
Total Marks			50	

3. PROJECT

3.1. PROJECT IN HONOURS PROGRAMME

- In Honours programme, the student has the option to do a Project of 12-credits instead of three Core Courses in Major in semester 8.
- The Project can be done in the same institution or any other higher educational institution (HEI) or research centre.
- Project in Honours programme can be a short research work or an extended internship or a skill-based training programme.
- A faculty member of the respective institution, where the student does the Project, should be the supervisor of the Project.

3.2. PROJECT IN HONOURS WITH RESEARCH PROGRAMME

- Students who secure 75% marks and above (equivalently, CGPA 7.5 and above) cumulatively in the first six semesters are eligible to get selected to Honours with Research stream in the fourth year.
- relaxation of 5% in marks (equivalently, a relaxation of 0.5 grade in CGPA) is allowed for those belonging to SC/ ST/ OBC (non-creamy layer)/ Differently-Abled/ Economically Weaker Section (EWS)/ other categories of candidates as per the decision of the UGC from time to time.
- In Honours with Research programme, the student has to do a mandatory Research Project of 12-credits instead of three core courses in semester 8.
- The approved research centres of University of Calicut or any other university/ HEI can offer the Honours with Research programme. The departments in the affiliated colleges under University of Calicut, which are not the approved research centres of the University, should get prior approval from the University to offer the Honours with Research programme. Such departments should have minimum two faculty member with Ph.D., and they should also have the necessary infrastructure to offer Honours with Research programme.
- A faculty member of the University/ College with a Ph.D. degree can supervise the research project of the students who have enrolled for Honours with Research. One such faculty member can supervise maximum five students in Honours with Research stream.
- The maximum intake of the department for Honours with Research programme is fixed by the department based on the number of faculty members eligible for project supervision, and other academic, research, and infrastructural facilities available.
- If a greater number of eligible students are opting for the Honours with Research programme than the number of available seats, then the allotment shall be based on the existing rules of reservations and merits.

3.3. GUIDELINES FOR THE PROJECT IN HONOURS PROGRAMME AND HONOURS WITH RESEARCH PROGRAMME

1. Project can be in any branch of specialization in Home Science.
2. Project should be done individually.
3. Project work can be of experimental/ intervention study/product development in nature.
4. There should be minimum 360 hrs. of engagement from the student in the Project work in Honours programme.
5. There should be minimum 13 hrs./week of engagement (the hours corresponding to the three core courses in Major in semester 8) from the teacher in the guidance of the Project(s) in Honours programme and Honours with Research programme.
6. The various steps in project works are the following:
 - Wide review of a topic.
 - Investigation on a problem in systematic way using appropriate techniques.
 - Systematic recording of the work.
 - Reporting the results with interpretation in a standard documented form.
 - Presenting the results before the examiners.
7. The typed report must be submitted at the end of the Project. A copy of the report should be kept for reference at the department. A soft copy of the report too should be submitted, to be sent to the external examiner in advance.
8. It is desirable, but not mandatory, to publish the results of the Project in a peer reviewed journal.
9. The project report shall have an undertaking from the student and a certificate from the research supervisor for originality of the work, stating that there is no plagiarism, and that the work has not been submitted for the award of any other degree/ diploma in the same institution or any other institution.
10. The project proposal, institution at which the project is being carried out, and the project supervisor should be prior-approved by the Department Council of the college where the student has enrolled for the UG Honours programme.

3.4. EVALUATION OF PROJECT

- The evaluation of Project will be conducted at the end of the eighth semester by both internal and external modes.
- The Project in Honours programme as well as that in Honours with Research programme will be evaluated for 300 marks. Out of this, 90 marks is from internal evaluation and 210 marks, from external evaluation.
- The internal evaluation of the Project work shall be done through continuous assessment mode by a committee internally constituted by the Department Council of the college where the student has enrolled for the UG Honours programme. 30% of the weightage shall be given through this mode.
- The remaining 70% shall be awarded by the external examiner appointed by the University.
- The scheme of continuous evaluation and the end-semester viva-voce of the Project shall be as given below:

Components of Evaluation of Project	Marks for the Project (Honours/ Honours with Research)	Weightage
Continuous evaluation of project work through interim presentations and reports by the committee internally constituted by the Department Council	90	30%
End-semester viva-voce examination to be conducted by the external examiner appointed by the university	150	50%
Evaluation of the day-to-day records and project report submitted for the end-semester viva-voce examination conducted by the external examiner	60	20%
Total Marks	300	

INTERNAL EVALUATION OF PROJECT

Sl. No	Components of Evaluation of Project	Marks for the Research Project (Honours /Honours with Research) 12 credits
1	Skill in doing project work	30
2	Interim Presentation and Viva-Voce	20
3	Punctuality & Scientific temper	20
4	Scheme/ Organization of Project Report	20
Total Marks		90

EXTERNAL EVALUATION OF PROJECT

Sl. No	Components of Evaluation of Project	Marks for the Research Project (Honours/Honours with Research) 12 credits
1	Content and relevance of the Project, Methodology, Quality of analysis, and Innovations of Research	50
2	Presentation of the Project	50
3	Project Report (typed copy) and References	60
4	Viva-Voce	50
Total Marks		210

4. GENERAL FOUNDATION COURSES

- All the General Foundation Courses (3-credits) in Home Science are with only theory component.

4.1. INTERNAL EVALUATION

Sl. No.	Components of Internal Evaluation of a General Foundation Course in Physics	Internal Marks of a General Foundation Course of 3-credits in Physics	
		4 Theory Modules	Open-ended Module
1	Test paper/ Mid-semester Exam	10	2
2	Seminar/ Viva/ Quiz	6	2
3	Assignment	4	1
Total		20	5
		25	

4.2. EXTERNAL EVALUATION

External evaluation carries about 70% marks. Examinations will be conducted at the end of each semester. Individual questions are evaluated in marks and the total marks are converted into grades by the University based on 10-point grading system (refer section 5).

PATTERN OF QUESTION PAPER FOR GENERAL FOUNDATION COURSES

Duration	Type	Total No. of Questions	No. of Questions to be Answered	Marks for Each Question	Ceiling of Marks
1.5 Hours	Short Answer	10	8 – 10	2	16
	Paragraph/ Problem	5	4 – 5	6	24
	Essay	2	1	10	10
Total Marks					50

5. LETTER GRADES AND GRADE POINTS

- Mark system is followed for evaluating each question.
- For each course in the semester letter grade and grade point are introduced in 10-point indirect grading system as per guidelines given below.
- The Semester Grade Point Average (SGPA) is computed from the grades as a measure of the student's performance in a given semester.

- The Cumulative GPA (CGPA) is based on the grades in all courses taken after joining the programme of study.
- Only the weighted grade point based on marks obtained shall be displayed on the grade card issued to the students.

LETTER GRADES AND GRADE POINTS

Sl. No.	Percentage of Marks (Internal & External Put Together)	Description	Letter Grade	Grade Point	Range of Grade Points	Class
1	95% and above	Outstanding	O	10	9.50 – 10	First Class with Distinction
2	Above 85% and below 95%	Excellent	A+	9	8.50 – 9.49	
3	75% to below 85%	Very Good	A	8	7.50 – 8.49	
4	65% to below 75%	Good	B+	7	6.50 – 7.49	First Class
5	55% to below 65%	Above Average	B	6	5.50 – 6.49	
6	45% to below 55%	Average	C	5	4.50 – 5.49	Second Class
7	35% to below 45% aggregate (internal and external put together) with a minimum of 30% in external valuation	Pass	P	4	3.50 – 4.49	Third Class
8	Below an aggregate of 35% or below 30% in external evaluation	Fail	F	0	0 – 3.49	Fail
9	Not attending the examination	Absent	Ab	0	0	Fail

- When students take audit courses, they will be given Pass (P) or Fail (F) grade without any credits.
- The successful completion of all the courses and capstone components prescribed for the three-year or four-year programme with 'P' grade shall be the minimum requirement for the award of UG Degree or UG Degree Honours or UG Degree Honours with Research, as the case may be.

5.1. COMPUTATION OF SGPA AND CGPA

- The following method shall be used to compute the Semester Grade Point Average (SGPA):

The SGPA equals the product of the number of credits (C_i) with the grade points (G_i) scored by a student in each course in a semester, summed over all the courses taken by a student in the semester, and then divided by the total number of credits of all the courses taken by the student in the semester,

$$\text{i.e. SGPA } (S_i) = \frac{\sum_i (C_i \times G_i)}{\sum_i (C_i)}$$

where C_i is the number of credits of the i^{th} course and G_i is the grade point scored by the student in the i^{th} course in the given semester. Credit Point of a course is the value obtained by multiplying the credit (C_i) of the course by the grade point (G_i) of the course.

$$\text{SGPA} = \frac{\text{Sum of the credit points of all the courses in a semester}}{\text{Total credits in that semester}}$$

ILLUSTRATION – COMPUTATION OF SGPA

Semester	Course	Credit	Letter Grade	Grade point	Credit Point (Credit x Grade)
I	Course 1	3	A	8	3 x 8 = 24
I	Course 2	4	B+	7	4 x 7 = 28
I	Course 3	3	B	6	3 x 6 = 18
I	Course 4	3	O	10	3 x 10 = 30
I	Course 5	3	C	5	3 x 5 = 15
I	Course 6	4	B	6	4 x 6 = 24
	Total	20			139
	SGPA				139/20 = 6.950

- The Cumulative Grade Point Average (CGPA) of the student shall be calculated at the end of a programme. The CGPA of a student determines the overall academic level of the student in a programme and is the criterion for ranking the students.

CGPA for the three-year programme in CUFYUGP shall be calculated by the following formula.

$$\text{CGPA} = \frac{\text{Sum of the credit points of all the courses in six semesters}}{\text{Total credits in six semesters (133)}}$$

CGPA for the four-year programme in CUFYUGP shall be calculated by the following formula.

$$\text{CGPA} = \frac{\text{Sum of the credit points of all the courses in eight semesters}}{\text{Total credits in eight semesters (177)}}$$

- The SGPA and CGPA shall be rounded off to three decimal points and reported in the transcripts.

Based on the above letter grades, grade points, SGPA and CGPA, the University shall issue the transcript for each semester and a consolidated transcript indicating the performance in all semesters.

SEMESTER I

Programme	B. Sc. Family and Community Science				
Course Title	PERSPECTIVES OF FOOD SCIENCE				
Type of Course	Major				
Semester	I				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basics in Science				
Course Summary	A course in Perspectives of Food Science will provide students with a comprehensive understanding the fundamentals of food , methods of food preparation, composition of different foods and principles of food preservation. This course will prepare students for careers in food production, quality assurance and research in the food industry.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Summarize the fundamentals of Food Science.	U	C	Instructor-created exams / Quiz
CO2	Identify the scientific principles underlying food preparation.	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Explain the structure, composition and nutritional quality of plant and animal foods.	R	C	Seminar Presentation / Group Tutorial Work
CO4	State the nutritional quality of different foods	U	C	Instructor-created exams / Home Assignments
CO5	Apply the food preservation techniques.	Ap	P	Practical skills/Writing assignments

* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)

- Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive

Knowledge (M)

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Introduction to Food Science		5	12
	1	Definition, Classification of foods and Terms used in Food Science.	1	
	2	Health, Food, Nutrition, Nutrients: Macronutrients (Carbohydrates, Proteins and lipids) and Micronutrients (Vitamins and Minerals).	1	
	3	food groups (Basic food group system – (ICMR), My Healthy Plate, Balanced diet.	2	
	4	Functions of foods – Physiological, Psychological and Social Functions.	1	
II	Study of plant foods		20	31
	5	Study of Cereals Types, Composition , Nutritive value and products . Processing -parboiling - merits and demerits, cereal protein - gluten formation, cereal starch -structure, effect of cooking – dry and moist heat.	4	
	6	Study of Millets - Types, Nutritive value and Health benefits.	3	
	7	Study of Pulses -Nutritive value wet milling and dry milling, processing, germination and fermentation, advantages, Anti-nutritional factors (trypsin inhibitors, lathyrism), Common pulses used in India.	3	
	8	Study of Fruits- Nutritive and antioxidant value, pigments, flavour components, changes in fruits during ripening, storage of fruits.	2	
	9	Study of Vegetables - Classification, nutritive value, selection, vegetable cookery- loss of nutrients during cooking, conservation of nutrients, pigments, effect of acid and alkali, Enzymatic browning-	4	

		methods of prevention		
	10	Study of Nuts, oil seeds, Spices and condiments Types and Nutritive Composition and health benefits	4	
III	Study of animal Foods		15	43
	11	Study of Milk and Milk Milk and milk products - Composition and nutritive value, pasteurization and homogenization– advantages, types of milk and milk products.	5	
	12	Study of Meat- Structure, composition and nutritive value, post mortem changes - rigor mortis, effect of cooking on meat, types of meat and products.	4	
	13	Study of Fish - Classification, nutritive value, selection, fish spoilage	3	
	14	Study of Eggs - Structure and nutritive value, evaluation of egg quality, deterioration in egg quality during storage, egg white foam -stages, factors affecting foam formation, culinary role of eggs, designer eggs.	3	
IV	Food preservation		5	12
	18	Principles and objectives	1	
	19	Methods of food preservation	1	
	20	Preservatives	1	
	21	Dehydration	1	
	22	Irradiation	1	
V	Open Ended Module: Practical		30	
		<ol style="list-style-type: none"> 1. Grouping of foods 2. Stages of sugar cookery 3. Evaluation of gluten content in a flour 4. Components of an egg by weight 5. Stages of egg white foam formation 6. Changes of meat during cooking 		

		<p>7. Effect of cooking on vegetable pigments</p> <p>8. Methods to prevent enzymatic browning in fruits</p> <p>9. Non enzymatic browning in foods</p> <p>10. Food preservation techniques -any 2</p>		
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Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	1	3	1	2	3	3	1	1	1	2	3
CO 2	2	3	2	2	1	-	3	-	2	1	1	2	3
CO 3	2	2	2	2	-	-	2	-	2	1	1	2	3
CO 4	3	2	2	1	-	-	3	2	1	1	1	2	3
CO 5	2	3	3	3	2	-	3	3	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References

1. Mudambi, S.R and Rajagopal, M.V. (2001), Fundamentals of Foods and Nutrition, New Age International Publishers, New Delhi
2. Srilakshmi B. (2008), Food Science, New Age International Publishers, New Delhi
3. Marwaha, K (2007), Food Hygiene, Gene-Tech Books, New Delhi.
4. Kalia M. (2002), Food Analysis and Quality Control, Kalyani Publishers, New Delhi.
5. Frazier,W.C. and Westhoff, D.C.,(2008), Food Microbiology, Fourth Edn., Tata McGraw-Hill Publishing Co. Ltd, New Delhi
6. Sari E., (2006), Nutrition in Public Health, a handbook for developing programs and services, Second edn, Jones and Bartlett publishers, Sudbury.
7. Potter, N. N and Hotchkiss, J.H,(1996), Food Science, Fifth Edn, CBS Publishers, New Delhi.
8. Marwaha, K (2007), Food Hygiene, Gene-Tech Books, New Delhi.
9. Journal of Food Science and Technology, Association of Food Scientists and Technologists CFTRI, Mysore.

Programme	B. Sc. Family and Community Science				
Course Title	INTERIOR DECORATION				
Type of Course	MDC-I				
Semester	I				
Academic Level	100 – 199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	3	3	-	-	45
Pre-requisites	Creative aptitude				
Course Summary	This course imparts the basics of visual arts and helps individuals develop the skill in decorating interiors and formulating solutions to design problems enhancing the aesthetic appeal of the space.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the elements and principles of design to create harmonious and balanced interior	U	C	Instructor-created exams / Quiz
CO2	Explain the properties of colour and its effects on the intended style	An	P	Seminar Presentation / Group Tutorial Work
CO3	Apply knowledge of design elements to the reality of placing objects in perfect manner	Ap	P	Practical Assignment / Observation of Practical Skills
CO4	Create visual ideas about functional aspects of housing	C	M	Instructor-created exams / Home Assignments
CO5	Plan creative kitchen design by adapting principles	C	P	Practical Assignment / Observation of Practical Skills
CO6	Discover the importance of ensuring quality finishes on floor and walls to create professional and enduring interior space	U	C	Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Introduction to Interior Design		6	10
	1	Function, beauty and individuality	2	
	2	Consumer standards of beauty	2	
	3	Design- Definition and types- traditional, decorative and modern	1	
	4	Types of designs in patterns/motif- naturalistic, stylised, geometric and abstract	1	
II	Design		8	22
	5	Principles of Design	2	
	6	Elements of Design	2	
	7	Colour Theory	2	
	8	Psychological implications of colour	2	
III	Interior elements		14	26
	9	Floor finishes	2	
	10	Wall finishes	2	
	11	Windows	1	
	12	Interior Window treatments	2	
	13	Exterior window treatments	1	
	14	Furniture selection	2	
	15	Furniture arrangement	1	
	16	Accessories	1	
	17	Lighting	2	
IV	House as an unit		10	12
	18	Requirement of a good house plan	2	
	19	Functional and economic aspects of planning each room	2	
	20	Study of Interior design styles- contemporary, traditional, modern, industrial, farmhouse and zen	3	
	21	Floor plans	1	
	22	Steps in Space planning	2	
V	Open Ended Module:		5	
	1	Market survey: Recent trends in lighting and its accessories/wall finishes /floor finishes		
	2	Experiential learning Designing a space using the elements and principles of design Experimenting with different possibilities in furniture arrangements		
		Open-Ended Exploration and Assessment: Student-led probe into design problems and their solutions. Presentation and discussion of findings		
		Group Assignment: Designing a room on any interior design style		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	1	2	2	2	-	2	2	2	2	1	1	2
CO 2	1	1	2	2	-	-	2	2	2	2	-	1	2
CO 3	2	2	3	3	-	-	2	2	2	2	2	2	2
CO 4	1	2	2	3	2	-	2	2	3	1	1	1	3
CO 5	1	2	3	2	2	-	2	1	2	2	2	1	2
CO 6	1	1	2	2	-	-	2	2	2	2	-	1	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics

Midterm exam, quiz, group mini Project, problem solving, assignments (20%)

Final exam(70%)

References:

1. Nickel, P and Dorsey, J.M. Management in family living, Wiley Eastern Private Ltd, New Delhi, 1976
2. Gross, I.M & Grandall, D.W Management for Modern Families,1973
3. Faulkner R & Faulkner S, Inside todays home, Holt Rinchart Winston, Newyork
4. Rutt. A.H, Home furnishing, Wiley Eastern Private Ltd, NewDelhi
5. Varghese. M.A, Ogale, N.N. Sreenivasan, K Home Management, New Age International
6. Agan. T,The house-its plan & use, J.P. Lippincott company, Newyork,1970

SEMESTER II

Programme	B. Sc. Family and Community Science				
Course Title	FIBRE TO FABRIC				
Type of Course	Major				
Semester	II				
Academic Level	100 -199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basics of Chemistry				
Course Summary	This course helps us to understand the different types of fibre, their production/processing, properties and use. It will help students understand the care required for different fibre fabrics and selecting it to different end use.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Develop strong knowledge base in the production of fibres and yarns	U	F	Instructor-created exams / Quiz
CO2	Identify textile fibres and apply appropriate care	An	P	Practical Assignment / Observation of Practical Skills
CO3	Understand about woven and nonwoven fabrics	U	C	Sensory evaluation
CO4	Skill in identifying weave structures	S	P	Instructor-created exams / Home Assignments
CO5	Evaluate the end use application of different fibres & weaves	E	M	Practical assessment
<p>* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)</p>				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Fibre Theory		6	12
	1	Monomers and Polymers	1	
	2	Types of Fibre bonds in textile polymers	1	
	3	Polymerisation	1	
	4	Primary and secondary properties	1	
	5	Classification of fibres	1	
	6	Identification of fibres	1	
II	Textile fibres- production, processing, properties and use		15	31
	7	Major fibres- Cotton, flax, silk, wool, nylon, polyester, rayon, acetate	8	
	8	Minor fibres- sisal, jute, mohair, alpaca, elastane	7	
III	Yarn Construction		14	26
	9	Definition- spinning- conventional methods- cotton system, open end spinning	3	
	10	Dry, wet, melt, bi constituent and bicomponent spinning	2	
	11	Novel methods- friction spinning, twistless, self twist	3	
	12	Yarn Properties- twist, number	3	
	13	Yarn classification	3	
IV	Fabric construction		10	18
	14	Looms- parts, basic motions, preparation of yarns before weaving	1	
	15	Evolution of looms	1	
	16	Basic weaves	2	
	17	Novelty weaves	1	
	18	Fabric count and analysis, Blend and Mixtures	1	
	19	Nonwovens- knitting	1	

	20	Felting, Web bonded fabrics	1	
	21	Multicomponent fabrics, braiding, narrow fabrics	1	
	22	Nets and laces	1	
V	Open Ended Module: Practical		30	
	Maintain a record			
		Collection of major fibres studied/novel fibres		
		Training on fibre identification		
		Collection and identification of weave samples- basic and novelty		
		Collection of nonwoven fabrics		
		Visit to spinning mill/weaving unit/nonwoven manufacturing unit-report		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	1	2	2	2	-	2	2	2	2	1	1	2
CO 2	1	1	2	2	-	-	2	2	2	2	-	1	2
CO 3	2	2	3	3	-	-	2	2	2	2	2	2	2
CO 4	1	2	2	3	2	-	2	2	3	1	1	1	3
CO 5	1	2	3	2	2	-	2	1	2	2	2	1	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Regular lectures, demonstrations, Exercises on observation and follow up with group discussions, ICT enabled teaching and learning experiences in terms of video lessons and documentary shows. Hands on experience in laboratory and industrial visits to textile industries. Assignments (20%)
- Final Exam (70%)

References

1. Marjory L. Joseph, Introductory Textile Science, Holt Rinehart and Winston, New York.
2. Susheela Dantiyagi, Fundamentals of Textiles and their care, Orient Longmans, Madras
3. Hess, Textile fibres and their Uses, Oxford IBH Publishing Company, New Delhi.
4. Porter Corbman, Fibre to Fabric, McGraw Hill Book Company, New York.
5. www.fiber2fashion.com

Programme	B. Sc. Family and Community Science				
Course Title	FAMILY MEAL MANAGEMENT				
Type of Course	MDC-II				
Semester	II				
Academic Level	100 -199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	3	3	-	-	45
Pre-requisites	Basic maths, cooking skill, knowledge of recipes				
Course Summary	The course provides the skill to critically assess nutritional requirements, recommend nutritional advice and provide nutritional interventions to promote nutritional health status of members in a family.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Assess the nutritional needs of the family members.	An	F	Instructor-created exams / Quiz
CO2	Design menus to meet the nutritional needs of the family members at various stages of life.	C	P	Practical Assignment / Observation of Practical Skills
CO3	Assess nutrition related problems of the family members.	An	C	Instructor-created exams / Quiz
CO4	Equip oneself with the knowledge to develop and critique nutritional interventions	E	P	Instructor-created exams / Home Assignments
CO5	Promote health and	E		Reflection

	wellbeing of the family.		M	
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)				
# - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P)				
Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I		Basic introduction to RDA, Meal planning, and Balanced Diet	8	12
	1	Basic concept of Recommended Daily allowances and need for RDA	2	
	2	Factors affecting RDA, RDA for adults- male and female	1	
	3	Principles of meal planning	2	
	4	Understanding food expenses, budget friendly meal planning,	1	
	5	Creating healthy balanced meal plans using RDA and a budget	2	
II		Nutrition for adults	12	26
	7	Reference man and reference woman	1	
	8	Nutritional needs of adults engaged in varying levels of activity	1	
	9	Nutritional related problems in adults and elderly- NCDs	2	
	10	Importance of nutritional care during pregnancy	2	
	11	General nutritional problems during pregnancy	2	
	12	Importance of food and nutritional care during lactation	2	
	13	General nutritional problems during lactation	2	
III		Nutrition in Infancy	10	22
	14	Growth and development of Infants	3	
	15	Significance of first 1000 days of life	2	
	16	Breast feeding versus bottle feeding- advantages/disadvantages	2	
	17	Weaning and supplementary feeds, growth monitoring charts	3	
IV		Nutrition in Childhood and Adolescence	10	10

	18	Growth and development of preschool, school going children and adolescent	2	
	19	Nutritional problems seen in this age groups	2	
	20	Factors to be considered while planning their meals	2	
	21	Modern food habits of adolescents	2	
	22	nutritional problems-eating disorders		
V	Open Ended Module		5	
	Related experience			
	23	Basic cooking techniques	2	
	24	Recipe modification and adaptation	1	
	25	Meal presentation and serving	1	
	26	Planning a balanced meal plan/packed lunch for a college going student	1	

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	2	3	3	-	2	2	2	2	1	2	3	3
CO 2	1	1	2	3	-	2	2	2	2	1	2	1	3
CO 3	2	3	3	3	-	3	2	3	1	1	2	2	3
CO 4	2	2	3	3	-	2	2	2	2	1	2	3	3
CO 5	2	3	3	3	-	3	2	3	1	1	2	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Regular lectures, demonstrations, Exercises on observation and follow up with group discussions, case studies, ICT enabled teaching and learning experiences in terms of video lessons and documentary film shows. Hands on experience in laboratory and in food industries. Assignments (20%)
- Final Exam (70%)

References

1. Srilakshmi B (2024) Dietetics, 9th edition. New Age Publications (p) Ltd, New Delhi
2. Mahtab, S., Bamji, Kamala Krishnaswamy, Brahman, GNV., (2012). Textbook of Human Nutrition. 3rd edition. Oxford and IBH Publishing Co. P. Ltd., New Delhi
3. Swaminathan, M. (2012). Advanced Textbook on Food and Nutrition, Vol 1, 2nd edition, Bangalore Printing and Publishing Co. Ltd. Bangalore.
4. Longvah, T., Ananthan, R., Bhaskarachary, K., Venkaiah, K., (2017) Indian Food Composition Tables (IFCT), ICMR, NIN, Hyderabad
5. Dietary Guidelines for Indians- A Manual. NIN, ICMR, Hyderabad

SEMESTER III

Programme	B. Sc. Family and Community Science				
Course Title	HUMAN PHYSIOLOGY				
Type of Course	Major				
Semester	III				
Academic Level	200 – 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	X level Science				
Course Summary	This course will help understand the structure and functioning of various organs. A understanding of the physiological processes will serve as a basis for assessment of nutritional problems and their interventions therein.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Enable the students to understand the fundamental principles of human physiology.	R	C	Instructor-created exams / Quiz
CO2	Describe the structure and functions of various organs of the body.	Ap	F	Practical Assignment / Observation of Practical Skills
CO3	Obtain a better understanding of the integration and regulation of physiological processes.	An	C	Instructor-created exams
CO4	Understand alterations of structure and functions in various organs and systems in disease condition	U	C	Instructor-created exams / Home Assignments

CO5	Evaluate biochemical reports and analyse lifestyle diseases	Ap	P	Practical assessment
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I		Introduction to Human Physiology	15	18
	1	Cells and Tissues	1	
	2	Blood constituents, Functions of blood, Types and formation of blood cells blood coagulation, and blood groups.	3	
		Cardiovascular system		
	3	Heart – structure, properties of cardiac muscles,	2	
	4	Electrocardiogram,	2	
	5	blood pressure, factors influencing blood pressure	2	
	6	Cardiac cycle	2	
	7	types of circulation- portal, systemic and pulmonary	2	
8	Lymphatic system- Lymph and its functions.	1		
II		Digestive system	15	31
	9	Mechanism of digestion	3	
	10	Functions of accessory organs - salivary glands, liver, pancreas.	4	
	11	Digestive enzymes;	3	
	12	Digestion and absorption of protein, fat, and carbohydrates.	5	
III		Endocrine system	10	12
	13	Functions of Pituitary glands,	2	
	14	Thyroid glands, Parathyroid glands,	2	
	15	Adrenal glands	2	

	16	Sex glands- ovaries and testis.	4	
IV	Reproductive and Excretory system		8	37
	17	Structure and Functions of kidney, nephron	2	
	18	Formation and composition of urine, osmoregulation, and micturition.	1	
	19	Structure of Male reproductive system	2	
	20	Structure of female reproductive system	1	
	21	Menstrual cycle	1	
	22	Parturition	1	
V	Open Ended Module: Related experiences		12	
	23	Making of working models/checking blood pressure by syphygomanometer/Blood group detection/blood count/ training in first aid		
	24	Group work- medical camp/Hb detection/awareness classes Blood Report analysis		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	3	2	-	1	3	2	1	1	1	2	3
CO 2	2	3	3	2	-	3	3	2	1	1	1	2	3
CO 3	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 4	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 5	1	3	3	2	-	3	3	2	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low

2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Regular lectures, demonstrations, Exercises on observation and follow up with group discussions, case studies, ICT enabled teaching and learning experiences in terms of video lessons.
- Assignments (20%)
- Final Exam (70%)

References

1. Bell, G.H. Davidson, J.N. and Scarborough. H(1970). Textbook of physiology and biochemistry, ELBS Edition. The English language Book Society.
2. Best. H. and Taylor, B, The physiological Basis of Medical Practices, 8th edition, The William and Wilkinsons company.
3. Chandramouli. R. (2003) Textbook of Physiology, Jaypee brothers, medical publishers(p)Ltd. New Delhi110 002.
4. Gutan, A.C. Textbook of medical Physiology, 14th Edition. W.B. Saunders Company Philadelphia.
5. Guyton, A.C. and Hall, JB. (1996) Functions of Human Body,4th Edition, W.B. Sanders Company, Philadelphia.
6. Jain, A.K.: Textbook of Physiology. Vol. I and II.Avichal Publishing Co., New Delhi.

Programme	B. Sc. Family and Community Science				
Course Title	TEXTILE WET PROCESSING				
Type of Course	Major				
Semester	III				
Academic Level	200- 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basics in Textiles Science/Fibre to Fabric				
Course Summary	The course gives fundamental knowledge in the finishing process of textiles, dyeing and printing. It helps to evaluate the need for sustainability in the industry and promotes critical thinking.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Develop ethical values concerning production and finishing of textiles	E	C	Instructor-created exams / Quiz
CO2	Illustrate different methods and mechanism of dyeing and printing	U &An	P	Practical Assignment / Observation of Practical Skills
CO3	Create awareness on green textiles	C	C	Assignments
CO4	Skill in producing different designs in dyeing and printing	S	C	Instructor-created exams / Home Assignments
CO5	Develop Self employment opportunities	Ap	P	Practical assessment
<p>* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)</p> <p># - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)</p>				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Finishes		12	31
	1	Definition, classification, Importance, types of finishes	1	
	2	mechanical -calendarling (friction,glazing,embossing,moireingandschreinerising),tentering,shearing, napping ,singeing	2	
	3	Chemical -bleaching, mercerizing, sanforising, sizing, weighting, crepe and crinkled effect, crease resistance,	3	
	4	Durable press finish	2	
	5	crabbing, preshrinking finishes done on wool fabrics	2	
	6	special/functional - water repellency, flame proofing, mildew proofing and moth proofing	2	
II	Dyeing		11	43
	7	Dyes- definition and classification	1	
	8	Synthetic dyes-direct, acid, basic, and disperse dyes	3	
	9	Azoic, vat, sulphur, metal complex, reactive dyes	3	
	10	Natural dyes- mordants- methods of dyeing	2	
	11	Methods of dyeing- fibre, stock, yarn, piece and garment.	2	
III	Printing		10	12
	12	Printing- styles- direct, resist and discharge printing	2	
	13	Printing machines	2	
	14	Methods of printing (block, roller, screen-hand screen, flat bed screen printing and rotary screen printing)	2	
	15	Other methods- stencil, duplex, transfer	4	
IV	Textile processing and environment		12	12
	16	Environmental impacts related to cultivation, processing and uses.	2	

	17	Use of biotechnology in textile processing	2	
	18	Eco friendly fibres- jute, hemp, bamboo,	2	
	19	Organic cotton and recent trends.	2	
	20	Eco friendly practices	1	
	21	Eco labels	1	
	22	Sustainability in Textile industry	2	
V	Open Ended Module: Practical		30	
	Build a record			
	23	To dye the cotton fabric using tie and dye method using direct dyes in various designs- knotting, sun burst, square, tritik, round, pinching	25	
	24	To block print cotton fabric		
	25	To Screen print cotton fabric		
26	To print cotton fabric by batik in 1 or 2 colours			
27	Product development- using tie and dye/batik/block printing	5		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	2	2	2	2	-	1	1	2	2	2	2	2
CO 2	1	1	2	1	2	-	1	1	2	2	2	2	2
CO 3	2	2	2	1	3	-	2	1	2	2	2	2	2
CO 4	1	1	2	1	2	-	1	1	2	2	2	2	2
CO 5	1	2	3	3		-	2	1	3	2	2	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Regular lectures, demonstrations, Exercises on observation and follow up with group discussions, case studies, ICT enabled teaching and learning experiences in terms of video lessons. Hands on experience in laboratory, Assignments (20%)
- Final Exam (70%)

References

1. Marjory L. Joseph, Introductory Textile Science, Holt Rinehart and Winston, New York.
2. Susheela Dantyagi, Fundamentals of Textiles and their care, Orient Longmans, Madras
3. Hess, Textile fibres and their Uses, Oxford IBH Publishing Company, New Delhi.
4. Porter Corbman, Fibre to Fabric, McGraw Hill Book Company, New York.
5. www.fiber2fashion.com

SEMESTER IV

Programme	B. Sc. Family and Community Science				
Course Title	HUMAN DEVELOPMENT				
Type of Course	Major				
Semester	IV				
Academic Level	200 -299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Course Summary	Provides scientific knowledge about human development and behavior. To know the needs of children at different stages of development and to give an awareness of the needs and problems of exceptional children.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand stages of human development.	U	F	Instructor-created exams / Quiz
CO2	Understand the needs and problems of exceptional children.	U	C	Instructor-created exams
CO3	Develop skills in organizational behaviour and generate solutions to situational problems	C	C	Practical Assignment / Observation of Practical Skills
CO4	Interpret the values and role of play in child's development.	An	C	Instructor-created exams / Home Assignments
CO5	Develop knowledge of children's laws and rights	U	C	Instructor-created exams
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks	
I		Growth and development	5	12	
	1	Principles of growth and development,	2		
	2	Stages of development,	1		
	3	Importance of heredity and environment in the development of the child.	2		
II		Prenatal and Neonatal period	10	31	
	4	Conception- stages of development	1		
	5	Signs and symptoms of pregnancy	1		
	6	Complications of pregnancy,	1		
	7	Factors influencing prenatal development	2		
	8	Antenatal care	2		
	9	Characteristics, abilities and adjustments of neonates	3		
	III		Babyhood, Early childhood, late childhood	15	37
		10	Physical, motor, emotional, social development	4	
11		Moral, cognitive and language development	4		
12		Discipline methods and effects	4		
13		Habit formation & play	3		
IV		Adolescence	15	18	
	14	Characteristics, physical, social development	2		
	15	emotional, cognitive and moral development	2		
	16	Problems of adolescence.	2		
	17	Sex education- need and significance.	2		
	18	<i>Juvenile delinquency</i> -Causes and rehabilitation	2		
	19	child rights	1		
	20	POCSO Act	1		
	21	<i>Exceptional children</i> - Definition, causes, classification	2		
	22	Identification, need for special education–gifted child, autistic,	1		

		mentally handicapped		
V	Open Ended Module: Practical		30	
	23	Observational study- preschool/ prepare teaching aid suitable for pre schoolers		
	24	Visits- special schools/ old age homes/aganwadis		
	25	Observations of infant child rearing practices in families from different social classes.		
	26	Interviews of adolescent girls and boys to understand their life style and behaviour		
	27	Preparation of an album on developmental milestones of children.		
	28	Carry out case studies to know more about the different life stages, e.g., school going children and adolescents		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	3	2	-	1	3	2	1	1	1	2	3
CO 2	2	3	3	2	-	3	3	2	1	1	1	2	3
CO 3	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 4	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 5	1	3	3	2	-	3	3	2	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium

Assessment Rubrics:

- Regular lectures, demonstrations, Exercises on observation and follow up with group discussions, case studies, ICT enabled teaching and learning experiences in terms of video lessons and documentary film shows on stages of lifespan, Volunteering works, Assignments (20%)
- Final Exam (70%)

References

1. Hurlock E.B., Child Development, McGraw Hill, Kogakurtia Ltd.
2. Hurlock E.B., Child Growth and Development, McGraw Hill
3. Hurlock E.B., Developmental Psychology, McGraw Hill
4. Devadas R.P. and Jaya N.(1984)A Textbook on Child Development, MacMillan, India ltd.
5. Suriakanthi A. (1989) Child Development, Kavitha Publication, Gandhigram

Programme	B. Sc. Family and Community Science				
Course Title	PRINCIPLES OF NUTRITION				
Type of Course	Major				
Semester	IV				
Academic Level	200-299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basics of Human Physiology				
Course Summary	The course helps students understand the concepts underlying functions, deficiencies and requirements of all the essential nutrients to sustain life.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Demonstrate a comprehensive understanding of basic concepts in nutrition and interpret relation between food, nutrition and health.	U	C	Instructor-created exams / Quiz
CO2	Identify and analyze functions, dietary sources and clinical manifestations of deficiency or excess of important nutrients.	An	C	Instructor-created exams / Quiz
CO3	Demonstrate healthy cooking practices and minimizing nutrient losses.	Ap	P	Practical Assignment / Observation of Practical Skills
CO4	Apply various methods for enhancing nutritional quality of food.	U	C	Instructor-created exams / Home Assignments
CO5	Identify and apply the principles from the various factors of foods and related disciplines to solve practical as well as real world problems .	Ap	P	Seminar Presentation / Group Tutorial Work

* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)
 # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)

Detailed Syllabus:

Module	Unit	Content	Hrs	
I	Introduction to Nutrition		10	12
	1	History and Definition of Nutrition	1	
	2	Under nutrition, over nutrition and malnutrition	2	
	3	Functions of food, methods of cooking,	2	
	4	Nutrients – definition, classification, sources	2	
	5	Inter relation between nutrition and health, Visible symptoms of good health	2	
	6	RDA – definition ,Reference man and reference woman	1	
II	Macronutrients		15	43
	7	Energy – Definition, determination of energy value of foods, total energy requirements, BMR - factors affecting BMR	4	
	9	Carbohydrate - classifications and functions	3	
	10	Protein – Classification and functions, essential and non-essential amino acids	2	
	11	Fat – Classifications and functions Classification of fatty acids	2	
	12	Requirements and deficiency disorders of Carbohydrates, protein and fat	4	
III	Vitamins		10	31
	13	Vitamins – functions and Classification	2	
	14	Vitamin A and D – functions, sources, requirements, deficiency disorders	2	
	15	Vitamin C, E and K - functions, sources, requirements, deficiency disorders	3	
	16	Vitamins B (Thiamine, Riboflavin, Niacin, folic acid and vitamin B12) – functions, sources, requirements, deficiency	3	
IV	Minerals and water		10	12
	17	Minerals – Introduction, basic functions and classifications	1	
	18	Calcium, Phosphorous, Magnesium - functions, sources, requirements and deficiency	2	
	19	Potassium, Sodium and Chloride - functions, sources, requirements and deficiency	2	
	20	Iron and Iodine - functions, sources, requirements and deficiency	1	
	21	Zinc, Fluoride and Copper - functions, sources, requirements and deficiency	2	
	22	Water – functions, requirements, distribution, composition of body fluids, water imbalance, dehydration, water and electrolyte mechanism	2	

V	Open Ended Module- Practicals		30
	Build a record		
	1	Improving nutritional quality of diets by Food synergy, Germination, Fermentation, Fortification and Genetic Modification of foods	
	2	Weights and measures; preparing market order and table setting	

3	Food preparation, understanding the principles involved, nutritional quality and portion size- Cereals: Boiled rice, pulao, chapati, paratha-plain/stuffed, poori, pastas Pulses: Whole, dehusked, pulse curry Vegetables: Dry preparation, vegetable curry	
4	Food preparation, understanding the principles involved, nutritional quality and portion size- Milk preparations: Kheer, porridge, custard Egg preparations: Boiled, poached, fried, scrambled, omelette	
5	Soups and Salads- Plain and cream soups, salads and salad dressings	
6	Bakery and Confectionery- cakes, biscuits.	

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	2	3	3	-	2	2	2	2	1	2	3	3
CO 2	1	1	2	3	-	2	2	2	2	1	2	1	3
CO 3	2	3	3	3	-	3	2	3	1	1	2	2	3
CO 4	2	2	3	3	-	2	2	2	2	1	2	3	3
CO 5	2	3	3	3	-	3	2	3	1	1	2	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz, case studies, Discussion / Seminar, Midterm Exam, Assignments (20%)
- Final Exam (70%)

Reference Books:

1. Essential of food & Nutrition –Vol. 1 M. Swaminathan, Bappco, Bangalore.
2. Nutrition Science- Srilakshmi. B, New Age International Publishers, 8th edition, 2023.
2. Normal and Therapeutic Nutrition- Corinne. H.Robinson & Marilyn Lawler 4. Contemporary Nutrition - Gordon M. Wardlaw, Paul Insel et, al., (2000) Mosby,Chicago.
5. Nutrition- concepts and controversies- Eleanor Whitney –Eighth Edition (2000)
6. Basic principles of Nutrition- Seema Yadav, First edition (1997)
7. Essentials of Nutrition and Diet therapy -Sue Rodwell Williams, fifth edition, Times Mirror Mosby College Publishing, 1990.
8. Understanding Nutrition -Whitney P.N. and Roes S.R., West Publication Co, 1996.

Programme	B. Sc. Family and Community Science				
Course Title	FASHION DESIGN AND ILLUSTRATION				
Type of Course	Major				
Semester	IV				
Academic Level	200- 299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	1. Aptitude in drawing				
Course Summary	This course enable the students to understand the principles and features of fashion design and train the students to analysis the nature of fashion, fashion elements.				

Course Outcomes (CO): .

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	To understand the basics of fashion design	U	C	Seminar Presentation / Group Tutorial Work
CO2	Obtain knowledge on elements and principles of design in context to apparels.	U	F	Instructor- created exams / Home Assignments
CO3	Acquire familiarity on size, categories colour basics and their characteristics.	An	C	Instructor- created exams / Quiz
CO4	Ability to understand the fashion terminology in connection with dress designing.	Ap	M	Viva Voce
CO5	Skill in sewing techniques	Ap	P	Practical skills

* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)
- Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Introduction to Textile and Fashion Industry		10	12
	1	Textile Industry overview, Structure, Growth, Size, Role of Indian textile industry in the economy.	2	
	2	Centres of fashion – Milan, Paris, New York,	2	
	3	Adoption theories of fashion – Trickle up, Trickle down, and Trickle across.	2	
	4	Fashion terminologies	2	
	5	Types of figures	2	

II	Design		15	43
	6	Types of Design - structural and decorative.	1	
	7	Elements of Design - form, shape, space, line, colour, and texture.	2	
	8	Principles of design - balance-formal, informal and radial, proportion, emphasis, rhythm, and harmony	2	
	9	Functions of Lines.	2	
	10	Silhouettes	2	
	11	Different types of lines & their characteristics	2	
	12	Use of lines in clothing according to body shapes	2	
	13	Optical illusions created by various combinations of lines.	2	
III	Selection of clothing- for various figures		15	31
	15	Pear shaped figure- traditional and western ensembles	4	
	16	Diamond shaped-traditional and western ensembles	3	
	17	Hours glass- traditional and western ensembles	3	
	18	Triangle and inverted triangle- traditional and western ensembles	5	
IV	Basics in Fashion Illustration		5	12
	19	Balance and proportion in human body: average and fashion figures	2	
	20	Postures of male, female and children croquies and its significance: Front view, Back view, Side view and 3/4th view	1	
	21	Stylizing the croquie and its importance	3	
	22	Understanding fabric textures and drapes	1	
V	Open Ended Module: Practical		30	
	1	Open-Ended Exploration and Assessment: Build a record <ol style="list-style-type: none"> 1. Basic line drawing: vertical, horizontal, diagonal, concentric circles, ovals and waves 2. Basic10 head croqui- female 3. Facial features, poses, photoanalysis 4. Rendering techniques: shading, hatching, embossing 5. Painting in different medium : pencil, water colour pastels, acrylic 6. Sewing Techniques <ol style="list-style-type: none"> 1. Basic hand stitches 2. Seams and seam finishes 3. Fullness- darts, tucks- any two, pleats, gathers 4. Bias and its applications- piping, facing 5. Sleeves- plain, puff, kimono 6. Collars- any3 7. Plackets- any 3 8. Pockets-any 2 		

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	3	2	-	1	3	2	1	1	1	2	3
CO 2	2	3	3	2	-	3	3	2	1	1	1	2	3
CO 3	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 4	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 5	1	3	3	2	-	3	3	2	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Seminar , Midterm Exam , Peer assesments, Padlet Assignments (20%)
- Final Exam (70%)

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5. Elements of design and apparel design. Sumathy. G. New Age International Pvt. Ltd, 2002.
6. Art and Fashion in Clothing Selection, M.C. Gimsely and Harriot. T., Nova State Uty. Press, New York.

SEMESTER V

Programme	B. Sc. Family and Community Science				
Course Title	NUTRITION THROUGH LIFE CYCLE				
Type of Course	Major				
Semester	V				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basic course in Nutrition science and Human Physiology				
Course Summary	The course imparts knowledge about the nutritional requirements during various stages of life and the ability to create menu plans to meet them.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the nutritional demands in various stages of life cycle.	U	C	Instructor-created exams / Quiz
CO2	Acquire skills in planning adequate meals in different stages of life cycle to maintain health	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Assess nutrition issues and conditions and also recommend nutrition intervention and support to promote the health and well being.	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Critically assess nutritional requirements and nutritional health status of an individual.	U	C	Instructor-created exams / Home Assignments
CO5	Design food plans and assess the adequacy of diets to meet the nutritional needs of humans at various stages of life cycle	C	P	Writing assignments

* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)

- Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Basic Principles of Meal Planning		5	10
	1	Basic principles and factors to be consider while planning menu for different age groups.	3	
	2	Recommended dietary allowances-RDA for Indians.	2	
II	Nutritional Needs during Pregnancy and lactation		10	14
	3	Stages of pregnancy, weight change, complications	2	
	4	Nutritional requirements, and meal planning for pregnant women	2	
	5	Nutritional needs during Lactation - physiology of lactation, hormonal control	2	
	6	nutritional components of colostrum,Food supplements and galactogogues, Factors affecting the volume and composition of breast milk.	2	
	7	Nutritional requirements of lactating women and meal planning.	2	
III	Nutrition during Infancy		10	31
	8	Growth and development, factors influencing growth	1	
	9	Difference between breast feeding and bottle feeding, factors to be considered in bottle feeding	2	
	10	Different types of milk formulae available commercially	1	
	11	Weaning Foods – Preparation of Weaning foods- WHO guidelines.	2	
	12	Uses of growth chart to monitor growth & development	2	
	13	Nutritional requirements of infants.	2	
IV	Nutritional needs of preschool (1-5 year) School children, Adolescence & Adult		12	43
	14	Nutritional requirements of preschool children	1	
	15	Nutrition related problems of preschoolers- PEM, night blindness, Anaemia	1	
	16	Factors to be considered while planning meals for pre-school children	1	
	17	Nutritional requirements of school going children	1	
	18	Eating problems of children and their management, packed lunch	2	
	19	Nutritional requirement of adolescence	1	
	20	Nutrition problems in adolescence- anemia, obesity , anorexia nervosa and bulimia nervosa	2	
	21	Nutritional requirement of adult- Male and Female- low cost balanced diets	2	
	22	Nutritional requirement during old age	1	
V	Open Ended Module- Practicals		30	
	23	Build a record		

		<ul style="list-style-type: none"> ➤ Standardization of portions for cooked food. ➤ Planning and preparing diet for infants and preschool children ➤ Packed lunch planning for school going children. ➤ Menu planning for adolescent girls and boys. Calculation of nutritive value of the prepared menu ➤ Planning a low cost balanced menu for a pregnant and lactating mother and display. ➤ Calculation of nutritive value of the prepared menu ➤ Visit to Nutrition research centres/food industries/ hospital dietary departments 		
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Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	3	2	-	1	3	2	1	1	1	2	3
CO 2	2	3	3	2	-	3	3	2	1	1	1	2	3
CO 3	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 4	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 5	1	3	3	2	-	3	3	2	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)

- Final Exam (70%)

REFERENCES

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- 6.Shakuntala Manay, Shadaksharaswamy. M (2013) Foods, Facts and Principles, New Age International Pvt Ltd Publishers, 2nd Edition) Ltd., New Delhi. □
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Programme	B. Sc. Family and Community Science				
Course Title	RESOURCE AND SPACE DESIGN MANAGEMENT				
Type of Course	Major				
Semester	V				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Aptitude in drawing				
Course Summary	The course gives basic knowledge on the managerial process and the use of resources to maximise satisfaction for individuals and a family. It also imparts the skill in decorating interiors and use space effectively.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the process of management in family living	U	F	Instructor-created exams / Quiz
CO2	Develop wise decisions in personal life and make use of given resources	Ap	F	Practical Assignment / Observation of Practical Skills
CO3	Improve the standard of living utilizing family resources	Ap	C	Seminar Presentation
CO4	Develop a creative sense in interior decoration by applying the elements and principles of design	An	C	Instructor-created exams / Home Assignments
CO5	Develop the skill in effective space management	Ap	P	Hands on training
CO6	Apply theoretical concepts and design principles to solve space design problems in interiors	Ap	P	Group assignment

* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)
- Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)

Detailed Syllabus:

Module	Unit	Content	Hrs	
I	Principles of Resource Management		5	10
	1	Meaning & definition of home management, steps involved in management	3	
	2	Definition & classification, characteristics resources	2	
II	Management of resources		10	31
	3	Energy- fatigue- types, causes and methods to alleviate fatigue	2	
	4	<i>Work simplification</i> -process chart, operation chart, flow process chart, Mundel's classes of change	2	
	5	Tools of time management, steps in making time plan, Evaluation of time management	2	
	6	<i>Family income</i> -sources of income, types of income	2	
	7	<i>Family expenditure</i> -family budget, steps in making family budget, Engels Law of consumption	2	
III	Interior Decoration		10	43
	8	Types of Design: Structural & Decorative.	1	
	9	Elements of Content: Space, Point, Line, Shape, Form, Texture, Light & Color.	2	
	10	Principles of Composition – Rhythm, Balance, Proportion, Emphasis, Unity, (Variety, Simplicity/Economy, Suitability).	2	
	11	Furniture – Types, Construction, Selection and purchase, Arrangement, Care and maintenance Window treatments- types and curtain styles	2	
	12	Lighting applications (Energy efficient lighting design – number and type of lamps and luminaires for efficiency in lighting).	2	
	13	Accessories – Uses, Classification, Design, Selection & Arrangement.	1	
IV	Basic Concepts in Space Planning and Design		15	14
	14	Selection of site for houses: Factors influencing and legal aspects	1	
	15	Principles of planning, space allocation - Structuring spaces: indoor and outdoor; space articulation: zones in spatial planning. and organization in independent houses, apartments and flats	2	
	16	Building materials: materials for foundation, construction and finishes – types, characteristics and use	2	
	17	Characteristics of space, principles of planning spaces; planning and designing Spatial organization in interiors: work zones, space bubble and schematic diagram- Symbols used in drafting plans, reading plans and blueprints	2	
	18	Concept of green buildings and eco-friendly materials as modern trends in building construction Levels of construction and components of a building	2	
	19	Types of plans – site, floor, cross-section, elevation, landscape, perspective	2	

	20	Drafting plans – concept drawings for different income groups; functional designs to suit different age groups and purposes; designs for people with special needs (PWD)	2	
	21	Basic norms and space standards in operation – NBC and MPD	1	
	22	Sustainable Development Goals (SDGs) - Pollution and Environment protection, Acts (EPA)	2	
V	Open Ended Module- Practical		30	
	23	Preparation of record- comprising pictures denoting application elements and principles of design		
	24	Colour - Colour Wheel & Harmonies of Colour.		
	25	Brainstorming on current trends in interior design		
	26	Floor plans with rendering (Theme based- Manual)		
	27	layout drawings for different rooms & furniture using cut outs		
	28	Elevation & perspective plans with rendering (Manual)		
	29	Planning lighting for residential and commercial spaces specifying requirements		
	30	Drawing house plans for different income groups		
	29	Furniture & furnishing plans of specific areas- Critical Analysis		
	31	Market review of furniture and lighting		
	32	Hands-on experiences – collage, decoupage, papermache objects, macramé, posters, greeting cards, Bonzai,		
	33	Residence stay/event management/ visit to design firms or site visits and lifestyle stores- report should be recorded		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	1	2	2	2	-	2	2	2	2	1	1	2
CO 2	1	1	2	2	-	-	2	2	2	2	-	1	2
CO 3	2	2	3	3	-	-	2	2	2	2	2	2	2
CO 4	1	2	2	3	2	-	2	2	3	1	1	1	3
CO 5	1	2	3	2	2	-	2	1	2	2	2	1	2
CO 6	1	1	2	2	-	-	2	2	2	2	-	1	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Group Assignments (20%)
- Final Exam (70%)
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REFERENCES

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2. Gross, I. M & Grandall, D.W Management for Modern Families,1973
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7. Ruth. F. Shewood, Homes today and tomorrow,1972,Chas.A.Benett company Illinois
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Programme	B. Sc. Family and Community Science				
Course Title	TRADITIONAL INDIAN TEXTILES AND NEEDLEWORK				
Type of Course	Major				
Semester	V				
Academic Level	300- 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basic course in Textile Science				
Course Summary	The course describes the rich heritage of Indian textiles and embroideries from different states and its sustenance for its revival and vivid applications.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Develop creative designs in embroidery and prepare garments by using this embroidery.	C	C	Instructor-created exams / Quiz
CO2	Identify the various color schemes and their applications in surface ornamentation.	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Identifying new opportunities in craft, art, fashion and markets.	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Understand the richness of the Indian embroidered textiles.	E	F	Instructor-created exams / Home Assignments
CO5	Create unique design using traditional embroidery patterns and stitches.	U	F	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Woven textiles- History, technique, designs and colours		12	31
	1	Dacca Muslins, Jamdani sarees, Benaras brocades	3	
	2	Baluchari sarees and chanderi sarees	2	
	3	Amrus and Himrus, Paithani and Pitamber	2	
	4	Kanchipuram	2	
	5	Pashmina shawls	1	
	6	Textiles of Kerala	1	
	7	Textiles of Goa	1	
II	Printed and Dyed Textiles- History, technique, designs and colours		15	16
	8	Ikat of Orissa	2	
	9	Pochampilly of Telegana	2	
	10	Patola of Gujarat	4	
	11	Bandhani of Rajasthan	2	
	12	Kalamkari, Telia Rumals	2	
	13	Block printed textiles- bagru, ajarakh, sanganeri	3	
III	Traditional embroideries		13	43
	14	Kashida of Kashmir	1	
	15	Chamba of Himachal Pradesh & Embroidery of Manipur	3	
	16	Kantha of Bengal	3	
	17	Kutch and Kathiwar & Kasuti of Karnataka	2	
	18	Chikankari of Lucknow	2	
	19	Phulkari of Punjab	2	
IV	Conservation and Care of Textile crafts		8	8
	20	Sustenance of textile crafts- Government Policies for artisans	3	
	21	Conservation of textiles	3	
	22	Care and storage of Textiles	2	
V	Open ended module		12	
	23	Basics in embroidery Samples of traditional embroidery (collection/embroidering)		
	24	Collection samples/pictures of each traditional textile of India		
	25	Visit to places of manufacture/exhibitions		
	26	Viewing documentary films on artisans/weavers of India		
	27	Application of a traditional embroidery on any product		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	3	2	-	1	3	2	1	1	1	2	3
CO 2	2	3	3	2	-	3	3	2	1	1	1	2	3
CO 3	1	3	3	2	-	3	3	2	1	1	1	2	3

CO 4	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 5	1	3	3	2	-	3	3	2	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References

1. Sheila Paine, "Embroidered Textiles", Thames and Hudson Ltd., 1990.
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**ELECTIVE I
SEMESTER V**

Programme	B.Sc. Family and Community Science				
Course Title	FOOD MICROBIOLOGY				
Type of Course	Elective I				
Semester	V				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics of Food Science				
Course Summary	The course gives knowledge on the role of microorganisms causing food spoilage and manufacture of certain food products.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Gain deeper knowledge of role of micro-organisms and factors affecting the growth in food.	U	C	Instructor-created exams / Quiz
CO2	Analyze the various food borne infections caused by various microbial agents	An	C	Practical Assignment / Observation of Practical Skills
CO3	Relate the techniques used in cultivation and isolation of various microorganisms	An	P	Seminar Presentation / Group Tutorial Work
CO4	Evaluate the types of fermented foods and its significance in the food industry.	E	C	Instructor-created exams / Home Assignments
CO5	Analyze the various food safety measures and regulations implemented to maintain the hygienic standards.	An	P	One Minute Reflection Writing assignments

* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)
- Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Basics of food microbiology		10	12
	1	Introduction to Microbiology-	1	
	2	Role of Microbiology and its current status	1	
	3	Characteristics & Classification and identification of microorganisms (bacteria, virus and fungus)	2	
	4	Reproduction of microorganisms	1	

	5	Role of microorganisms and microbial enzymes in food industry	1	
	6	Factors affecting microbial growth and control in foods: intrinsic factors, extrinsic factors, implicit factors	1	
	7	Mode of Nutrition of microorganisms	1	
	8	Microbial flora in common food groups (cereals, pulses, milk and milk products, meat, poultry, fish, eggs, vegetables, fruits, sugars and fats).	2	
II	Food borne illnesses		10	12
	9	Bacterial agents: Salmonella, Staphylococcus, Clostridium, E.Coli	3	
	10	Fungal agents: Aspergillus, Fusarium, Penicillium	3	
	11	Viruses: Polio, Hepatitis	2	
	12	Protozoa: Giardia, Entamoeba	2	
III	Isolation of microorganisms		15	43
	13	Cultivation of micro organisms - Nutritional requirement of micro organism.	5	
	14	Culture media	5	
	15	Methods of isolation and identification of microorganisms	5	
	16	Gram staining	5	
IV	Food fermentation		13	31
	17	Use of microbes in fermentation	2	
	18	Fermented foods and their benefits	2	
	19	Traditional fermented foods, oriental fermented foods	2	
	20	Methods of manufacture for vinegar, sauerkraut, tempeh, miso, soya sauce	2	
	21	Methods of manufacture of beer, wine and traditional Indian foods	2	
	22	Probiotics and prebiotics	3	
V	Open ended module- Related experience		12	
	23	Basic knowledge of food sanitation and hygiene- survey /sampling food from hawkers- group work- discussion on results		
	24	Food safety indicator organisms		
	25	Personal hygiene & sanitation in handling food.- GMP in college canteen- group work		
	26	HACCP - -Need, principles, benefits and guidelines- training/seminar/workshop		
	27	Food standards and regulations in India-FSSAI- assignments		
	28	Visit to food industry- wine /beer/yogurt manufacture		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	-	-	-	-	-	1	-	-	-	-	-	-
CO 2	-	1	-	-	-	-	-	1	-	-	-	-	-

CO 3	1	-	1	-	-	1	-	-	2	-	-	-	-
CO 4	-	-	-	3	-	-	1	-	-	-	1	-	-
CO 5	-	2	2	-	1	-	-	1	1	-	1	2	1

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References:

1. Anna .K.Joshua, Microbiology, Popular Book Depot, Madras
2. Barnes and Noble, Bacteriology –Principles and practices.
3. M.R, Adam and Moss M,O. Food Microbiology, New Age International, 2007.
4. Elaine Perkins, Food Microbiology: Fundamentals, Challenges and Health Implications, Nova Science Publishers, 2015.

Programme	B. Sc. Family and Community Science				
Course Title	CHILD RIGHTS AND WELFARE				
Type of Course	Elective I				
Semester	V				
Academic Level	300- 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basic course in Human Development				
Course Summary	The course introduces the theoretical background of child rights and the welfare programmes for a child. To protect the child from injustice prevailing in the society.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Develop familiarity with the theoretical foundation of child rights, child development and protection laws in India	U	C	Instructor-created exams / Quiz
CO2	Gain insight into their practical implementation.	E	P	Practical Assignment / Observation of Practical Skills
CO3	Acquire the capability to establish connections and interlinkages between various child development and child protection laws.	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Become a responsible citizen fostering human values for the well being of the society.	Ap	M	Instructor-created exams / Home Assignments
CO5	Critique and voice opinion on discrimination injustice against children	Ap	P	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks	
I	INTRODUCTION TO CHILD RIGHTS		10	12	
	1	Definition of child and child rights	2		
	2	Declaration of the Rights of the Child	3		
	3	Fundamental rights related to children	1		
	4	Challenges faced by children in India: Female foeticide and infanticide, Gender bias against girl child, Child Marriage, Child Labour, Child poverty and malnutrition, Forced Begging, Lack of access to education, Child Abuse, Juvenile Delinquency	4		
II	PROTECTION OF CHILD RIGHTS: ROLE AND CONTRIBUTION OF IMPORTANT ORGANIZATIONS		15	31	
	5	United Nations Convention on the Rights of the child(UNCRC)	3		
	6	United Nations International Children's Emergency Fund (UNICEF)	2		
	7	World Health Organisation (WHO)	2		
	8	National Commission for Protection of Child Rights (NCPCR)	2		
	9	The National Institute of Public Cooperation and Child Development (NIPCCD)	2		
	10	Central Adoption Resource Authority (CARA)	2		
	11	Role of Non-Governmental Organization in India	2		
	III	INDIAN LAWS AND POLICIES FOR CHILDREN		15	43
		12	The Juvenile Justice (Care and Protection) Act	3	
13		The Prohibition of Child Marriage Act	2		
14		The Protection of Children from Sexual Offences Act	2		
15		The Child Labour (Prohibition and Regulation) Act	2		
16		The Pre-Conception & Pre-Natal Diagnostic Techniques Act	2		

	17	Right to Education Act	2	
	18	National Education Policy 2020	2	
IV	PROGRAMMES AND SCHEMES FOR CHILDREN		8	
	19	Mid-Day Meal Scheme	1	
	20	Integrated Child Development Scheme(ICDS)	1	
	21	POSHAN Abhiyaan	2	
	22	Samagra Shiksha Abhiyan Childline services (Child line foundation) Integrated programme for Street Children Integrated Programme for Juvenile Justice	4	
V	CHILD RIGHTS AWARENESS		12	12
	26	Plan and implement an awareness programme for school children on the importance of child rights.		
	2	Write a report of the awareness programme.		
	3	Do a research in current status of children in India.		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	-	-	-	-	-	1	-	-	-	-	-	-
CO 2	2	3	-	-	-	-	-	--	2	-	-	-	-
CO 3	-	-	1	-	-	-	-	1	-	2	-	1	-
CO 4	-	-	2	3	-	-	-	-	-	-	1	3	-
CO 5	-	1	-	3	-	-	-	1	-	-	1	-	1

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Group work (20%)
- Final Exam (70%)

References

1. Bajpai, Asha. (2003). Child rights in India: Law, policy, and practice. Delhi: Oxford University Press.
2. Chopra, G. (2015). Child rights in India: Challenges and action. New Delhi: Springer.
3. Pillai, Michael Vimal. (2008). Child protection: challenges and initiatives .Hyderabad: The Icfai University Press.
4. Sarada D and Rajani N (2009), Child Rights and Young lives. New Delhi Discovery Publishing house pvt ltd
5. Singh, Rubee. (2020).Government Schemes for Child Protection in India: Child Protection and Child Rights in India. Pacific Books International

Programme	B.Sc. Family and Community Science				
Course Title	FURNITURE AND FURNISHINGS IN INTERIORS				
Type of Course	Elective I				
Semester	V				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Creativity, basic course in material studies				
Course Summary	The course imparts the knowledge on the different types of furniture, its materials and soft furnishings in arrangement in interiors according to the design theme of the space.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the various features in period style furniture	U	F	Instructor-created exams / Quiz
CO2	Select and arrange furniture and furnishings in different rooms in residential spaces	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Knowledge on factors influencing planning of life space	U	C	Seminar Presentation / Group Tutorial Work
CO4	Develop confidence in decorating interiors using furniture and furnishings	Ap	C	Instructor-created exams / Home Assignments
CO5	Skill in designing interiors	C	P	Practical group work
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Furniture in the interiors		8	10
	1	Importance of furniture in relation to interiors, salient features of traditional, contemporary and modern styles in furniture	2	
	2	Furniture types-Modular furniture and mobile furniture; Case	3	

		goods and upholstered furniture; multi-purpose furniture		
	3	Materials used and construction of furniture-joints, finishes; Construction of upholstered furniture	3	
II	Furniture Selection and Arrangement		15	31
	4	Factors considered in selection of furniture to suit different spaces and purposes	4	
	5	General guiding concepts in arrangement of furniture	2	
	6	Arrangement of furniture in different rooms	4	
	7	Trends in furniture – impact of materials and methods, Ergonomics, space saving, innovation	3	
	8	Care and maintenance of furniture	2	
III	Furnishings for Designing Life Space		15	43
	9	Conceptual meaning and definition of design, elements and principles of design	2	
	10	Supportive elements as functional and aesthetic aspects – role of colour and light in designing life space –	2	
	11	Prang colour system and colour harmonies; sources and effect of lighting	3	
	12	Conceptual meaning of furnishings – definition and classification – soft, hard, resilient; selection and basic use in life space	2	
	13	Home furnishings as accessories, floor, wall and ceiling decorations, selection and use	2	
	14	Types of windows, window treatments –Hard (shutters, rollers, blinds, shades), Soft (curtains, draperies, swags, valances).	2	
	15	Window accessories: chords, rings, rods, trims, and decorative products.	2	
IV	Home Furnishings		10	14
	16	Need and importance of furnishing interiors	1	
	17	Factors influencing furnishing decisions: climatic conditions, needs and preferences, principles of design, availability	2	
	18	Selection of furnishings based on background – walls, floors and ceilings	1	
	19	Selection, care and maintenance of different home furnishings-slip covers, cushion covers, bed linen, bath linens, and kitchen linens.	2	
	20	Role of accessories as furnishing components - Functional and decorative – fabric based lamps, painting, wall hangings and soft toys	1	
	21	Alternate means of improving home furnishing conditions: elimination, concealment, rearrangement and supplementation.	2	
	22	Developing innovative designs	1	
	Related experience		12	
	23	Identifying different styles in furniture		
	24	Visit to a manufacturing unit of a furniture shop and observing the construction of case		
	25	goods and upholstered furniture		
	26	Listing furniture requirements for various activities carried out in a		

		household		
	27	Arranging furniture for different rooms in a living space using cut outs		
	28	Workshop on construction of soft window treatments		
	29	Visits to few modern interiors (residential and commercial) to observe the selection and fixing of various lighting fixtures		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	1	2	2	2	-	2	2	2	2	1	1	2
CO 2	1	1	2	2	-	-	2	2	2	2	-	1	2
CO 3	2	2	3	3	-	-	2	2	2	2	2	2	2
CO 4	1	2	2	3	2	-	2	2	3	1	1	1	3
CO 5	1	2	3	2	2	-	2	1	2	2	2	1	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References

1. Arora. S. P., and Bindra S.P. (2005). Building Construction. Delhi: Dhanpat Rai Publications
2. Bhavikatti, S.S., and Chitawadagi, M.V. (2019). (1st Ed.). Building Planning and Drawing. Hubli: Dreamtech Press
3. Faulkner, R. and Faulkner, S. (1987). Inside Today's Home. New York: Rinehart Winston, India.
4. Gandotra V., Shukul M., and Jaiswal N. (2011). Introduction to Interior Design and Decoration, New Delhi: Dominant publishers, India.

5. Jankowsky, W.(2001). Modern Kitchen Work Book. New Delhi: Rockport Publishers, India.
6. Maureen, M.(2004). Interior Design Visual Presentation - A Guide to Graphics, Models and Presentation Techniques. New Jersey: John Wiley and Sons.
7. Mendelson, C. (2005). Home Comforts: The Art and Science of keeping house. New York; London: Scriber Company
8. Premavathy, S.(2005).Interior Design and Decoration, New Delhi: CBS Publishers and Distributors, India.
9. Dutt, D.R.(2010). How Best to Plan and Build Your Home: A Total Guide for the Owner. New Delhi: Pustak Mahal (ISBN-13: 978-8122307559)
10. Stepat, D.V. (1991). Introduction to Home Furnishings. New York, London. : The Macmillan Company
11. Stuart. L. (2013). Furniture Design: An Introduction to Development, Materials and Manufacturing.London : Laurence King Publishing

Programme	BSc. Family and Community Science				
Course Title	EXTENSION EDUCATION				
Type of Course	Elective I				
Semester	V				
Academic Level	300- 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics in home Science				
Course Summary	The course motivates students to participate and engage in community programmes and attainment of organisational goals and explores the success of such programmes.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the objectives of extension education	U	C	Instructor-created exams / Quiz
CO2	Develop a social commitment for community	U	P	Practical Assignment / Observation of Practical Skills
CO3	Understand the rural sociology in India	U	C	Seminar Presentation / Group Tutorial Work
CO4	Develop good communication skills to aid community service	Ap	P	Practical Assignments
CO5	Build leadership qualities	Ap	P	Writing assignments
CO6	Identify the scope of Home Science extension education	An	C	Viva Voce
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Extension		8	10
	1	Scope and objectives of extension education in India.	2	
	2	Home science Extension: Needs and methods, vocationalization of Home Science in India,	3	
	3	Self-employment and Entrepreneurship through Home Science	3	
II	Community Development in India		10	14
	4	Objectives, Principle, Philosophy	2	
	5	Types of Communities-Rural and Urban	2	
	6	Community Development Programmes in India-Origin and History	2	
	7	Basic rural Institutions-School, Panchayat, Co-operatives ; other institutions- Mahilamandals, Youth Clubs, Rural Youth Programmes-4-H clubs, YFA	2	
	8	Rural Sociology: Characteristics, Comparison between rural and urban society, Kudumbasree.	2	
III	Programme Planning in Extension		15	43
	9	Definition, Principle, Scope, Criteria for good programme planning,	2	
	10	Steps involved in Programme Development	2	
	11	Plan of Work, Calendar of Work	1	
	12	Types of Evaluation in extension	2	
	13	Agencies and Programmes for Community Development SWB, Urban and Rural Co-operative Banks, District Rural Development Agency,	2	
	14	Employment Training and Poverty Alleviation-IRDP, JRY, TRYSEM, DWCRA, NAEP	2	
	15	Leadership : Concepts, Definition, Characteristics, Types,	2	
	16	Selection and Training of Leaders, Methods of identifying professional and lay leaders	2	
IV	Communication and Extension approaching methods		15	31
	17	Definition and Importance, Elements of communication- Leagen's model	3	
	18	Problems in communication, motivation- methods of motivating people	2	
	19	Classification of extension teaching methods- types, scope, advantages and limitations of methods.	3	
	20	Mass methods - bulletin, circular letters, exhibits and television	2	
	21	Audio-Visual Aids Importance of audio-visual aids in communication, Cone of experience,	3	
	22	Factors to be considered in selection, preparation and use of audio visual	2	

		aids, their merits and demerits		
V	Open Ended Module:		12	
	1	<p>Case studies: 1. Small projects using extension approaches 2. Carryout a case study</p> <p>Applications: Skill in planning and conducting small group communication</p> <p>Preparation of communication methods Apply communication methods in the implementation of programme Interaction with villagers and understand their needs</p> <p>Open-Ended Exploration and Assessment: Assignment, Report, Presentation and discussion of findings</p> <p>Group Assignment: Implementation of extension teaching methods in educational institutions</p>		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	1	2	2	2	-	2	2	2	2	1	1	2
CO 2	1	1	2	2	-	-	2	2	2	2	-	1	2
CO 3	2	2	3	3	-	-	2	2	2	2	2	2	2
CO 4	2	2	2	3	2	-	2	2	3	1	1	1	3
CO 5	1	2	3	2	2	-	2	1	2	2	2	1	2
CO 6	2	1	2	2	-	-	2	2	2	2	-	1	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam

- Assignments (20%)
- Final Exam (70%)

References

1. O.P. Dahama, O.P. Bhatnagar, Education and communication for Development, 2nd edition, Oxford and IBH publishing Co., Pvt.Ltd.New Delhi.
2. S.V .Supe. An Introduction to Extension Education, Oxford and IBH publishing Co., Pvt. Ltd. New Delhi.
3. A. Advivi Reddy, Extension Education, Sreelakshmi press, Bapla.
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5. Kulendaivel .K, Audio Visual Education, Sri Ramakrishna Mission Vidyalaya, Coimbatore.
6. Dey .S.K, Panchayat Raj, Asia publishing house, Bombay, 1961.
- 7.Waghmore.S.K, Teaching Extension Education, Prasant publishers, Vallabha, Vidhyanagar, 1980.

ELECTIVE II
SEMESTER V

Programme	B. Sc. Family and Community Science				
Course Title	FOOD SERVICE MANAGEMENT				
Type of Course	Elective II				
Semester	V				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Principles of management				
Course Summary	The course imparts knowledge on the organizational aspects and functioning of different types of food service institutions and the arrangement of its units				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Develop a knowledge base in key areas of Food Service Management	U	C	Instructor-created exams / Quiz
CO2	To create an awareness of the organizational aspects and functioning of different types of food service institutions	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	To develop managerial skills in the students	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	To understand space allocation and arrangement of food service units	U	C	Instructor-created exams / Home Assignments
CO5	To gain knowledge in theories and principles of management	Ap	P	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Food Service Industry		12	12
	1	Definitions, Scope and Importance	2	
	2	Types of catering-Hotel, Motel, restaurants, Cafeteria and chain hotels	3	
	3	Welfare- Hospitals, school lunch, residential establishments, and industrial catering	3	
	4	Transport- Air, Rail, Sea and Space	2	
	5	Contract and outdoor	2	
II	Physical Plant and Food Purchase		10	31
	6	Layout of kitchens	2	
	7	Types of kitchens	2	
	8	Ergonomics in kitchen design	2	
	9	Food purchase- procedures and factors involved	2	
	10	Planning and Budgeting	2	
III	Quantity food service and equipment's		13	43
	11	Definitions and objectives	2	
	12	Styles of service- waiter service, self service, vending, mechanics of waiter service	3	
	13	Equipment- classification, factors involved in selection, use and care of equipment's	3	
	14	Menu planning and types	2	
	15	Standardisation of recipes and portion control	2	
	16	Computer applications in menu planning	1	
IV	Management and sanitation		13	12
	17	Definitions, principles, functions and tools of management	3	
	18	Personal Management- Recruitment, selection and induction	3	
	19	Leadership qualities and styles of leaderships	2	

	20	Resource management- Money, time and energy	2	
	21	Sanitation of plant, kitchen hygiene and personal hygiene	1	
	22	First aid principles and practice	1	
V	Related Experiences		12	
		Visits to Food service establishment Designing kitchen layouts Management of resources- in terms of budgeting, book keeping, etc Group assignments- table setting		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	1	3	1	2	3	3	1	1	1	2	3
CO 2	2	3	2	2	1	-	3	-	2	1	1	2	3
CO 3	2	2	2	2	-	-	2	-	2	1	1	2	3
CO 4	3	2	2	1	-	-	3	2	1	1	1	2	3
CO 5	2	3	3	3	2	-	3	3	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References

1. Sethi M and Malham S (2007) Catering Management and integrated approach, wiley Eastern Limited
2. Caoufman R (2000) Mega planning- Practical tools for organisational success. Sage Publications
3. Shrinj Y P (2001) Effective food service management, Anmol Publications Limited , Delhi
4. Chhabra T N (2006) Principles and practice of management, Dhanpat Rai and Co Limited
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Programme	B. Sc. Family and Community Science				
Course Title	EARLY CHILDHOOD CARE AND INTERVENTION				
Type of Course	ELECTIVE II				
Semester	V				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Course in Human Development				
Course Summary	The course helps to understand a child and the significance of childhood education and care to foster growth and development in all dimensions.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Describe the meaning and significance of early childhood education	U	C	Instructor-created exams / Quiz
CO2	Apply the skills in planning, organising and implementing programmes in a preschool	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Analyse the administrative skills and management strategies in Early Childhood Education	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Determine the importance and methods to foster creativity in early childhood years	U	C	Instructor-created exams / Home Assignments
CO5	Develop skills in early intervention	Ap	P	Writing

	strategies, developing creative teaching methods, growth monitoring and milestone mapping			assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	
I	Introduction to Early Childhood Care and Education		8	14
	1	Significance, aims and objectives of early childhood care and education	2	
	2	Types of preschools, Developmentally Appropriate Practices and School Readiness	3	
	3	Methods of early childhood education : Montessori, Kindergarten	3	
II	Curriculum planning and Approaches in ECCE		15	31
	4	Early childhood curriculum: Definition and concept of curriculum	5	
	5	Different curriculum approaches (Project approach, Reggio Emilia Approach, Head Start Program, High Scope Curriculum)	5	
	6	Programme Planning: Definition, objectives, importance, principles	2	
	7	Planning for learning experiences – long term, short term, weekly, daily plan, factors affecting curriculum planning	3	
III	Administration and Management of Early Childhood Centre		18	43
	8	Meaning, roles, responsibilities and skills of administrator. Administrative set up, infrastructure, records and registers – need, significance, types and maintenance, job profiles of personnel.	2	
	9	Designing of early childhood facilities – physical set up and building, choosing the site	2	
	10	General design principles, setting up early childhood classroom	1	
	11	Planning space allotment – designing and maintaining outdoor and indoor space, storage	2	
	12	Need for play spaces and its influence in learning	1	
	13	Characteristics of good play equipment and materials, care and uses of	2	

		play equipment		
	14	Indigenous play materials	1	
	Creativity during early years			
	15	Fostering creativity in early childhood years: Definition, stages and types of creativity. Role and importance of fostering creativity.	2	
	16	Strategies to foster creativity in classroom – Visual, Auditory, Tactile, Kinesthetic (VAKT), music and movement, story telling, puppets, field trips	3	
	17	Teaching – learning materials	2	
IV	Developmental Delays and Intervention		7	10
	18	Milestones of development – Physical – gross and fine motor skills, cognitive, social, emotional, language	2	
	19	Developmental delay – meaning, definition, need and importance of early identification,	2	
	20	Techniques used for assessment	1	
	21	Early stimulation and early intervention – meaning, need and importance.	1	
	22	Therapeutics of early intervention	1	
V	Open ended module- related experience		12	
	23	Visit to various ECE centres, develop a checklist to compare on the type of curriculum followed and write a report		
	24	Theme based weekly programme- plan a curriculum and execute for preschool children		
	25	Developing learning materials for early childhood education		
	26	Developing a prototype designs for toys for children- group work		
	27	Market survey- ECE resource materials		
	28	Visit early intervention units and get acquainted with the modes of intervention and assessment of children with developmental delays.		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	3	2	-	1	3	2	1	1	1	2	3
CO 2	2	3	3	2	-	3	3	2	1	1	1	2	3
CO 3	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 4	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 5	1	3	3	2	-	3	3	2	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Programming Assignments (20%)
- Final Exam (70%)

References

1. Agarwal, J. C. (2007). Early childhood care and education: principles and practices. New Delhi: Shipra
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12. Sharma, K.K., & Miglani, P. (2016). *Gender, school and society*. Patiala: Twenty First Century Publications.
13. Early Childhood Care and Education (n.d.) Retrieved from

http://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/home_science/10._early_childhood_care_education_and_development/14._aurobindo,_gijubhai_badheka,_tarabai_modak/et/6716_et_et.pdf
14. Singh, A. (1995). *Playing to learn: A training manual for early childhood education*. Chennai: M. S. Swaminathan Research Foundation.

Programme	B. Sc. Family and Community Science				
Course Title	HOSPITALITY AND HOUSEKEEPING				
Type of Course	Elective II				
Semester	V				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics in Resource management				
Course Summary	The course gives students an insight on the organisational level in the hospitality industry and the basics in housekeeping management.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Provide students with an insight into the importance of the Housekeeping Department..	U	C	Instructor-created exams / Quiz
CO2	Identify the various hotel personnel and their duties and responsibilities	A	P	Practical Assignment / Observation of Practical Skills
CO3	Perform the activities in the Housekeeping Desk.	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Develop a comprehensive knowledge of the public areas and the guest room cleaning process.	U	C	Instructor-created exams / Home Assignments
CO5	Practice and create a safe working environment	Ap	P	Writing assignments
CO6	Develop personal skills and in accommodation operation and services	Ap	P	Viva Voce
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Introduction to Hospitality and Front Office Management		10	12
	1	Classification of hotels and other hospitality Institutions, importance of tourism for hospitality industry,	2	
	2	Major departments of hospitality organization, Hostess training. Hospitality marketing.		
	3	Introduction to front office department - Layout and planning, Personnel organization and staff duties,	3	
	4	Qualities and etiquettes, room types and tariff, Guests cycle and Room reservation, Guests services		
	5	Lobby management, Coordination and communication of front office with other departments;	3	
	6	Front office records and audit, electronic front office.	2	
II	Housekeeping: Organization and Structure		10	31
	7	Functions and structure of Housekeeping Department – desk control, linen room, laundry, floor pantry	3	
	8	Organization and duties, Hierarchy and Job descriptions		
	9	Layout, Inter-departmental coordination and communication, Interrelationship with Personnel Department:	3	
	10	Manpower planning, Recruitment, training and appraisals.	2	
	11	Book Keeping and Record Maintenance	2	
III	Linen and Laundry management, Sanitation and Safety Aspects		15	43
	12	Classification and selection of linen, par stock determination, storage, distribution and control of linen and uniforms, condemnation and reuse, bed making and turning down.	3	
	13	Layout and physical attributes of Linen room and linen storage, Laundry: Types, duties and equipment	3	
	14	Methods of washing, finishing processes and stain removal.		
	15	Cleaning Guest rooms and service areas, Rules, procedures and principles, types of room cleaning- daily, weekly, spring cleaning,	3	
	16	Sterilization, disinfection, cleaning equipment, cleaning agents, maid's trolley / cart.		
	17	Control of infestation, Room inspection checklist, Integrated Waste Management (IWM).	3	
	18	First Aid, safety and security measures		
	IV	Aesthetic treatments for Indoor & Outdoor Environment		8
19		Interior designing of commercial/hospitality areas.	2	
20		Selection and care of Furniture, furnishings, lighting and accessories.	2	
21		Window treatments, curtain styles, care & maintenance	2	
22		Floral decorations and table setting.	2	
V	Related experience		12	

23	Visit to housekeeping unit of 3-star/5star hotels to get familiar with the role of housekeeping		
24	Make a list of activities which a house keeper must look after in any establishment.		
25	Prepare a report on job specification and description of various house-keeping personnel .		
26	To talk to various establishment care takers/housekeeping/workers to find - out details of their duties responsibilities and the problems.		
27	State and list the requirement for a cleaning unit or laundry unit attached to an establishment.		
28	Visit to establishment to get familiar with the role of housekeeping.		
29	Make a list of activities which a house keeper must look after in any establishment.		
30	Prepare a report on job specification and description of various house-keeping personnel .		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	1	-	-	-	-	3	-	-	-	-	-	-
CO 2	1	1	-	-	-	-	-	1	-	-	-	-	-
CO 3	-	-	1	-	-	-	-	-	-	-	-	-	1
CO 4	1	-	2	3	-	-	1	-	-	-	-	1	-
CO 5	-	1	-	-	1	-	-	-	1	-	-	2	-
CO 6	1	-	-	1	-	-	-	-	2	-	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam

- Assignments (20%)
- Final Exam (70%)

References

1. Sudhir Andrews Hotel House keeping a Training Manual – 2nd edition-Tata Mcgraw hill – 2009
2. G.Raghubalan & Smrita Raghubalan Hotel Housekeeping Operations and Management - 2nd edition -Oxford University Press 2009.
3. Ursula Jones Cassell - Hotel & Catering Management – 2nd edition-Octopus Publishing Group Limited, 1997.
4. John C. Bronson and Margaret Lennox Hotel Hostel Hospital Housekeeping-5th edition– Edward Arnold Taylor& Francis Group -1988.
5. Casado, M. (2000) *Housekeeping Management*. New York: John Wiley and Sons, Inc.
6. Martin, R. (1998) *Professional Management of Housekeeping Operations*. (3rd ed.). New York: John Wiley and Sons, Inc.
7. Kappa, M., Nitschke, A. and Schappert, P. (1995) *Housekeeping Management*. New York: Educational Institute of the American Hotel and Motel Association.

Programme	B. Sc. Family and Community Science				
Course Title	COMMUNITY DEVELOPMENT				
Type of Course	Elective II				
Semester	V				
Academic Level	300 -399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	1. Basics in Science				
Course Summary	This Course examines the history of housing, economic trends and social policies that have affected the marginalized communities across the country and project the organizing and capacity building measures that community development professionals and activists have sought to improve these conditions.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the concept of community development from community organization	U	C	Instructor-created exams / Quiz
CO2	Comprehend significant phases in community development	An	P	Practical Assignment / Observation of Practical Skills
CO3	Gain knowledge on sustainability and community development concepts	An	C	Seminar Presentation / Group Tutorial Work
CO4	Envisage the role of community-based organizations in community development	An	C	Instructor-created exams / Home Assignments

* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)

- Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Concept of Community Development and Role of Community Based Organizations		15	12
	1	Meaning and Definition of community development	1	
	2	Principles, Philosophy and objectives of community development	1	
	3	Elements of community development -Community development as a process, community development as a method, community development as a programme, community development as a movement	3	
	4	Rural development initiatives prior to independence and post-independence	2	
	5	Conceptual meaning and definition of community based organizations	2	
	6	Role, structure and functions of community organizations	2	
	7	Models of community based organizations	2	
	8	Approaches of community based organizations	2	
II	Phases of Community Development		10	31
	9	Phases of community development – definition and needs	2	
	10	Seven Phases of community development: sequence and exclusive roles - Relationship, Assessment, Discussion, Organization, Reflection, Modification, Continuation	3	
	11	Personnel involved in community development activities – qualities and role	2	
	12	National Extension Service – Role of student volunteers in community development	3	
III	Evaluation of community development programmes		15	43
	13	Review of community development programmes	2	
	14	Evaluation methods	3	
	15	Analysis /merits and demerits	3	
	16	Community involvement and assay of Benefits	4	
	17	Incentives and Prizes/ Awards	3	
IV	Sustainability and Community Development		8	12
	18	Concept of sustainable community development	2	

	19	SDGs – Sustainable Development Goals – concept	2	
	20	Significance of SDGs to community development	2	
	21	Need for sustainable community development	1	
	22	Sustainability in community development- aims, objectives and principles	1	
V	Open Ended Module		12	
	1. Visit to villages to observe community activities 2. Assessment of selected community development programmes 3. Prepare a document on community development activities in a model village			

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	1	3	1	2	3	3	1	1	1	2	3
CO 2	2	3	2	2	1	-	3	-	2	1	1	2	3
CO 3	2	2	2	2	-	1	2	-	2	1	1	2	3
CO 4	3	2	2	1	-	1	3	2	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References:

1. Banta Sharma Nidaugmayum (2015). Community organization and social

registration. New Delhi: Janadaprkashan

2. Indra Godara (2013). Committee and community organization. New Delhi : Black prints publishing
3. Kunal Bhatia (2012). Social Work and Community Development. New Delhi: Sonali publications
4. Reddy A.S.A (2001). Extension Education. Bapatla :Sree Lakshmi Press
5. Thomas William,A.J. (2015). Rural Development Concept and Recent approaches. New Delhi, RAWAT publications

SKILL ENHANCEMENT COURSES
SEMESTER V

Programme	B. Sc. Family and Community Science				
Course Title	BAKERY AND CULINARY ARTS				
Type of Course	SEC II				
Semester	V				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	3	3	-	-	45
Pre-requisites	Basics of food science				
Course Summary	The course helps one develop vocational skills in baking and culinary arts paving the way towards self employment and revenue generation.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	To master fundamental baking techniques, including mixing, proofing and baking	Ap	P	Practical
CO2	Understanding the science behind ingredients and their role in baking.	U	C	Instructor based exams
CO3	Learning proper hygiene and safety practices in a culinary setting.	U	C	Instructor based exams
CO4	Building a foundational understanding of the business aspects of a bakery including cost management and customer service	U	C	Instructor based exams/assignments
CO5	Cultivating creativity in designing and decorating baked goods	Ap	P	Practical/hands on training
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I		Introduction to baking fundamentals	7	10
	1	Baking – definitions and scope	1	

	2	Bakery products- types, specifications and composition of baking items	2	
	3	Ingredients – role and changes during baking	2	
	4	Overview of essential tools and baking equipment’s	1	
	5	Factors affecting the quality of baked products	1	
II	Bread, cookies, pastries and cakes		10	26
	6	Bread- types, ingredients and preparation	2	
	7	Cookies- types, ingredients and preparation	2	
	8	Pastries- types, ingredients and preparation	2	
	9	Cakes- types, ingredients and preparation	2	
	10	Decoration and designing	2	
III	Chocolates, desserts, and snacks		8	22
	11	Chocolates- types, ingredients and preparation	2	
	12	Desserts- types, ingredients and preparation	2	
	13	Snacks- types, ingredients and formulations	2	
	14	Seasonings	1	
	15	Decoration and designing	1	
IV	Integration of culinary arts and quality management		9	10
	16	Introduction to culinary terminology	1	
	17	Understanding kitchen tools, equipment’s and food handling practices	1	
	18	Cooking techniques	1	
	19	Food presentation and plating techniques	2	
	20	Food safety and quality management	1	
	21	Food regulations and compliance	2	
	22	Hazard analysis and critical control points	1	
V	Related experience		12	
	23	Hands on training sessions		
	24	Innovative product development		
	25	Visits to established units		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	1	3	1	2	3	3	1	1	1	2	3
CO 2	2	3	2	2	1	-	3	-	2	1	1	2	3
CO 3	2	2	2	2	-	-	2	-	2	1	1	2	3
CO 4	3	2	2	1	-	-	3	2	1	1	1	2	3
CO 5	2	3	3	3	2	-	3	3	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References:

1. Mathuravali S M D (2021) Textbook of Bakery and Confectionary. Jaya Publishing House.
2. Ashok kumar Y (2012) Textbook of Bakery and Confectionary. 2nd edition, Prentice Hall India Learning Pvt
3. Vohra A (2021). Fundamentals of Baking. A V Publications
4. Bali P S (2018) Theory of Baking. Oxford University Press
5. Gupta A K (2021) Text Book of Bakery and Confectionary, Daya Publishing House

SEMESTER VI

Programme	B. Sc. Family and Community Science				
Course Title	DIET THERAPY				
Type of Course	Major				
Semester	VI				
Academic Level	300- 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basics in Nutrition science and Nutrition through life cycle				
Course Summary	The course helps to plan therapeutic diets for diseased condition and an overview of hospital diets and role of a dietician in nutrition care process.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the role of dietitian and to maintain good nutritional status, correct deficiencies or disease conditions of the patients.	U	C	Instructor-created exams / Quiz
CO2	Develop skill to plan and prepare therapeutic diets for prevention of disease conditions	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Gain knowledge about principles of diet therapy and different therapeutic diets.	U	C	Seminar Presentation / Group Tutorial Work
CO4	Plan diets for patients with lifestyle disease	C	P	Instructor-created exams / Home Assignments
CO5	Use skills in providing information and advice regarding dietary intake to individuals, groups and communities	Ap	P	One Minute Reflection Writing assignments
CO6	Develop aptitude for taking up dietetics as a profession.	U	M	Viva Voce
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Objectives of diet therapy		8	12
	1	Classification of dietician, ethics and responsibilities of dietician, duties of a dietitian. IDA- objectives	2	
	2	Introduction to diet therapy, Principles of diet preparation and counselling. Normal diet in the hospitals –, liquid ,semi liquid, light , soft diet, bland diet and regular diet	2	
	3	Different types of Feeding - Basic concepts of oral feeding, tube feeding, gastrostomy feeding	2	
	4	Computer Assisted Instructions (CAI) - Diet Planning using computers, Use of Technology in diet counselling.	2	
II	Therapeutic diets for the following disorders		15	31
	5	Under weight - definition, etiology, treatment	2	
	6	Obesity - definition, etiology, treatment-fad diets.	2	
	7	Theories of obesity	2	
	8	Role of hormones	1	
	9	Types of obesity, Complications of obesity	2	
	10	Diseases of the gastro intestinal tract- ulcer, constipation & diarrhea	3	
	11	Diseases of the cardio vascular system -risk factors and treatment a) atherosclerosis b) hypertension (DASH diet)	3	
III	Diseases of the liver and gall bladder		10	12
	12	Risk factors and diet therapy for a)jaundice b) hepatitis c) cirrhosis d) fatty liver .	5	
	13	Medical nutrition therapy for Acute and chronic infectious disease-	3	
	14	Typhoid, Tuberculosis And HIV and AIDS	2	
IV	Diabetes mellitus & Diseases of kidney and urinary tract.		12	43
	15	Diabetes mellitus- Types, causes, symptoms, bio-chemical changes, insulin, types and uses,	2	
	16	Glycemic index, hypo-glycemic drugs, food exchange list, dietary management.	2	
	17	Diseases of the kidney and urinary tract- Acute and chronic nephritis, Nephrotic syndrome, Renal failure,	2	
	18	Urinary calculi- types of caculi and dietary management	1	
	19	Causes and dietary treatment of kidney diseases and dialysis ,	1	
	20	Types of dialysis- ESRD (End Stage Renal Dialysis). Renal transplantation	1	
	21	Inborn errors of metabolism- Phenylketonuria, galactosaemia	1	
	22	Special diets- Purine restricted diet, ketogenic diet, diet for autistic children	2	
V	Open Ended Module- Practicals		30	

	23 A B	Build a record Weights and measures of foods. Preparation of Hospital Diets		
	24	Preparation of gluten free diet Preparation of Lactose free diet		
	25	Planning and preparation of hospital diets <ul style="list-style-type: none"> ● Diet for obesity ● Diet for under weight ● Diet for anaemia 		
	26	Diet for diseases of the GI tract – peptic ulcer, diarrhoea, constipation. Diet for Diabetes and Cardio-vascular diseases-Type1 & Type 11 Diabetes, atherosclerosis, hypertension.		
	27	Diet for diseases of the kidney – nephritic and nephrotic syndrome		
	28	Diet in liver diseases – Viral hepatitis and cirrhosis Visit to Hospital Dietary Department		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	1	-	3	-	-	3	2	-	2	-	3	1
CO 2	3	2	-	-	-	3	1	-	-	-	3	-
CO 3	2	1	1	1	-	2	3	-	-	-	-	-
CO 4	-	1	1	-	-	3	1	-	1	-	3	-
CO 5	-	3	-	-	-	3	1	-	-	-	2	3
CO 6	1	-	3	-	-	-	1	3	1	-	2	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

Reference Books:

1. F.P. Antia, Clinical Dietetics and Nutrition, III edition, Oxford University Press, Delhi, 1989.
2. SriLakshmi B., Dietetics, New Age International (p) Ltd, NewDelhi-2002.
3. SwaminathanM., Principles of Nutrition and Dietetics.
4. Subhangini Joshi, Nutrition and Dietetics
5. Robinson, Corinno H, Basic Nutrition and Diet therapy.

Journals

1. Indian Jol of Nutrition and dietetics published by Avinashilingam Deemed University, CBSE.
2. The Indian Journal of Medical Research.
3. Nutrition, a Quarterly publication of the NIN, Hyderabad.

Programme	B. Sc. Family and Community Science				
Course Title	APPAREL CONSTRUCTION AND CARE				
Type of Course	Major				
Semester	VI				
Academic Level	300- 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basics of Textile Science				
Course Summary	The course deals with the methods used in apparel construction and the care given to fabrics according to its origin. It also focusses on the the importance on visually attracting buyers through window displays need in sale of merchandise.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Explain different laundering techniques	U	C	Instructor-created exams / Quiz
CO2	Apply principles of laundering on different fabrics	Ap	C	Instructor-created exams / Quiz
CO3	Perceive the skill of inspirational and innovative techniques to implement in apparel merchandise	U	C	Seminar Presentation / Group Tutorial Work
CO4	Evaluate the relationship between creativity and marketing..	Ev	C	Instructor-created exams / Home Assignments
CO5	Skill to apply the theories of drafting and pattern making to construct and create designs	Ap	P	Practical Assignment / Observation of Practical Skills
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	
I	Apparel Construction		10	12
	1	Body measurements- importance, method and body measurements for male, female and child	2	
	2	Methods of construction- drafting – types of draft- advantages and	3	

		disadvantages Draping		
	3	Parts and function of sewing machine	1	
	4	Sewing terminologies- grain, selvedge, grain perfect, straight grain, Steps in preparing fabric before cutting	2	
	5	Tools of sewing- general tools, cutting tools, measuring tools, marking tools, pressing tools	2	
II	Fabric Care		15	43
	6	Water- sources, types, methods of softening	3	
	7	Soaps and Detergents	3	
	8	Stain Removal- bleaches, laundry blues	5	
	9	Stiffening agents	2	
	10	Dry cleaning	2	
III	Laundering of Fabrics		10	12
	11	Laundering of cotton	2	
	12	Laundering of wool	2	
	13	Laundering of silk	2	
	14	Laundering of synthetics	2	
	15	Laundering of special items- laces, georgette, velvet	2	
IV	Merchandising		10	31
	16	Merchandising, Introduction to Merchandising,	1	
	17	Types of Merchandising,	1	
	18	Role of Merchandiser, Quality essential for a Merchandiser.	1	
	19	Visual merchandising- meaning and importance	1	
	20	Store interior and store exterior	2	
	21	Elements in visual merchandising- lights, fixtures, furniture, props	3	
	22	Types of window displays	1	
V	Open ended module- Practicals		30	
	23	Drafting of basic adult block- bodice, sleeve, skirt		
	24	Basic Pattern making and adaptation-Bodice- manipulation of darts, princess cut, yokes, Sleeves- puff, flutter		
	25	Drafting and construction of garments- girls frock, Sari blouse, Salwar & Kameez		
	26	Window display- observation and presentation		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	1	-	-	-	-	-	2	-	-	-	-	-
CO 2	2	-	1	1	1	-	1	-	-	-	1	-
CO 3	-	-	2	3	-	-	2	-	3	-	1	-
CO 4	1	-	1	2	-	-	2	-	2	-	1	-
CO 5	-	-	-	1	-	-	2	-	1	-	-	-
CO 6	-	-	-	3	-	-	-	-	-	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References:

1. Noemia D'souza, Fabric Care, New Age International (P) Ltd., New Delhi.
2. Martin M. Pergler, Visual merchandising and display, Conde Nast publication, Canada, 2012
3. Armstrong, Pearson. (1995), Pattern making for Fashion Design, Fairchild Publication, New York 1995 (Indian Ed.)
4. Cream, Penelope.,(1996), The Complete Book of Sewing - A Practical Step by Step Guide to Sewing Techniques, DK Publishing Book, New York ,
5. Dorothy wood, the practical encyclopaedia of sewing, Anneess publishing Ltd, London.
6. Holman, Gillian. (1997), Pattern Cutting Made Easy, BSP.
7. Janace E. Bubonia. (2012), Apparel production terms and processes, Fairchild Books, New York.
8. Kallal, Mary Jo, (1985), Clothing Construction, Mc Millan Publishing Company, New York.

9. Norma Hollen, Jane Saddler, Anna L. Langford & Sara, J.,(1988) Textiles 6th ed., Macmillan Publication, New York
10. Readers, Digest, Complete Guide to Sewing, The Reader's Digest Associations (Canada) Ltd. Montreal, Pleasantville, New York.
11. Thomas, A, (1986), the Art of Sewing UBSPD Publishers Distributors Ltd. New Delhi

Programme	B. Sc. Family and Community Science				
Course Title	FAMILY DYNAMICS				
Type of Course	Major				
Semester	VI				
Academic Level	300- 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics in Human development				
Course Summary	The course describes the importance of marriage and family in the society and awareness of other aspects related to interpersonal relations				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Develop healthy attitude towards marriage and interpersonal relationships	Ap	C	Instructor-created exams / Quiz
CO2	Understand the importance of family in today's social context	U	C	Instructor-created exams / Quiz
CO3	Solutions to thrive different circumstances in stages of lifecycle	Ap	P	Practical Assignment / Observation of Practical Skills
CO4	Solving critical family situations	A	C	Instructor-created exams / Quiz
CO5	Develop sound knowledge on methods of family planning	U	F	Instructor-created exams / Quiz
CO6	Improve the knowledge regarding legal issues concerning women	U	F	Seminar Presentation / Group Tutorial Work
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Marriage		15	43
	1	Definition, purpose, functions	1	

	2	Changes and Challenges in marriage	2	
	3	Selection of spouse- factors influencing, changing trends	2	
	4	Preparation for Marriage	1	
	5	Courtship and Engagement	1	
	6	Marital adjustments		
II	Family		15	31
	7	Definition and importance	2	
	8	Types of family- classification- descent, blood relations, number of mates	2	
	9	Features of modern family	2	
	10	Functions of family- essential and non essential	2	
	11	Family life cycle- Middle age- characteristics and adjustments	2	
	12	Methods of family planning		
III	Family Crisis		10	12
	13	Meaning and classification	2	
	14	Desertion, divorce, death, suicide and disabilities- causes, effects, methods to cope.	2	
	15	Interpersonal conflicts: Types of conflicts and management skills (in relation with marital, parental, workplace, family, and friends)	2	
	16	Deviant sexual behaviour- characteristics, causes, treatment- Transvestism, fetishism, exhibitionism, Voyuerism, sadism, machoism, zoophilia, paedophilia	1	
	17	Mental health- meaning, introduction, importance	1	
IV	Gender and community		8	12
	18	Women rights Constitutional provisions accorded to women	2	
	19	UDHR, UN-CEDAW and UN-CRC	1	
	20	Legal aspects related to women: PCPNDT Act, PWDVA, Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) act, Indecent Representation of Women (Prohibition) Act, The Dowry Prohibition Act.	1	
	21	Overview of laws related to marriage – Hindu marriage Act, Special Marriage act, muslim marriage act and Christian marriage act	2	
	22	Laws on divorce and property inheritance	2	
V	Open ended Module-Related Experience		12	
	1. Group discussion/role play/simulations on interpersonal relationships 2. Conduct workshops on: cultural variations in interpersonal relationships, family dynamics, verbal vs non-verbal communication, and social networking.			

	<p>3. Plan an interaction with a counselor or therapists working in the area of interpersonal conflicts (in the family family/peer group/parent-child dyad/workplace).</p> <p>4. Conduct a workshop on enhancing family cohesion and conflict resolution</p> <p>5. Select a form of family crisis or stress. Describe ways of preventing and managing the crisis.</p> <p>6. Create posters about ways to improve interpersonal communication skills and patterns of relating to enhance resiliency in relationships.</p>		
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Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	-	-	-	-	-	-	1	-	-	-	-
CO 2	1	-	-	-	-	-	-	1	-	-	-	-
CO 3	1	1	1	-	-	-	-	-	-	-	3	-
CO 4	1	1	2	-	-	-	-	-	-	-	2	-
CO 5	-	1	-	-	-	-	2	-	-	-	-	-
CO 6	1	1	-	-	-	-	2	-	-	-	-	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References:

1. Devadas R.P. and Jaya N. (1984) A Textbook on Child Development, Mac Millan, India ltd.
2. Rao C.N.S. (1990) the Family, S. Chand and Company Ltd., New Delhi.
3. Hurlock E.B., Developmental Psychology, McGraw Hill
4. Antony P. D'souze, sex education and personality development, Ustian publishers,4/7Deshabhandhu, Gupta road, New Delhi.

ELECTIVE III
SEMESTER VI

Programme	B.Sc. Family and Community Science				
Course Title	NUTRITION FOR HEALTH AND FITNESS				
Type of Course	Elective III				
Semester	VI				
Academic Level	300- 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basic course in Nutrition Science				
Course Summary	The course helps understand the nutritional requirements during fitness to be healthy and supplement ones diet accordingly.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understanding the basic principles of diet, health and wellness	U	C	Instructor-created exams / Quiz
CO2	Identify the action and effect of various nutrients in fitness.	A	C	Practical Assignment / Observation of Practical Skills
CO3	Categorize the different types of nutritional supplements and its functions for fitness.	An	P	Seminar Presentation / Group Tutorial Work
CO4	Critically evaluate the importance, types and effects of physical activity and fitness on health.	E	C	Instructor-created exams / Home Assignments
CO5	Creating sports diet clinic and evaluating nutrition counselling techniques.	E	P	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Introduction To Diet, Health & Wellness		8	12
	1	Define health and wellness.	1	
	2	Importance of health and wellness education.	3	

	3	Diet for health & wellness.	2	
	4	Nutritional risks among male and female sports persons. Nutritional deficiencies, Eating disorders	2	
II	Role of nutrition in fitness		10	12
	5	Effect of macronutrients during exercise- carbohydrate, protein, fat	3	
	6	Effect of micronutrients during exercise: Iron, Calcium and vitamins	3	
	7	Role of Water and Electrolytes – Requirements, Fluid Balance and Thermoregulation in Exercise	2	
	8	Effect of Dehydration in Exercise Performance	2	
III	Dietary supplements & Ergogenic Aids		15	43
	9	Dietary supplement: Definition and classifications;	4	
	10	Ergogenic aids: Definitions and Classifications;	3	
	11	Regulations on Dietary supplements: FSSAI and NADA	3	
	12	Anti doping agency - list of banned drugs/substances. Merits and demerits of ergogenic aids and supplements	4	
IV	Importance of Physical activity and fitness		15	31
	13	Importance, types and benefits of physical activity	2	
	14	Types of Fitness. Components of Physical Fitness – Methods and Benefits Types of Physical Fitness - Health related Physical Fitness - Performance Related Physical Fitness - Cosmetic fitness	2	
	15	Exercise - Types and effect of exercise on various systems(Skeletal, Muscular, Respiratory and Circulatory)	2	
	16	Fitness Balance, Principles of First Aid, Nutritional Balance	2	
	17	Principles of planning weight reducing diets.	2	
V	Open ended Module		12	
		<ul style="list-style-type: none"> Start Sports nutrition clinic. Nutrition awareness class for sports students. Diet counselling. Diet plan for weight management and physically active individuals. 		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	1	-	3	-	2	3	-	-	-	1	-
CO 2	-	-	-	-	-	-	-	-	-	-	-	-
CO 3	1	-	-	-	-	-	1	-	-	-	-	-
CO 4	1	-	-	-	-	1	-	-	-	-	-	1

CO 5	-	-	2	1	-	2	-	-	2	-	1	2
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Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References

1. Werner W. K Hoejer (1989), Life time Physical Fitness and Wellness, Morton Publishing Company, Colorado.
2. Mishra, S. C (2005) Physiology in Sports. Sports Publication, New Delhi
3. Greenberg, S. J and Pargman, D (1989) Physical Fitness – A Wellness Approach Prentice Hall International (UK) Limited, London
4. Swaminathan M. (2008) Essentials of Food and Nutrition Bangalore Printing Publishing Co.New Delhi
5. McArdle, W. D, Frank I. Katch, F. I and Victor L. Katch (1996) Exercise Nutrition: Energy
6. Nutrition
7. and Human Performance. William & Wilkin Publishing USA.
8. Mahan, K and Stump, E. S (1996) Krause Food and Nutrition and Diet Therapy W.B Saunders Company, USA.

Programme	BSc. Family and Community Science				
Course Title	ADULTHOOD AND AGING				
Type of Course	Elective III				
Semester	VI				
Academic Level	300 – 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basic Course in Human Development				
Course Summary	The course describes the different stages of adulthood and the problems of aging and the care to be given to the elderly.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Explain variations in the experiences of adulthood and old age across cultures and genders	U	C	Instructor-created exams / Quiz
CO2	Discuss factors that affect physical, cognitive and socio-emotional development during adulthood and old age	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Identify developmental needs of varied groups of adults and elderly across contexts	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Evaluate policy recommendations for adults and elderly across contexts	U	C	Instructor-created exams / Home Assignments
CO5	Execute developmental programs of intervention for varied groups of adults and elders	Ap	P	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Introduction to adulthood and aging		8	10
	1	Introduction – Transition from adolescence to emerging adulthood	1	

	2	Definition of adulthood and aging	2	
	3	Definition and scope of Gerontology	2	
	4	Stages of adulthood: Early Adulthood, Middle Adulthood And Late Adulthood	2	
	5	Levinson's Theory Of Adulthood Development	1	
II	Signs of aging		15	43
	6	Physical changes -Cardiovascular and Respiratory systems, Motor performance, Immune system	3	
	7	Cognitive changes-Changes in mental abilities - Crystallized and fluid intelligence, Information processing - Speed, Attention, Memory, Problem solving and Creativity	3	
	8	Psychological changes Life transitions and adjustments during early adulthood: Exploring sexual orientations, stable romantic relationships, alternative life choices, marriage, family life, parenting and caregiving, social mobility	3	
	9	Social changes- Interpersonal relationships and responsibility challenges in different spheres of life (balancing work and family, socio-cultural responsibilities, health challenges, emotional stresses, financial security)	3	
	10	Cultural, gender and social class variations in the experience of adulthood and aging	3	
III	Developmental tasks for adulthood		10	12
	11	Definition and characteristics of developmental tasks	2	
	12	Early adulthood Developmental Tasks –marriage, parenting, career	3	
	13	Middle-age Developmental Tasks	3	
	14	Old Age Developmental Tasks	2	
IV	Challenges for elderly & Care		15	31
	15	Dependency in old age, Death of spouse	2	
	16	Retirement and Financial insecurity	2	
	17	Physical problems- Cataract, Arthritis, Menopause in women, etc.	2	
	18	Cognitive problems – Dementia, Alzheimer's, Parkinson's disease, etc.	2	
	19	Psychosocial problems – depression, Empty nest syndrome	1	
	20	Role of families-strong relationships, friendships	1	
	21	Responsibilities of society- old age homes and Pakalveedu, counselling	2	
	22	Government policies and programmes for elderly & palliative care	3	
V	Related experience		12	
	1	Preparation of an album on developmental transitions, individual and family life transitions during adult life.		
	2	Visit to old age home or specialized living arrangements for elderly.		
	3	Visit to leisure facilities for elderly like laughing clubs, recreational clubs		
	4	Visiting your parents' workplace to understand their roles and responsibilities.		
	5	Documenting your mother's and grandmother's life aspirations and experiences before and after marriage		
	6	Discussing intergenerational relationships of emerging/young adults and parents as portrayed in cinema, advertisements and social media		
	7	Preparing a list of specialized services for the elderly in the city and / or preparing an elderly support kit (support with amenities, important phone numbers, medicines, reminders etc.)		

	8	Planning a hands-on workshop session for teaching internet and smart phone use to elderly		
	9	Interviewing elderly couples about their relationship, life challenges and satisfactions		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	1	-	-	-	-	1	-	-	-	-	-	-
CO 2	2	3	-	-	-	-	-	-	-	-	-	2	2
CO 3	-	-	1	-	-	-	-	1	-	-	-	-	-
CO 4	-	-	-	-	-	-	1	1	-	-	-	2	-
CO 5	1	1	-	1	-	-	-	1	-	-	-	2	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References

1. Arnett, J. J., & Jensen, L. A. (2019). Human Development: A cultural approach (3rded.). New York: Pearson.
2. Cavanaugh, J., & Blanchard-Fields, F. (2011). Adult development and aging (7thed). Stamford, CT: Cengage Learning.
3. Kakar, S. (Ed.). (1993). Identity and adulthood. New Delhi: Oxford University Press.
4. Lamb, S. E. (Ed.). (2012). Aging and the Indian diaspora: Cosmopolitan families in India and abroad. New Delhi: Orient Blackswan.
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8. Sahoo, F. M. (Ed.). (2009). Behavioral issues in ageing: Care, concern and commitment. New Delhi: Concept Publishers.
9. Sahu, C. (1988). Problems of aging among Indian tribes. New Delhi: Sarup&Sons.
10. Shankardass, M.K. (Ed.). (2020). Ageing issues and responses in India. New Delhi: Springer.
11. Soneja, S. (2001). Elder abuse in India. Report for the World Health Organization.
12. Srivastava, V. (2010) Women and ageing. New Delhi: Rawat Publisher.
13. Tanner, D., & Harris, J (2007). Working with the older people. New York: Routledge publishers.

Programme	B. Sc. Family and Community Science				
Course Title	SUSTAINABLE RESOURCES				
Type of Course	Elective III				
Semester	VI				
Academic Level	300- 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics in Resource management				
Course Summary	The Course enable the students with knowledge, skills, and values that are essential for creating a more sustainable and resilient future. students gain a comprehensive understanding of natural resources, including renewable and non-renewable sources. This knowledge extends to the interconnectedness of ecosystems, promoting a holistic perspective on environmental systems. The course equips students with critical thinking and problem-solving skills. Students become environmentally conscious and develop a sense of responsibility towards the planet. This mindset encourages sustainable practices in their personal and professional lives, contributing to the global effort to protect natural resources.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Facilitate students to identify various community resources and their efficient management	U	C	Instructor-created exams / Quiz
CO2	Inculcate eco concerns in students and will empower the divinity in students to think and act theologically as well as ethically about environmental issues	E	P	Practical Assignment / Observation of Practical Skills
CO3	Realize environmental/ecological impact of over exploitation of resources	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Help the students to recognize various aspects of energy, water and waste management	U	C	Instructor-created exams / Home Assignments
CO5	Students can pursue careers in renewable energy, environmental consulting, conservation, and policy development, contributing to both economic growth and environmental	Ap	P	One Minute Reflection Writing assignments

	sustainability.			
CO6	Fosters a sense of global citizenship where students recognize the interconnectedness of environmental issues across borders and appreciate the importance of international collaboration in addressing global challenges.	Ap	P	Viva Voce
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Environment & Natural Resources: Issues and Concerns		12	14
	1	Natural Resources: Land, Water, Soil, and Air – Crisis and its Impact on human beings, interrelationship between population and development	2	
	2	Environmental pollution : causes and effects – types of pollution and their global, regional and local aspects, air, water, land/soil pollution,	2	
	3	Noise pollution – source, measurement, effects and control	1	
	4	Global warming, acid rain and ozone layer depletion.	1	
	5	Environmental Protection Measures: Environmental protection laws and action	2	
	6	Environment management through conservation of resources, green practices pertaining to environmental issues	2	
	7	Life style changes for creating sustainable environment	1	
	8	Social responsibility towards sustainable development and social movements for better environment.	1	
II	Energy management		10	43
	9	Sources and classification of energy, patterns of energy use in the past, present and in the projected future, environmental/ecological impact of their over exploitation	2	
	10	Energy crisis meaning, need for combating energy crisis, measures at micro level, energy and climatic issues. Alternate energy sources, their potentialities and environment impacts of their use,	2	
	11	Solar energy – Significance and techniques of harnessing - solar devices and its working, advantages and limitations.	2	
	12	Wind energy wind mill – working applications – advantages and limitations.	2	
	13	Energy from biomass – characteristics, Biogas plants, Smokeless chulah/ improved chulah;	1	
	14	Energy conservation – need, ways, end-use energy conservation	1	
III	Water Management		13	31
	15	Water related problems – quantitative, qualitative, Water quality and standards - Home scale, small scale and large scale purification	2	

		techniques.		
	16	Ways of augmenting water resources, rain water harvesting – need and techniques, irrigation – drip and sprinkler methods; Sources of pollution of surface and ground water	4	
	17	Water pollution parameters – physical, chemical and biological;	3	
	18	Types of water pollutants;	1	
	19	Effects of water pollution on water bodies - eutrophication, impact of water pollution on aquatic life, vegetation and human health; control measures	3	
IV	Waste Management		13	10
	20	Classification and characteristics of waste, the need of a good waste management programme	3	
	21	Different methods of solid waste disposal – dumping, composting / vermin-composting, incineration, hazardous waste management; Sources and classification, Storage and collection of hazardous wastes, Radioactive wastes sources and types – control measures; Electronic waste (e-waste): Sources and types, constituents of e-wastes, recycling of e-waste and its environmental consequences, Management of e-wastes, Basel convention.	6	
	22	Sewage/ waste water, methods of treatment and disposal; Sanitary latrine – meaning, types and working; Sullage disposal – problems and solutions – soak pit, its construction and functioning.	4	
V	Open ended Module		12	
		Visit/field trip to any renewable energy centre		
		Conduct awareness class on environmental pollution/ attending seminars in the related areas.		
		Sustainable development/Developing articles through Recycling/Upcycling		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	1	2	2	2	-	2	2	2	2	1	1	2
CO 2	1	1	2	2	-	-	2	2	2	2	-	1	2
CO 3	2	2	3	3	-	-	2	2	2	2	2	2	2
CO 4	1	2	2	3	2	-	2	2	3	1	1	1	3
CO 5	1	2	3	2	2	-	2	1	2	2	2	1	2
CO 6	2	1	2	2	-	-	2	2	2	2	-	1	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion/Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References:

1. Asthana D. K & Asthana, M (2006) Environment Problems and Solutions, S. Chand & Company Ltd., New Delhi.
2. Misra, S P & Pandey, S N (2010) Essential Environmental Studies (2ndedn.), Anes Books Pvt. Ltd., New Delhi.
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6. Chauhan, D. S & Srivastava S.K (2010) Nonconventional Energy Resources, New Age International (P) Ltd, New Delhi.
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9. Rao, S & Parulekar, B.B. (2011) Energy Technology Nonconventional, Khanna Publishers, New Delhi.

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11. Tester, J.W, Drake, E.M, Driscoll, M.J, Golay, M.W and Peters, W.A (2009) Sustainable Energy: Choosing Among Options, PHI Learning Pvt. Ltd., New Delhi.

Tiwari, G.N (2010) Solar Energy Fundamentals Design, Narosa Publishing House, New Delhi.

Programme	B. Sc. Family and Community Science				
Course Title	WOMEN STUDIES				
Type of Course	Elective III				
Semester	VI				
Academic Level	300 – 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics in extension education				
Course Summary	The course deals with women related issues on empowerment, feminism and achievements.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Demonstrate an awareness of how the intersectional effects of sex, gender, race, class, sexuality, age, ethnicity, ability, and other complex aspects of identity influence social structures and women's empowerment.	U	C	Instructor-created exams / Quiz
CO2	Analyze the diversity of gendered experiences and apply feminist approaches to understanding social structures and cultural pressures related to gender inequality.	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Assess how women's opportunities and achievements are constrained by systems of oppression and privilege.	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Demonstrate a working knowledge of feminism and the field of Women and Gender Studies.	U	C	Instructor-created exams / Home Assignments
CO5	Recognize, critically analyze, and choose paths of action for social	Ap	P	One Minute Reflection Writing

	change.			assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Women studies		15	43
	1	Introduction, objective and definition	1	
	2	Key gender concepts and definitions	1	
	3	Status of women – historical and contemporary perspectives	2	
	4	Rationale for women’s studies and its growth	2	
	5	Women studies in Indian universities	1	
	6	4 Aspect of empowerment – Assets, knowledge, will and capacity	2	
	7	Introduction to women’s studies/ gender studies as a discipline	2	
	8	History of women’s studies	2	
	9	Gender sensitization or gender sensitivity	1	
	10	Importance of gender analysis in framing policies and programs	1	
II	Women empowerment, concept, and meaning		10	12
	11	Women empowerment introduction	3	
	12	Women and gender	2	
	13	Concept of empowerment	3	
	14	Components of empowerment	2	
III	Growth and role of women’s development organizations in India		10	12
	15	National Women’s Organization	2	
	16	The Women’s India Association [WIA]	3	
	17	The National Council of Women in India [NCWI]	3	
	18	All India Women’s Conference [AIWC]	2	
IV	Women entrepreneurship		15	31
	19	Introduction, characteristics of women entrepreneur	3	
	20	Characteristics and functions of women entrepreneurship	4	
	21	Role of women entrepreneur associations	4	
	22	Problems faced by the women entrepreneurs	4	
V	Related Experience		12	
	1	Explore issues related to women in news		
	2	Think with leading thinkers on feminism		
	3	Watch documentaries and critically analyse- report		
	4	Explore comparison studies		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	1	-	-	-	-	1	-	-	-	-	-	-

CO 2	1	1	-	-	-	-	-	1	-	-	-	1	-
CO 3	-	-	-	-	-	-	1	-	-	-	-	-	-
CO 4	-	-	1	-	-	-	1	-	-	-	-	-	-
CO 5	1	1	1	-	-	-	-	-	2	-	-	1	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References

1. Anne Minas (ed.), Gender Basics: Feminist Perspectives on Women and Men (2nd Edition), Wadsworth, 2000.
2. Gerda Lerner, Creation of Patriarchy, New York, Oxford University Press, 1986.
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7. Veena Poonacha, Understanding Women's Studies, research Centre for Women's Studies, SNDT Women's University, Mumbai, 1999.

ELECTIVE IV
SEMESTER VI

Programme	B.Sc. Family and Community Science				
Course Title	NUTRITION COUNSELLING AND EDUCATION				
Type of Course	Elective IV				
Semester	VI				
Academic Level	300- 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics in Nutrition Science				
Course Summary	The course focusses on the nutrition care process and the role of a dietician in developing the skill in nutrition counselling.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understanding the importance of nutrition care process and the various types of nutrition counselling.	U	C	Instructor-created exams / Quiz
CO2	Analyze the role of dietitian in the hospital and community and the responsibilities and their outreach services.	An	C	Practical Assignment / Observation of Practical Skills
CO3	Assess the counseling theories and approaches to counseling, correlating relevant information and identifying qualities of a good counsellor.	An	P	Seminar Presentation / Group Tutorial Work
CO4	Evaluate the importance of nutrition education in the community and the various methods for effective communication.	E	C	Instructor-created exams / Home Assignments
CO5	Facilitating the suitable strategies to overcome the nutritional problems in the community through counselling process.	C	P	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Nutrition Counseling		20	43
	1	Nutrition Counseling/ Nutrition Care Process (NCP) – Definition, importance, purposes and ethical principles	2	
	2	Steps in counseling Process; Documentation – SOAP	3	
	3	Counseling Skills for a Dietitian; Tools of Dietitian; Guidelines for effective Counseling	3	
	4	Types- Crisis, facilitative, preventive	2	
	Role of Dietitians in the Hospital and Community			
	5	Professional qualification and personal attributes	3	
	6	Types of dieticians, Professional ethics, responsibilities	3	
	7	Dietitian as part of the Medical Team and Outreach Services	2	
	8	Indian dietetic association- origin, objectives, membership, chapters, registration	2	
II	Counseling Approaches		10	31
	9	Counselling Approaches – Meaning, Developing a counselling approach	3	
	10	Different Counselling Approaches – Psychoanalytical, behavioural, humanistic, Patient centered GALIDRAA approaches etc.	2	
	11	Counselling strategies - Individual and Group counselling.	3	
	12	Qualities of an effective counselling	2	
III	Nutrition Education		8	12
	13	Nutrition Education – Meaning and importance of nutrition education to the community	2	
	14	Principles of planning, executing and evaluation of nutrition education programme.	2	
	15	Teaching Methods and aids used for Nutrition Education in the Community-Teaching Methods – Lecture, Group discussion, Role Play, Storytelling, Demonstrations, Nutrition Exhibition, Marathon race etc.	2	
	16	Teaching Aids – Posters, pictures, models, charts, flash cards etc.	1	
	17	Teaching Materials for patients – Models, pamphlets, leaflets, booklets etc.	1	
IV	Nutrition Counselling For Different Age Group And Lifestyle Diseases		10	12
	18	Children and Adolescents	2	
	19	Pregnancy and Lactation, Old Age	2	
	20	Cancer, HIV/AIDS	2	
	21	Diabetes and Coronary Heart Diseases	2	
	22	Osteoporosis	2	
	V	Related Experience		12
23		Setting of nutritional counselling centre		
24		Practice counselling with a doctor/fitness firm/diet care centres		
25		Interview nutritionists to know on challenges and successes		

	26	Visit to dietary departments- hospitals/diet centres		
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Mapping of COs with PSOs and POs :

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	1	-	-	-	1	1	1	-	-	-	-	-
CO 2	-	1	2	2	-	1	-	-	2	-	-	1	-
CO 3	1	-	3	-	-	1	1	-	1	-	-	-	-
CO 4	-	1	-	1	-	-	-	-	-	1	-	-	-
CO 5	1	-	2	1	-	1	-	-	-	1	1	2	1

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References

1. Currie, Joe, Barefoot counselling: A premier in building helping relationships. Asian Trading Cooperation, Bangalore. 1976.
2. Bhatia, K.K., Principles of guidance and counselling, Kalyani Publishers, Ludhiana. 2002.
3. Nelson – Jones, Richard, Practical counselling and helping skills, Better Yourself Books, Bombay. 1994.

4. Narayan Rao. S., Counselling, Tata McGrawHillBartlet, Hariot.M, Social work practice in Health Field: National Association of Social Work, New Delhi.
5. Banarjee G.R.: Social Service Department in a Hospital, TISS, Bombay.
6. Bowel A.H. and Gardner L. : The Young Handicapped Child: Edinburgh, E and S Livingston Ltd Cooperation, Bangalore. 1976.
7. May, Rollo, Art of counselling: A practical guide with case studies and demonstrations. Abingdon Press, New York. 1967
8. Prashantham B.J., Indian case studies in therapeutic counselling, Christian Counselling Centre, Vellore. 1978
9. Bhatia, K.K., Principles of guidance and counselling, Kalyani Publishers, Ludhiana. 2002.
10. Narayan Rao. S., Counselling and Guidance, McGrawHill Education Publishing Company Ltd, New York 1981

Programme	BSc. Family and Community Science				
Course Title	GUIDANCE AND COUNSELLING				
Type of Course	Elective IV				
Semester	VI				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics in Human development				
Course Summary	The course imparts skill in techniques of counselling appropriate in various sectors and provides knowledge on the tools and importance of guidance.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the principles and fundamentals of guidance and counselling.	U	C	Instructor-created exams / Quiz
CO2	Acquire knowledge on different theoretical models of counselling.	U	C	Instructor-created exams / Quiz
CO3	Evaluate different types of approaches in counselling.	E	C	Seminar Presentation / Group Tutorial Work
CO4	Skill in counselling methods that can be applied in different settings like schools, family, career	Ap	P	Practical Assignment / Observation of Practical Skills
CO5	Use and apply the tools of counselling	Ap	P	Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Status of guidance and counselling		10	12
	1	Counselling - Definition, objective	1	
	2	Inception of counselling	2	
	3	Guidance - introduction, movement in India	2	
	4	Scope and principles of guidance	2	
	5	Mental Health-	3	
II	Counselling its importance, components		15	43

	5	Process of counselling	2	
	6	Influencing factors of counselling	2	
	7	Qualities of an effective counsellor	1	
	8	Counselling setup	2	
	9	Tools-Psychological tests - meaning, need, limitations. Testing - Intelligence, Aptitude, Attitude, Achievement, Interest, Personality,	4	
	10	Techniques- Interview, cumulative, diary, case study, questionnaire	4	
III	Types of counselling		15	31
	11	Individual counselling and group counselling – definition, goals, characteristics, importance	3	
	12	Group counselling theoretical considerations	3	
	13	Values or principles of group counselling	3	
	14	Selection of group members	2	
	15	Difference between individual and group counselling	2	
	16	Advantages and disadvantages of individual and group counselling	2	
IV	Skills of counselling		10	12
	17	Concept of counselling	1	
	18	Basic child counselling skill-Attending skills, listening skill, basic empathy, questioning skill	2	
	19	Understand the responsibilities of professional counsellor	2	
	20	Personal moral qualities of professional counsellor	2	
	21	Nature of ethics - Ethical standard	2	
	22	Ethical issues of a professional counsellor	1	
V	Related Experience		12	
	23	To do a Job Analysis and prepare a report thereon.		
	24	To visit a guidance Centre and write a report thereon.		
	25	To do a Case Study of a differently - abled student and prepare a report.		
	26	To familiarize with the administration of a standardized intelligence test, an attitudinal scale and an achievement test.		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	-	-	-	-	-	1	-	-	-	-	-	-
CO 2	1	-	1	-	-	-	2	-	-	-	-	-	-
CO 3	-	-	1	-	-	-	-	1	2	-	-	1	-
CO 4	-	-	2	3	-	-	-	1	3	-	1	1	2
CO 5	-	-	1	-	-	-	-	1	1	-	1	1	1

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References

1. Dave, L (1991) The Basic Essentials of Counselling, Sterling Publishers Pvt ltd
2. Rao, N S, and Sahajpal, P (2013) Counselling and Guidance, New Delhi,Tata McGraw Hill.
3. Shankar, L (1993) Guidance: Educational, Vocational, Personal and Social, Enkay Pub Ltd
4. Singh . R. (1994) Educational and Vocational Guidance, Common Wealth Pub, New Delhi Trower, P, Jon
5. Soundararajan, R (2012) Counseling: Theory, Skills and Practice. New Delhi,Tata McGraw Hill.

Programme	B. Sc. Family and Community Science				
Course Title	ERGONOMICS				
Type of Course	Elective IV				
Semester	VI				
Academic Level	300 – 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics in Resource management				
Course Summary	The course imparts knowledge on the importance of ergonomics in man and machine interactions for conservation of energy and maximising output.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the relation between human antropometry and work environment	U	C	Instructor-created exams / Quiz
CO2	Analyse equipments, tools for better efficiency in work	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Demonstrate problem solving skill in machine and man environment	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Research ways to contribute to solutions to work constraints in relation to machines that foster environmental development	U	C	Instructor-created exams / Home Assignments
CO5	Promote sustainability in using green protocol and technology	Ap	P	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Introduction to Ergonomics		10	12
	1	Importance, Principles, Components, Scope of Ergonomics in modern society and impact of ergonomics on work place designing,	2	
	2	Man-Machine ñ Environment System interaction.	1	
	3	Fundamentals of work physiology, Structure and function of the muscles,	2	

	4	Biochemistry of muscle work, Physiological factors involved in muscular work.	2	
	5	Sources of energy for muscular work, Static and dynamic muscular effort, Energy requirement for muscular work and efficiency.	2	
	6	Energy expenditure for various activities, Endurance and muscular strength.	1	
II	Work load, fatigue and Wrong postures and its ill effects		10	31
	7	Identification and analysis of postures - Sitting, standing, reaching, moving, Static and Dynamic work, Body mechanics.	2	
	8	Effect of wrong postures on cardiovascular and muscular skeletal system	2	
	9	Classification of Fatigue, Factors influencing fatigue, Causative factors and alleviating techniques,	2	
	10	work simplification - meaning and techniques, Mundell's classes of changes, Work curve, Work, Rest Cycle.	2	
III	11	Work related MSD- cause and prevention, Correct techniques of lifting and carrying weights, Technique such as OWAS, RULA, REBA etc.	2	
	Application of Anthropometry, Influence of Environmental Parameters		15	43
	12	Definition, scope, Human body as system of levers, Anthropometric measurements, percentile humans, anthropometric data base	3	
	13	Accessible Work Areas, Nutrition and physical fitness, Job- Demand-Fitness Compatibility, Physiological cost of Household activities,	3	
	14	Acceptable workload (AWL). Principles of motion economy	3	
	15	Effect of Illumination/Lighting on environment, Thermal comfort and its impact on work efficiency, Effect of air pollution,	3	
	16	Effect of Noise on Environment, effect of music on productivity and well- being. Vibrations and its effect on body parts during work with body parts, Psycho-social environment	3	
IV	Design consideration for work station/tools/ equipment		8	12
	17	Ergonomic factors considered while designing workplace/kitchen/ office/ specialized areas,	2	
	18	common workplace motion, work triangle, physical space arrangements	2	
	19	Hazards of ill designed work station,	1	
	20	Ergonomic consideration for the physically challenged workers with disabilities.	1	
	21	Design consideration for tools/equipment in various work stations,	1	
	22	Quality Control and Standardization for equipment	1	
V	Related experience		12	
	Anthropometric measurements: Recording static and dynamic anthropometric data for different ergonomic design consideration			
	<ol style="list-style-type: none"> 1. Standing measurements 2. Sitting measurements 3. Measurement of head 4. Measurement of diameter 5. Measurement of girth 6. Measurement of hand 7. Measurement of foot 			

		<p>8. statistical analysis of the data and interpretation of findings</p> <p>Determining the relationship of anthropometric dimensions of workers with space requirements for some selected activities</p> <p>Assignments/Journal Work:</p> <ol style="list-style-type: none"> Analyzing the recorded static and dynamic Anthropometric measurements for different design considerations such as - design of seat, work station, consumer products, Personal Protective Equipment, hand-tools, etc. Group Assignment on product design. Field study in industrial establishments and other work stations to study man –machine interactions 		
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Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	1	-	-	-	-	3	-	-	-	-	-	-
CO 2	2	3	-	2	-	-	-	-	-	-	1	-	-
CO 3	-	2	1	-	-	-	-	-	-	-	3	-	1
CO 4	-	-	2	3	-	-	-	1	1	-	2	2	3
CO 5	1	1	-	1	3	-	-	-	1	-	3	1	1

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar

- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References

1. Anshel, J. (1968). Visual Ergonomics in the Workplace. Taylor and Francis, London
2. Astrand, P. O. and Rodahi, K. (1986): Textbook Of Work Physiology, McGraw Hill, New York
3. Chaffin, D. B. and Anderson G. B. (1984): Occupational Biomechanics, John Wiley, and Sons.
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14. Jordan, P. W. (2001): Pleasure with Products, Taylor and Francis, London

15. Kanawaty, George (1994): Introduction to work study, 4th revised edition. Navneet Prakashan Ltd. Bombay

Programme	B.Sc. Family and Community Science				
Course Title	ENTREPRENEURSHIP MANAGEMENT				
Type of Course	Elective IV				
Semester	VI				
Academic Level	300-399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics of Marketing				
Course Summary	This course help the students to develop entrepreneurship skills, business strategy and leverages the unique aspects of the business, position in the market.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the concept of entrepreneurship	U	C	Instructor-created exams / Quiz
CO2	Identify the entrepreneurial agencies and awareness on incentives to women	An	C	Instructor-created exams / Quiz
CO3	Familiarize the learner with procedures and opportunities to start an enterprise	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Understand the financial supporting sectors for starting new business	U	C	Instructor-created exams / Home Assignments
CO5	Encourage learner to become successful entrepreneur	Ap	P	One Minute Reflection Writing assignments

* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)
- Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P)
Metacognitive Knowledge (M)

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Concept and Emergence of Entrepreneurship		10	12
	1	Entrepreneurship: meaning, definition, scope, characteristics	2	
	2	Factors affecting entrepreneurial development	2	
	3	Entrepreneur vs Intrapreneur	2	
	4	Classification of entrepreneur	2	
	5	Growth of entrepreneurs in India	2	

II	Women Entrepreneurs and EDP		15	31
	6	Women Entrepreneurs - definition, present status in India	2	
	7	Steps taken for the promotion of women entrepreneurs	3	
	8	Problems faced by women entrepreneurs	2	
	9	EDP - definition, need and objectives	2	
	10	Stages of EDP	2	
	11	Agencies conducting EDP	2	
	12	Role of government in organizing EDP	2	
III	Business Plan		15	43
	13	Business planning – starting a new venture related to apparel industry	2	
	14	Formalities involved in starting up of a firm	3	
	15	Ownership details - individual proprietor / partnership / PVT. Limited company and public Ltd Company	4	
	16	Bank formalities, term loan, working capital	3	
	17	Project financing	3	
IV	Layout Planning and Agencies for Entrepreneurial Support		8	12
	18	Location and plant layout – factors influencing plant location	1	
	19	Building structure, lighting, ventilation, material handling	1	
	20	Availability of labour, material management and transportation	2	
	21	Plant layout, ergonomics safety and security to be considered while planning the layout	2	
	22	Agencies for entrepreneurial support - KITCO, SIDCO, KVIC, DIC, STED, SIDO, NSIC, TCO, SISI, SIDBI	2	
V	Open Ended Module:		12	
	23	Group work- interview women entrepreneurs and prepare a report on their challenges		
	24	Prepare a project proposal		
	25	Organise my story- inspirations		
	26	Workshop on EDP		

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	1	2	-	-	-	2	-	-	-	-	-	1
CO 2	1	-	1	-	-	-	1	-	-	-	-	-	1
CO 3	-	-	2	2	-	-	1	-	2	-	1		2

CO 4	-	-	1	-	-	-	-	-	-	-	-	-	1
CO 5	-	-	3	2	-	-	-	-	2	-	-	-	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCES

1. Desai, N. Entrepreneurial development- Principles, programmes, Policies (Vol.1) Formulation Appraisal and Financing (VOL.II) and Programmes and Performance (VOL III) Himalaya Publishing House, Bombay, 1996
2. Vinod A, Entrepreneurship Management
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4. Jose Paul, Entrepreneurship Development
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SKILL ENHANCEMENT COURSES
SEMESTER VI

Programme	B. Sc. Family and Community Science				
Course Title	Landscaping and Nursery Management				
Type of Course	SEC III				
Semester	VI				
Academic Level	300 – 399				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	3	3	-	-	45
Pre-requisites	Basics in design				
Course Summary	The Course develops among the students the core principles, types and components of landscape gardens. It provides experiential learning by upgrading their skills in designing various residential and commercial landscape plans. It can further motivate them to develop and maintain indoor garden.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Gain knowledge on landscape architecture and its design principles	U	C	Instructor-created exams / Quiz
CO2	Identify different types of garden	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Understand and apply botany and horticulture principles to landscape design	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Cultivate knowledge of soils	U	C	Instructor-created exams / Home Assignments
CO5	Skill to artistically maintain the ecological balance.	Ap	P	One Minute Reflection Writing assignments
CO6	Evaluate the conditions suitable for plant growth and choose most suitable environment	Ap	P	Viva Voce
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks	
I	Principles of Landscaping		10	22	
	1	Meaning and importance of landscaping: Introduction to Landscape Architecture	2		
	2	Landscape Elements principles of landscape gardening, components of landscape design	3		
	3	Principles of external space organization.	2		
	4	Styles in landscape gardening - layout of formal, informal and small, medium, large gardens	2		
	5	Importance of biophilic interiors	1		
II	Ornamental Gardening & Garden components		15	26	
	6	Ornamental plants : Herbs – annuals and biennials, flower beds, ground covers; Shrubs – flowering and foliage, climbers, creepers, perennials – bulbs, tubers, ferns, succulents, cacti, ornamental grass, bamboo and palm	4		
	7	Garden components : Garden pavements, borders, hedges/edges, topiary pergolas, and garden adornments	4		
	8	Arboriculture, importance and value of trees, selection, planting, maintenance and care, role of trees in garden	2		
	9	Lawns: Importance of lawn, methods of lawn making	2		
	10	Maintenance and care, type of lawn grasses.			
	11	Indoor gardening – Identification and selection of indoor plants,	4		
	12	Care and maintenance of indoor plants, display and placement;			
	13	Bonsai – styles, identification of suitable plants, containers, techniques - pruning, nipping and wiring;	3		
	III	Types of gardens		7	10
		14	Terrarium/ bottle garden/ dish garden	1	
		15	Roof top/Terrace gardening – Designing, selection of plants,	2	
		16	Vertical garden – its suitability in urban area	1	
17		Kitchen gardening - Design, types of vegetables grown;	2		
18		Water garden and rockery	1		
IV	Nursery Management		8	12	
	19	Soil preparation, Garden tools and implements	2		
	20	Plant Propagation - Seed propagation, vegetative propagation/asexual propagation – layering, cutting, grafting, budding; Micro propagation/ tissue culture	2		
	21	Routine duties in a garden; Watering, potting - repotting techniques, Pruning, disbudding, defoliation, staking and mulching.	2		
	22	Plant Nursery, site selection, Nursery infrastructure, Inventory management, Marketing & sale	2		
V	Open ended- Module		5		
		Group work- kitchen garden in the campus/home			
		Assignment-Make any miniature form of garden			
		Visit to different types of garden			
		Interview- landscape designers/gardeners			

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	1	2	2	2	-	2	2	2	2	1	1	2
CO 2	1	1	2	2	-	-	2	2	2	2	-	1	2
CO 3	2	2	3	3	-	-	2	2	2	2	2	2	2
CO 4	2	2	2	3	2	-	2	2	3	1	1	1	3
CO 5	1	2	3	2	2	-	2	1	2	2	2	1	2
CO 6	2	1	2	2	-	-	2	2	2	2	-	1	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References

1. Ashraf, A. M. (2010). A Handbook of Landscape Gardening and Environment. India: Agrobios
2. Bose et al., (2011). Floriculture and Landscaping. Calcutta: Allied Publishers
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SEMESTER VII

Programme	B. Sc. Family and Community Science				
Course Title	Textile Chemistry				
Type of Course	Major				
Semester	VII				
Academic Level	400-499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basics in Textile Science				
Course Summary	Enhanced learning process makes individual apply science and technology into material and textile products. The course provides a chance to gain knowledge of various types of fibers and products related to textile industry. The course prepares students to artistically modify the raw materials for manufacturer and industry usage.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Estimate different types of chemicals used in textile wet processing	U	C	Instructor-created exams / Quiz
CO2	Identify various machinery used for printing & finishing of fabrics which would help them in working in dyeing/printing industry	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Understand color theories, different measures of color and specifications	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Understand the coloration of synthetic/ natural fibers	U	C	Instructor-created exams / Home Assignments
CO5	Recommend eco-friendly practices in textile processing	Ap	P	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Module	Unit	Content	Hrs	Marks
I	POLYMER CHEMISTRY		12	20
	1	Definition of Polymers, its types, degree	3	
	2	Methods of polymerisation, polymerisation process	3	
	3	Molecular weights of polymers and its determination.	3	
	4	Orientation and crystallinity of fiber molecules; their influence on the fibre properties	3	
II	DYES		12	25
	5	History of dyestuffs, light, color, dyestuffs, Structure & Use wise classification of dyes	3	
	6	Color – Beer’s law and Lambert’s law, colour mixing system, colour order system, CIE color specification, Instruments for the measurement of color, Kubelka-Munk Theory	3	
	7	Relation between K-S & concentration of colourant, understanding Color difference, Hue, Chroma, etc.	3	
	8	Understanding the use of Color Index Standards, dye shade cards and pantone colour coding. Commercial dyes. Introduction on Banned dyes	3	
III	AUXILIARIES: (DYEING & PRINTING)		13	30
	9	Chemical composition and properties of wetting agent, softeners (anionic, cationic and non-ionic)	2	
	10	Detergents, levelling agents, carriers, bleaching agents, thickeners, binders, eco-friendly chemicals.	2	
	11	Brief introduction to Preparatory Processes - Singeing, Desizing, Scouring, Bleaching and Mercerization.	2	
	12	Dyeing – Principles of Dyeing	2	
	13	Mechanism of dyes like – like direct, reactive, vat, azoic, sulphur, basic, acid, disperse and natural dyes.	2	
	14	Printing – Principles of printing, printing using dyes and pigments on - (silk, cotton, Polyester, & blends)	2	
	15	Fixation of prints using various methods	1	
	16	Innovative Printing methods.	1	
	17	Introduction to Post Treatment of dyed, printed and finished fabrics. (Soaping, rinsing, washing and fixation).	1	
IV	TEXTILES AND ENVIRONMENT		8	23
	18	Impacts due to processing	2	
	19	Alternatives used in processing	2	
	20	Ecolabels and Ecofriendly practices	2	
	21	Sanitizing dye stuff	1	
	22	German Ban	1	
V	Practicals		30	
		1. Qualitative analysis – Identification of fibers – cotton, polyester, viscose, polyamide, polyester, silk, wool, jute. Use of burning, microscopic, chemical tests. 2. Desizing, scouring and bleaching of grey fabric using chemical and eco-friendly agents		

		3. Dyeing of cotton with direct dye, vat dye, reactive dye 4. Dyeing of wool and silk with acid dye 5. Dyeing of nylon with acid/metal complex dye, 6. Use of natural dyes and mordants (Synthetic & natural) to dye cotton and silk		
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Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO 6	PO 7
CO 1	1	-	-	-	-	-	-	-	-	1	-	-	-
CO 2	2	3	-	-	-	-	3	-	-	-	-	-	-
CO 3	-	-	1	-	-	-	-	-	2	-	-	-	-
CO 4	-	-	2	3	-	-	-	-	-	-	-	1	1
CO 5	-	1	-	-	-	-	-	-	-	2	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCES

1. Technology of Textile Processing - Shenai, V.A. (1984), Vol.- IX, Sevak Publication

2. Hand Book of Textile Fibers - Cook, J. Gordon, Merrow Publishing Co. Ltd, England
3. Manmade Fibers - Moncrief: R.W, John Wiley & Sons New York.
4. Dyeing and Chemical technology of Textile Fibers - Trotman, E.R. (1975), Charles Griffino Company Ltd, London.
5. An Introduction to Textile Finishing - Marsh, J.T. (1979), B. I. Publications.
6. Chemicals after Treatment of Textiles - Mark H., Wooding N.S. & Atlas Smeeds, (1970), John Wiley & Sons Inc., NY.
7. Handbook of fiber Science and Technology, Vol. II, Chemical Process of Fibres and Fabrics, Functional Finishes Part A - Lewin, M. and Selio, Stephen B. (1983) Marcel Deker, Inc, NY and Basel.
8. Introduction to the Chemistry of Dyestuffs-Shenai, V. A (1991):, Sevak Prakashan
9. Natural Dyes and their Application to Textiles, Gulrajani M.L. and Gupta, D. (1982), IIT Delhi.
10. Natural dyeing process of India-Mohanty, Chandramouli, Naik, (1987), Ahmedabad, Calico Museum of Textiles.
11. India Horti business on line. <http://www.agroindia.org/1HOL>
12. Technology of Finishing-Shenai, V.A. and Saraf, N.M. (1990),Vol. X.II Edition
13. Fundamental Principles of Textile Processing-Shenai.V.A (1984); Vol. IX, I Edition, Sevak Pub
14. Evaluation of Textile Chemicals-Shenai, V.A and Mehra, R.H. (1984); Vol.VIII, Sevak Pub
15. Technology of Dyeing-Shenai, V.A. (1988); Vol. VI, Sevak Pub
16. Technology of Dyeing-Shenai, V.A. (1984) Vol.I, Edition III, Sevak Pub.
17. Chemistry of Dyes & Principles of Dyes-Shenai, V.A (1987); Vol.III, Edition III, Sevak Pub
18. Textile Fibers-Shenai, V.A (1990); Vol. I, Edition III, Sevak Pub
19. Chemistry of Organic Textile Chemicals-Shenai, V.A and Saraf, N.M., Sevak Pub
20. History of Textile Design-Shenai, V.A. (1988), Sevak Pub

Programme	B.Sc. Family and Community Science				
Course Title	CLINICAL AND THERAPEUTIC NUTRITION				
Type of Course	Major				
Semester	VII				
Academic Level	400-499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Course in Nutrition science, Nutrition Through Life cycle and Dietetics				
Course Summary	The course equips the students to plan diets, modify diets by analysing the diagnostic information of the disease condition and provide good nutrition care.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Discuss the nature and scope of Clinical and therapeutic nutrition and identify circumstances where diet may need modifications	U	C	Instructor-created exams / Quiz
CO2	Take part in supervised practical activities like diet plan that addresses a select client's disease that incorporate the client's cultural preferences.	Ap	P	Observation of practical skills
CO3	Understand the physiology, metabolism and special requirements of critically ill patients.	U	F	Seminar Presentation / Group Tutorial Work
CO4	Explain different types of Food allergy and intolerance and provide information on diagnosis, clinical symptoms and appropriate dietary modifications	U	C	Instructor-created exams / Home Assignments
CO5	Develop professional ethics of dietitian in different situations	Ap	P	Writing assignments
CO6	Demonstrate sufficient problem – solving skills to assess multifactorial aspects of nutritional care and organize and prioritize necessary tasks within time constraints	Ap	P	Instructor-created exams / Home Assignments
CO7	Illustrate the effect of various metabolic disorders on nutritional status and its dietary adjustments.	E	C	Instructor-created exams / Home Assignments

* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)
 # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P)
 Metacognitive Knowledge (M)

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Role of dietitian in the hospital and community, routine hospital diets		10	12
	1	Dietitian- definition, scope, role, qualifications, professional ethics and obligations.	2	
	2	Nutritional care process- assessment, diagnosis, intervention, monitoring and evaluation	2	
	3	Regular diet, light diet, soft diet, full liquid diet, clear liquid diet and tube feeding.	2	
	4	Enteral and parenteral feeding –composition, monitoring and complications	2	
	5	Transitional feeding.	2	
II	Medical nutrition and Drug therapy for the following conditions		10	12
	6	Acute, chronic and recurrent fevers	2	
	7	Medical nutrition therapy Typhoid	2	
	8	Medical nutrition therapy in rheumatic fever	2	
	9	Definition, types, tests, dietary management and prevention of food allergy	2	
	10	Arthritis, Osteoporosis-dietary management	2	
III	Gastrointestinal disorders, liver, gall bladder and pancreas disorders and renal disorders		15	43
	11	Esophagitis, Ppetic ulcer, indigestion, gastritis, carcinoma of the stomach, bariatric surgery and dumping syndrome.	3	
	12	Diarrhoea, constipation, flatulence, celiac disease, steatorrhoea	2	
	13	Irritable bowel disease (IBD) – crohn’s disease, ulcerative colitis, diverticulitis and colon cancer.	3	
	14	Cirrhosis of liver, hepatitis, hepatic coma, cholecystitis,cholelithiasis and pancreatitis	3	
	15	Acute and chronic glomerulonephritis, nephrosis	2	
	16	Chronic disease condition and its stages	1	
	17	Dialysis and palliative care	1	
IV	Metabolic disorders, diet during metabolic stress and neurological disorders		13	31
	18	Hypothyroidism, hyperthyroidism,	3	
	19	gout, phenylketonuria and lactose intolerance	3	
	20	CV complications, GI tract (surgery and complications).	3	

	21	Burns, sepsis and trauma	2	
	22	Alzheimer's disease and epilepsy -dietary management and prevention.	2	
V	Open Ended Module:		30	
	1	Open-Ended Exploration and Assessment: dietary intervention and nutrient prescription- any 10 relevant diseases maintain practical record		

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	3	2	-	1	3	2	1	1	1	2	3
CO 2	2	3	3	2	-	3	3	2	1	1	1	2	3
CO 3	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 4	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 5	1	3	3	2	-	3	3	2	1	1	1	2	3
CO6	2	3	3	2	-	3	3	2	1	1	1	2	3
CO7	2	3	3	2	-	3	3	2	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCES:

1. Antia FP, Clinical Dietetics and Nutrition, Oxford University Press, New Delhi, 4th edition, 1997.
2. Davidson, Pasmore P and Break LP, Human Nutrition and Dietetics, English language book society, Livingstone, 1986.
3. Robinson, normal and Therapeutic Nutrition, Oxford & LBM Publishing, Calcutta, Bombay, 17th edition, 1990.
4. Garrow.JS & James W.P.T, Human Nutrition and Dietetics, Church Hill Living Stone, 1993.
5. Mahan.L.K and Stump SE, Krause's Food, Nutrition and Diet Therapy, WB Saunders Company, 10th edition, 2001.

Programme	B. Sc. Family and Community Science				
Course Title	Participatory Programme Management				
Type of Course	Major				
Semester	VII				
Academic Level	400- 499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basic course in Extension Education				
Course Summary	This Course is extended to equip the students with both specialized knowledge and practical skills in participatory project planning, monitoring and impact. Improving strategic thinking and decision making skills of students in planning, implementing and evaluating various programmes related to developmental sector is further envisaged.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand programme planning and related models	U	F	Instructor-created exams / Quiz
CO2	Identify the needs of the community and develop programmes	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Analyze techniques of implementing a programme	AP	P	Instructor-created exams / Home Assignments
CO4	Examine assessment of programmes and documentation	Ap	P	Seminar Presentation / Group Tutorial Work
CO5	Gain knowledge on project management techniques	AP	P	Viva Choice
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Concept of Extension Programme Planning		5	12
	1	Meaning, nature, scope and principle of programme	1	
	2	Elements, functions and criteria for developing a plan	2	

	3	planning Importance of planned change	1	
	4	Programme development cycle and its components	1	
II	Participatory Planning		15	43
	5	Importance of peoples' participation in programme planning	2	
	6	Formation of Self Help Groups.	2	
	7	Role of women in project planning and management	3	
	8	Principles, methods, tools and techniques of PRA and application of PRA methods in field studies.	4	
	9	Supportive techniques – secondary sources, direct observation, and semi structured interviews		
	10	case studies and stories, drama, games, role play,scenario, workshops, triangulation, continuous analysis and reporting	3	
	11	Presentation techniques – Ranking, scoring and diagrammatic	1	
III	Project Management Techniques		10	12
	12	Project management techniques, Strength, weakness, opportunity and challenges (SWOC)	2	
	13	Network analysis –critical path method (CPM), Programme (project) Management and Review Technique (PERT)	2	
	14	Technical and monitory support from Government and non-governmental organizations availability and access	2	
	15	Project management and evaluation and documentation	2	
	16	Training personnel in PRA techniques	2	
IV	Extension Evaluation, Follow up and Documentation		15	31
	17	Definition, nature, types, purpose and characteristics of evaluation	2	
	18	Phases, tools and techniques of evaluation, uses of evaluation	3	
	19	Need and methods of follow up	2	
	20	Analysis of existing extension programmes, prospects for improvement	2	
	21	Need for reporting and recording, Types of records Analysis and document preparation	3	
	22	Procedures for recording – records and registers to be maintained, Training personnel in PRA techniques, project management, evaluation and documentation.	3	
V	Open ended module- Practicals		30	
	1	Application of PRA methods in the real life situations		
	2	Critical review of evaluation studies on women and rural development programmes		
	3	Analysis of monitoring and evaluation of developmental programmes		
	4	Preparation and implementation of home improvement work plan		
	5	Evaluation of work plan using evaluation techniques		
	6	Organizing and evaluating programmes for women and children at village level.		

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	1	2	2	2	-	2	2	2	2	1	1	2
CO 2	2	1	2	2	-	-	2	2	2	2	-	1	2
CO 3	2	2	3	3	-	-	2	2	2	2	2	2	2
CO 4	2	2	2	3	3	-	2	2	3	1	1	1	3
CO 5	2	2	3	2	2	-	2	1	2	2	2	1	2
CO 6	2	1	2	2	-	-	2	2	2	2	-	1	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Discussion / Seminar
- Midterm Exam
- Final Exam (70%)

REFERENCES

1. Lock, Dennis, Handbook of project Management, Jaico Publishing House, Delhi, 1997
2. Mathew .T.K.: Project Planning, Formulation and Evaluation CBCI Centre, New Delhi.
3. Ghosh, A.S. Project Management. Anmol Publishers. New Delhi, 1990
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5. Vasant Desai, Project Management: Preparations, Appraisal, Finance and Policy, Himalaya Pub. House, Delhi, 1997.

Programme	B. Sc. Family and Community Science				
Course Title	BUILDING AND SERVICES				
Type of Course	Major				
Semester	VII				
Academic Level	400 -499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	1. Basics in Interior design				
Course Summary	Students gain hands-on experience in system design, installation, operation, and maintenance, learning to optimize performance while ensuring occupant safety and comfort.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	To understand the principles and processes related to water supply, drainage, waste water disposal, sanitary fittings, lighting, electrical layouts, acoustics, and damp/termite proofing in building services.	U	C	Instructor-created exams / Quiz
CO2	Develops the skills necessary to design and select appropriate systems and fixtures for water supply, drainage, sanitation, lighting, and electrical distribution, considering factors such as functionality, efficiency, safety, and aesthetics.	An,Ap	P	Practical Assignment / Observation of Practical Skills
CO3	To demonstrate awareness of safety considerations in the design and installation of building	Ap	C	Seminar Presentation / Group Tutorial Work

	services systems, including fire protection, electrical safety, and prevention of water-related hazards, ensuring the well-being of building occupants and the surrounding environment.			
CO4	Develop problem-solving and troubleshooting skills to identify, diagnose, and rectify issues related to water supply, drainage, lighting, electrical systems, acoustics, and damp/termite proofing in buildings.	An,Ap	C	Instructor-created exams / Home Assignments
CO5	To understand emerging technologies and trends in building services, such as smart building solutions, energy-efficient lighting fixtures, and advanced acoustic materials, and understand how to integrate these technologies into building design and operation.	U	P	Practical skills/Writing assignments
<p>* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)</p>				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Plumbing		10	43
	1	Water Supply: Collection sources, Systems of water supply (At Municipal level – Continuous system and intermittent system)(At Domestic Level – Direct supply system and indirect supply system)	2	
	2	Drainage: Process of drainage, Types of drainages.	1	
	3	Traps: Gully Traps, Intercepting traps, Grease traps, Silt traps.	1	

	4	Waste Water Disposal: Inspection chamber or manhole, Septic tank, Ventilation systems.	2	
	5	Sanitary Fittings: Wash basins, Water closets, Urinals, Shower Tray and Bath Tubs, bidets.	2	
	6	Bathroom Accessories: Towel rails, Toilet paper holders, Soap cases, Toothbrush holders, Miscellaneous accessories, Electronic hand dryer, Mirrors.	2	
II	Lighting		20	31
	7	Lighting factors: Brightness, Contrast, Glare, Diffuse, Color. Reflection: Specular reflection, Semi-specular reflection, Diffuse reflection.	3	
	8	Transmission: Direct transmission, Semi-diffuse transmission, Diffuse transmission	2	
	9	Light sources: Natural lighting (Sky component, External reflected component, Internal reflected component), Artificial Lighting (Incandescent lamps, Florescent lamps, High density lamps, Mercury lamps, Sodium vapor lamps, Metal halide lamps, Cold cathode lamps, Emergency lights)	4	
	10	Lighting design: Guidelines for lighting design, Types of lighting fixtures, Lighting accessories (Switches, Socket, Fuced connection units, Boxes, TV outlets, Lamp – holders, Ceiling roses).	4	
	11	Symbols: lamps, fans, switches, sockets etc.	2	
	12	Electrical layouts: Methods of developing electrical layouts on a floor plan by specifying electrical points and marling with symbols.	3	
III	Acoustics		10	12
	13	Factors involving sound, Terminology (Sound waves, Wavelengths, Frequency, Velocity, Resonance, Strength of sound, Sound levels, Loudness)	3	
	14	Sound in interiors, Sound Transmission	2	
	15	Sound Absorption,	1	
	16	Types of sound absorptive materials,	2	
	17	Sound controlling,	1	
	18	Sound insulation.	1	
IV	Damp Proofing and Termite Proofing		5	12
	19	Causes of damp proofing, Effects of damp proofing	1	
	20	Materials used for damp proofing, Methods of damp prevention,	1	

		Prevention of dampness		
	21	Damp proofing treatments in buildings.	1	
	22	Termite Proofing: Anti-termite treatment – Pre-construction treatment, site preparation, Soil treatment, Post-construction treatment.	2	
V	Open Ended Module: Practical		30	
		1. Visit to Sewage treatment plants 2. Waste water Disposal methods 3. Site Visits 4. Legal restrictions 5. Experiential Learning activities- acoustics, lighting and plumbing		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	1	3	1	2	3	3	1	1	1	2	3
CO 2	2	3	2	2	1	-	3	-	2	1	1	2	3
CO 3	2	2	2	2	-	-	2	-	2	1	1	2	3
CO 4	3	2	2	1	-	-	3	2	1	1	1	2	3
CO 5	2	3	3	3	2	1	3	3	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References:

1. Fundamentals of Acoustics, Kinsler and Frey
2. Acoustics in built environment, Duncan Templation
3. Water Supply and Sanitary Engineering, Birdie, G. S., and Birdie, J. S.,
4. Electrical wiring, Estimating and Costing-L.Uppal

Programme	B. Sc. Family and Community Science				
Course Title	DEVELOPMENTAL CHALLENGES				
Type of Course	Major				
Semester	VII				
Academic Level	400 -499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	1. Basics in Human Development				
Course Summary	The course introduces students to various disabilities in childhood years. It highlights aspects such as aetiology, characteristics and management of different disabilities. The educational practices in special education and inclusive education are also dealt. It also provides an overview of policies and laws related to disability.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Orient the students about the need and importance of studying children with different disabilities and how needs of these children differ from others.	U	C	Instructor-created exams / Quiz
CO2	Develop an understanding and awareness of the basic terms, issues and concepts related to disability.	U	P	Practical Assignment / Observation of Practical Skills
CO3	Explain students about the educational and welfare programs, facilities and services available and the efficacy of the same.	Ap	C	Seminar Presentation / Group Tutorial Work
CO4	Develop sensitivity towards parental coping and acceptance of the situation concerning disability in the family	An,Ap	C	Instructor-created exams / Home Assignments

* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C)
 # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Historical Background to Special Needs as a Discipline		5	12
	1	History of the field	1	
	2	Pioneers in the field	1	
	3	Emergence of special needs as a discipline	2	
	4	Present status of the field (with focus on special education and inclusion)	1	
II	Childhood Developmental Disorders and Disabilities		20	31
	5	Developmental disorders, disability, impairment, handicap: Concept and definition	3	
	6	Models of disability	1	
	7	Classifying disabilities	1	
	8	Social construction of disability	2	
	9	Demography of disability in India	2	
	10	Causes, Characteristic, identification, assessment and intervention with reference to: Loco motor disability, Visual disability, Auditory and speech disability	2	
	11	Causes, Characteristic, identification, assessment and intervention with reference to: Intellectual disability , Autism	3	
	12	Causes, Characteristic, identification, assessment and intervention with reference to: Learning disability, ADHD, Cerebral Palsy	3	
	13	Causes, Characteristic, identification, assessment and intervention with reference to: Social and Emotional Disability	3	
III	Family having Children with Disabilities		15	43
	14	Role of parents in upbringing special children	3	
	15	Parental acceptance and coping with the presence of special child in the family	3	
	16	Stages parents go through to come to the terms with the condition of the disabled child	3	
	17	Facilitating and debilitating parental behavior in the development of special child	2	
	18	Role of HDFS professionals in dealing children with special needs.	4	
IV	Programs and Policies for Children with Disabilities		5	12

	19	Rights of the child with disability	1	
	20	Policy and laws related to children with disability	1	
	21	Interventions strategies adopted for children with disabilities	1	
	22	Issues related to policies and programs in the area of special needs in India	2	
V	Open Ended Module: Practicum		30	
		1. Visits to organizations working with children with disabilities. 2. Interview the teachers of special school and parents to find out about their experiences, hopes, attitudes and difficulties faced. 3. Gather information of latest trends, services available etc. through newspapers, magazine and other media. 4. A week training at special school 5. volunteering work at special children foundations/centres		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	2	1	3	1	2	3	3	1	1	1	2	2
CO 2	1	3	2	2	1	-	3	-	2	1	1	2	2
CO 3	2	2	2	2	-	-	2	-	2	1	1	2	2
CO 4	3	2	2	1	-	-	3	2	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References:

1. Balsara, M. (2011). Inclusive education for special children. New Delhi: Kanishka Publishers.
2. Chopra, G. (2012). Early detection of disabilities and persons with disabilities in the community. New Delhi: Engage Publications
3. Dhawan, M. (2011). Education of children with special needs. New Delhi: Isha Books
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SEMESTER VIII

Programme	B.Sc. Family and Community Science				
Course Title	ADVANCED FOOD SCIENCE				
Type of Course	Major				
Semester	VIII				
Academic Level	400-499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basics in Food Science				
Course Summary	The course helps to assess the functional properties of food, develop nutritious recipes and develop skill in organoleptic evaluation of food.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the structure and composition of different foods	U	F	Instructor-created exams / Quiz
CO2	Assess the functional properties of food	E	C	Instructor-created exams / Quiz
CO3	Compare the methods of cooking	An	P	Seminar Presentation / Group Tutorial Work
CO4	Analyse the reasons and prevention of browning in vegetables and fruits	An	C	Instructor-created exams / Home Assignments
CO5	Develop different nutritious recipes with different foods	C	P	Writing assignments
CO6	Judge the organoleptic evaluation of foods	E	P	Practical Assignment / Observation of Practical Skills
CO7	Detect adulterants present in foods	Ap	P	Practical Assignment / Observation of Practical Skills
CO8	Discuss the emerging trends in food science	An	C	Instructor-created exams / Quiz
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Functional properties of foods and nutraceuticals		15	12
	1	Definition and properties of colloids, solution, sol, gel, emulsion, food dispersion	3	
	2	Enzymes- definition, classification, specificity of enzymes, enzyme inhibition, allosteric enzymes, application of enzymes in food industry	3	
	3	Sensory tests , Types of tests, Procedures for determination and monitoring of shelf life	3	
	4	Classification, probiotics, prebiotics, --health effect	3	
	5	Classification , sources and importance of polyphenols, Foods with nutraceutical effects- green tea grape seed, wheat grass, Garcinia cambogia and aloe vera	3	
II	Cereals, millets and pulses, nuts and oilseeds		15	43
	6	Cereal- Structure and composition	3	
	7	Parboiling, germination. Cereal cookery — effect of moist and dry heat	2	
	8	gluten- factors affecting gluten formation, Starch granules structure and characteristics	2	
	9	Nonstarch poly saccharides- (fibres, cellulose, hemicellulose, pectic substances, gums, carboxy methyl cellulose(CMC))Application in food industry batters and dough, breakfast cereals , fermented products	3	
	10	Nutritive value, Importance of germination & fermentation	2	
	11	protein concentrates and isolates	1	
	12	Anti nutritional factors present in pulses.	2	
III	Vegetables, fruits and flesh foods		10	31
	13	Nutritional importance, pigments and acids in vegetables and fruits, browning reactions enzymatic and non-enzymatic browning	2	
	14	Meat - Composition, post-mortem changes in meat	2	
	15	Fish – Composition, importance of fish	2	
	16	Egg- Structure and nutritive value ,Effect of heat on egg proteins, Quality of egg , and egg products	2	
	17	Milk - Composition, physical properties and processing, effect of heat, milk products	2	
IV	Food additives and emerging trends in food science		5	12
	18	Food additives , FSSAI , HACCP,	1	
	19	Principles of food packaging and labelling.	1	
	20	Food Fortification, GM foods	1	
	21	Novel foods, SCP, Leaf Protein	1	

	22	Nanotechnology in food industry	1	
V	Practicals		30	
	1.	Microscopic examination of different starch granules and effect of heat on starch (cake and bread making) Determination of gluten content of different flours		
	2.	Preparation of stable emulsion (mayonnaise) Stages of sugar cookery, crystalline and non-crystalline		
	3.	candies- Fondant, fudge, marshmallow. Preparation of foam and effect of additives on stability,		
	4.	Meringue.		
	5.	Effect of heat on milk / scum formation. Preparation of any 3		
	6.	products. Changes in pigments due to different cooking		
	7.	methods.		
	8.	Enzymatic browning of fruits and vegetables.		
	9.	Sensory evaluation of foods. Product development- preparation and standardization of novel		
	10.	nutritious recipes.		
	11.	Market survey on new processed items available in the local markets. Microbiological test for foods		

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	1	3	1	2	3	3	1	1	1	2	3
CO 2	2	3	2	2	1	-	3	-	2	1	1	2	3
CO 3	2	2	2	2	-	-	2	-	2	1	1	2	3
CO 4	3	2	2	1	-	-	3	2	1	1	1	2	3
CO 5	2	3	3	3	2	-	3	3	1	1	1	2	3
CO 6	2	2	2	2	-	-	2	-	2	1	1	2	3
CO 7	2	3	1	2	1	2	3	3	1	1	1	2	3
CO 8	3	2	2	1	-	-	3	2	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCES:

- 1.Potter, N. Hotchkiss, H.J, Food Science, 5th edition, CBS publishers and distributors, New delhi, 1996.
- 2.Srilakshmi, B, Food Science, New Age International Pvt. Ltd., Chennai, 2006
- 3.Beckhan. C.G &Graves.H.J, Foundations of food preparations, Macmillan Publishing Co, New Delhi, 1979.

Programme	B. Sc. Family and Community Science				
Course Title	FINANCE AND CONSUMER BEHAVIOUR				
Type of Course	Major				
Semester	VIII				
Academic Level	400 -499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	1. Basics in Science				
Course Summary	The Course exposes students to real life situations for realizing their role as consumers as well as financial managers in family settings.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	To understand significance of family income and expenditure and saving for future	U	C	Instructor-created exams / Quiz
CO2	Develop instincts to be a responsible consumer	U, Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Analyze relevance of consumer movement in India	An	C	Seminar Presentation / Group Tutorial Work
CO4	Gain knowledge on consumer protection Laws and Acts and reflect upon personal rights and responsibilities	An, Ap	C	Instructor-created exams / Home Assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Consumer and the Market		10	12
	1	Consumer: definition and meaning; consumer Vs customer Classification of Consumer goods	1	
	2	Role of consumers in the economy, National Income, Per Capita Income, Household wise distribution of income	1	
	3	Consumer and the market: definition and classification of markets, types Consumer demand and supply	2	
	4	Channels of distribution	1	
	5	Consumer behaviour: changing nature of consumer behaviour to suit modern market and business trends – concepts of C2C, B2B, B2C, C2B etc; Factors influencing Consumer behavior	2	
	6	Meaning, characteristics of buyer behaviour, buying motives – types; consumer buying process	1	
	7	Change in consumer purchase practices in the digital market – concept of e-commerce, m-commerce, online shopping etc; Extended use of plastic currency and cards	2	
II	Household Income and Expenditure, Family Savings and Credit practices		15	31
	8	Household Income – Types, Sources, Supplementation of family income, use of family income, per capita income. Household expenditure: Items of expenditure, mental and written plans, Factors influencing expenditure pattern, expecting exigencies and tackling them.	3	
	9	Account maintenance: methods of account keeping like balance sheets, account books, ledgers, income-expenditure records	2	
	10	Process of budgeting- steps in drafting a family budget, balancing income and expenditure, ways to meet emergent expenses. Personal finance management: Tax implications: significance in budgeting, measures adopted and instruments used to ensure tax benefits, calculation of personal income tax for an individual’s monthly income.	3	
	11	Engel’s Laws of consumption, drafting well balanced family budgets	1	
	12	Consumer credit- Concept, meaning, need, sources, credit cards, credit services availed by the family members, types of loans availed by families.	2	
	13	Mortgages: Definition and conceptual meaning, significance in meeting emergent needs of expenditure.	1	
	14	Financial security arrangements: Family savings and investments- need ,principles, channels of investment	1	
	15	Savings and savings institutions, merits and demerits of each, Guidelines for wise savings practices	2	

III	Consumerism in India		15	43
	16	Consumerism: genesis, reasons for consumer movement Historic Declaration of Consumer rights Consumerism in India Consumer problems – types, nature , causes and solutions	3	
	17	Concern for the Consumer : Consumer education: Meaning and definition; need and scope, objectives, aspects, methods, contents and resources, Problems. Consumer education and empowerment: meaning, need and achievements with specific relevance to India	2	
	18	Consumer aids: classification – Labels, Trademarks, Brand Names, Patents, Warranty, Guarantee, Quality Control and After Sales Service, Government and Voluntary Agencies,	3	
	19	Role of advertisements influencing consumer behaviour Product labeling and packaging – significance to fair practices Unfair consumer practices: adulteration and faulty weights and measures	3	
	20	Green Consumerism -Meaning and importance with respect to consumerism, need, consideration in daily consumption and significance, ethos of adopting sustainable/eco- friendly lifestyle as green consumers	4	
IV	Consumer Protection		8	12
	21	Consumer protection: concept, need and significance Consumer rights and responsibilities in India Consumer organizations – origin, functioning, role and types Consumer cooperatives – role, history and growth in India Consumer redress: role of consumer forums and consumer courts in safeguarding consumers	4	
	22	Basic legislative framework for consumer protection in India- Consumer Protection Act 1986 (COPRA) , Alternative redressal mechanisms, Mediation centres. Standardization and quality control measures: Role of ISI, FPO, AGMARK, ISO, Eco mark, Wool mark, Silk mark, Cotton mark, Handloom mark, BEE Star labeling and others, Consumer Protection Act 2019.	4	
V	Open Ended Module:		12	
		1.Evaluation and designing of advertisements in the print media including products, services and social ads. 2. Evaluation and designing of informative and attractive labels for different type of food products. 3.Learning to fill different bank forms for depositing money, start fixed deposit or recurring deposit 4.Food adulteration tests		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	3	1	3	1	2	3	3	1	1	1	2	3
CO 2	2	3	2	2	1	-	3	-	2	1	1	2	3
CO 3	3	2	2	2	-	1	2	-	2	1	1	2	3
CO 4	3	2	2	1	-	1	3	2	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References:

1. Gangawane, L. V., and Khilare V. C. (2007). Sustainable Environmental Management: Dr. Jayshree Deshpande Festschrift Volume. Delhi: Daya (ISBN 13: 9788170354741)
2. Gupta, C.B., and Nair, R.N. (2004). Marketing Management. New Delhi: Sultan Chand and Sons
3. Kathiresan, S., and Radha, V. (2004). Marketing. Chennai: Prasanna Publishers
4. Khanna S.R., Hanspal S., Kapoor S., & Awasthi H.K. (2007). Consumer Affairs. New Delhi: Universities Press India Pvt.Ltd.
5. Nair R., and Nair S, R. (2003). Marketing. New Delhi: Sultan Chand and Sons
6. Nair, S (2002). Consumer Behaviour. New Delhi: Sultan Chand and Sons
7. Pattanchetti, C.C., and Reddy (2002). Principles of Marketing. Coimbatore:

Programme	B. Sc. Family and Community Science				
Course Title	Technical Textiles				
Type of Course	Major				
Semester	VIII				
Academic Level	400-499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics in Textile Science				
Course Summary	The course is a study about the details of technicalities associated with the textile industry and to understand the characteristics and functional properties of textile materials and their implementation.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Identify the opportunities to develop a product on a market	U	C	Instructor-created exams / Quiz
CO2	Analyses various technical textile products in order to recognize the manufacturing process.	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Understand the impact of the fibre characteristics and used technologies on the technical textile products.	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Select the textile elements and manufacturing processes to design the final product for end use	U	C	Instructor-created exams / Home Assignments
CO5	Identifying major segments of the textile industry and distribution channel.	Ap	P	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I	Introduction to Technical Textiles		10	20
	1	Introduction, Definition	2	
	2	Scope & Development, Processes,	3	
	3	Applications, Globalizations	3	
	4	Future prospects of technical textile industry	2	
II	Introduction to Technical fibers and yarns		10	25
	5	Brief introduction to Technical fibers and yarns	3	
	6	Conventional fibers and yarns	3	
	7	New developed fibers and yarns	2	
	8	Applications	2	
III	Technical Fabric Structures		18	30
	9	Brief study of woven and knitted fabrics	2	
	10	Detailed study of Non-woven structure –Introduction	2	
	11	Methods of batt production	2	
	12	Different methods of web laying	2	
	13	flash spinning, melt blown	2	
	14	Different methods of bonding,	2	
	15	Hydro entanglement process.	2	
	16	Finishing of Technical Textiles- Introduction, Processes	2	
	17	Mechanical, Heat setting and Chemical process	2	
IV	Brief introduction to Textile Reinforced & Application of Technical Textiles		10	23
	18	Composite material, Smart Textiles, Nano tech in textiles-Nano fibres & Nano finishes	2	
	19	Application of Technical Textiles – Meditech, Agrotech, Mobiltech,	2	
	20	Buildtech, Clothtech, Geotech	2	
	21	Homtech, Indutech, Oekotech	2	
	22	Packtech, Protech, Sporttech.	2	
V	Related Experience		12	
	1	Assignments / Seminars / Mini Projects based on above topics. Case studies related to the product development		

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO 4	PS O5	PS O6	PO 1	PO2	PO3	PO4	PO5	PO 6	PO 7
CO 1	1	-	-	-	-	-	1	-	-	-	-	-	-
CO 2	2	3	-	-	-	-	-	-	-	3	-	-	-
CO 3	-	-	1	-	-	-	-	2	-	-	-	-	-
CO 4	-	-	2	3	-	-	-	-	-	-	1	-	1
CO 5	-	1	-	-	-	-	-	-	-	-	-	2	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCES

1. Handbook of Technical Textiles – Edited by A R Horlocks and S C Anand.
2. Technical Textiles – C Byrne, Textiles Marg issue 2.95, 1995.
3. Specialty Fibers for Technical Textiles – J E McIntyre, Dept. of Textile Industry University of Leeds.
4. Handbook of Textile Fibers, Manmade Fibers – JG Cook, 5th edition, Merrow 1984.
5. Woven Cloth Construction – AT Robinson and R Marsh, The Textile Institute Manchester, 1973
6. Contribution of Knitting to Current & Future Developments in Technical Textiles S C Anand, Conference of Technical Textiles Group, The Textile Institute ,Manchester, 1988
7. Production & Properties of Non – Woven – A Newton & J E Ford, Textile progression,1973.
8. Developments in Non – woven fabrics – A T Purdy, Textile Progression, 1980

9. Coated Fabrics – K Krishna J 1995.

10.Coated Fabrics – F Bohin et al., 1998.

11.An Introduction to Composite Materials – M G Bader, University of Surrey 1997

12.Composite Materials: Engineering and Science – F L Mathews & R Rawlings, Chapman and Hall, London 1994

13.Coated Fabrics – S J Krishnan, 1991 14.Related Published bound book of papers from SASMIRA & BTRA

ELECTIVES (V,VI & VII)
SEMESTER VIII

Programme	B.Sc. Family and Community Science				
Course Title	MACRONUTRIENTS				
Type of Course	Elective V				
Semester	VIII				
Academic Level	400-499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Course in Nutrition Science				
Course Summary	The course helps to understand the concepts of nutrients deeper and apply the same to maintain health and proper nutrition at different stages of life.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Identify basic and latest concepts of nutrition	An	C	Instructor-created exams / Quiz
CO2	Analyze the properties and metabolism of carbohydrate in our body and evaluate the modification, deficiencies and toxicity	An	C	Instructor-created exams / Quiz
CO3	Evaluate the RDA, digestion, absorption and metabolism of protein in our body	E	C	Seminar Presentation / Group Tutorial Work
CO4	Understand the classification of fatty acids and lipids and identify the metabolism of lipids	U	C	Instructor-created exams / Home Assignments
CO5	Determine the energy value of food and identify the components of energy expenditure	Ap	P	Writing assignments
CO6	Identify the interrelationship between carbohydrate, protein, fat and water in maintaining human health	Ap	P	Instructor-created exams / Home Assignments
CO7	Apply the benefits of non-nutritional components of food in different stages of life	Ap	C	Instructor-created exams / Home Assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Understanding nutrition and carbohydrates		12	14
	1	Nutrition science: Basic concepts, Latest concepts, Methods for studying the nutrient requirements.	2	
	2	Carbohydrates: Classification, Properties, Functions, Digestion, & absorption, Food sources & RDA.	2	
	3	Metabolism: Glycolysis, gluconeogenesis, TCA cycle, HMP shunt, glycogenesis, glycogenolysis, bioenergetics.	2	
	4	Regulation of blood glucose concentration, threshold for glucose, abnormal levels in blood glucose. Glycemic index (Factors affecting GI)	2	
	5	Dietary Fiber (Classification, functions)& Resistant starch (Classification, functions)	2	
	6	Modification of carbohydrate intake for specific disorder. Deficiencies and Toxicity	2	
II	Proteins, Fats and Lipids		14	31
	7	Classification (Protein and Amino acid), Properties, Functions, Digestion, absorption, Food sources & RDA.	2	
	8	Metabolism: General catabolism of amino acids, deamination, transamination, decarboxylation, urea cycle.	3	
	9	Protein quality evaluation, Protein turnover, amino acid balance, Deficiency and toxicity.	2	
	10	Classification (Fatty acids and Lipids), eicosanoids-importance. Properties, Functions, Digestion, Absorption, transportation & utilization. Food sources & RDA.	3	
	11	Metabolism of lipids: biosynthesis and oxidation of saturated and unsaturated fatty acids, biosynthesis cholesterol and regulation, Toxicity and Deficiency.	2	
	12	Plasma lipoproteins and their significance and ketone body formation.	2	
III	Energy		16	43
	13	Definition.measurement of energy, Direct and indirect calorimetry. Determination of Energy value of food- Bomb Calorimeter	3	
	14	Physiological value of food, Gross calorific value, Total energy Expenditure	2	
	15	Components of energy expenditure- Resting Energy Expenditure	2	
	16	Thermic Effect of Food, Energy expended in Physical	2	
	17	BMR- definition its determinants & factors affecting BMR, factors affecting energy requirement, Recommended dietary allowances, factors affecting RDA, Indian reference man and woman, Energy Requirements.	3	
	18	Methods of estimation of energy expenditure. Estimating	2	

		energy requirement of individuals and group, energy balance.		
	19	Activity Nutrition and work capacity - factors affecting physical work capacity and efficiency.	2	
IV	Intermediary metabolism and regulation of nutrient metabolism and water		6	10
	20	Interrelationship between carbohydrates, proteins, and fats. Regulation of body weight, Control of food intake, role of hunger and satiety centre, metabolic consequences of starvation.	2	
	21	Functions. Water distribution in our body. Water balance. Regulation of water balance, Requirements of water.	2	
	22	Disturbances in fluid balance-dehydration and oedema.	2	
V	Open Ended Module:			
		Open-Ended Exploration and Assessment: Calculation of BMR, Total energy and fibre by 24 hour recall method Determination of protein digestibility corrected Amino acid score of the dish prepared Calculation of Visible and invisible fat in the diet by 24 hour recall method	12	

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	1	3	1	2	3	3	1	1	1	2	3
CO 2	3	2	2	2	1	-	3	-	2	1	1	2	3
CO 3	2	2	2	2	-	-	2	-	2	1	1	2	3
CO 4	3	2	2	1	-	-	3	2	1	1	1	2	3
CO 5	2	3	3	3	2	-	3	3	1	1	1	2	3
CO6	2	3	1	2	1	2	3	3	1	1	1	2	3
CO7	3	2	2	1	-	-	3	2	1	1	1	2	3
CO8	3	2	3	1	-	-	3	2	1	1	1	2	3
CO9	2	3	1	3	1	-	3	3	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCES

1. Mahan. L.K and Stump. S.E , Krause’s Food, Nutrition and Diet Therapy, W.B Saunders Company, USA.
2. Nix .S, William’s Basic Nutrition and Diet Therapy, Mosby, India.
3. Sreelakshmi. B, Nutrition Science, New Age International, New Delhi.
4. Bamji, MS, Rao, MP; Reddy. V, “Textbook of human Nutrition”, Oxford and IBH Publishing Co, New Delhi

Programme	B.Sc. Family and Community Science				
Course Title	Visual Merchandising				
Type of Course	Elective V				
Semester	VIII				
Academic Level	400 – 499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics in Fashion Marketing				
Course Summary	Visual Merchandising is an essential part of textile course which emphasises on the importance of merchandise in the retail sector. It is an industry related specialised programme. The course aims to bridge the gap between the skill-profiles of the graduates and those that are required by the industries in the job market.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	To sensitize the students about the concept of visual merchandising	U	C	Instructor-created exams / Quiz
CO2	To imbibe the basic techniques of visual merchandising	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	To provide the basic working tools and skills related to visual merchandising	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	To educate students on effective display techniques to achieve store image	U	C	Instructor-created exams / Home Assignments
CO5	To demonstrate the duties and responsibilities of visual merchandiser	U	C	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I	Fundamentals of Visual Merchandising		10	18
	1	Visual Merchandising – introduction	2	
	2	Purpose of display	2	
	3	Colour and texture	2	
	4	Line and composition	2	
	5	Lighting and types	2	
II	Exterior and Interior Presentation		15	28
	6	Store exterior, window display	3	
	7	Themes and schemes	2	
	8	Designing a window display	2	
	9	Store interior	2	
	10	Display -Types of display	3	
	11	Display -Types of display settings	3	
III	Props, Fixtures and Signage		15	34
	12	Mannequins and types	3	
	13	Alternatives to mannequins	3	
	14	Fixtures and types, props	3	
	15	Attention getting devices	3	
	16	Graphics and signage – types and materials	2	
	17	Point of purchase and add on sales	1	
IV	Role of Visual Merchandising		12	18
	18	Virtual visual merchandising	2	
	19	Role of visual merchandiser	2	
	20	Visual merchandising and changing face of retail	2	
	21	Career opportunities in visual merchandising	3	
	22	Visual merchandising in departmental stores, small retail outlets, malls and boutiques	3	
V	Open Ended Module:		8	
		Group project – visit to retail outlets/boutiques and present the report Create a window display setting	8	

Mapping of COs with PSOs and POs:

	PS O1	PSO 2	PSO 3	PSO4	PSO 5	PS O6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	3	3	-	3	-	-	3	-	2	-	-	-	-
CO 2	3	2	-	2	-	-	3	-	2	-	-	-	-
CO 3	3	2	-	2	-	-	2	-	3	2	-		1
CO 4	3	3	-	3	-	-	3	1	2	1	1	1	-

CO 5	3	-	2	-	-	-	3	2	2	2	2	2	-
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Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCES

- Martin M Pegler (2011), Visual Merchandising and Display, 5th Edition, Fairchild Publication
- Claus Ebster and Marion Garaus (2011), Visual Merchandising and Store Design, United States, Business Expert Press
- Tony Morgan (2011), Visual Merchandising. Laurence King Publishing
- Contemporary Visual Merchandising and Environmental Design 2006 by Jay Diamond & Ellen Diamond

Programme	B.Sc. Family and Community Science				
Course Title	ONCOLOGY NUTRITION				
Type of Course	Elective VI				
Semester	VIII				
Academic Level	400-499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Course in Dietetics				
Course Summary	The course helps to understand the nutrition therapy that is needed during treatment of cancer and post treatment stage.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand general information about onset and diagnosis of cancer	U	F	Instructor-created exams / Quiz
CO2	Interpret general biochemical changes occurs in cancer	An	C	Instructor-created exams / Quiz
CO3	Extend knowledge in medical nutrition therapy for different types of cancers	Ap	C	Seminar Presentation / Group Tutorial Work
CO4	Interpret nutritional care for prevention, treatment and survivors of cancer	An	C	Instructor-created exams / Home Assignments
CO5	Explain about nutritional management during and after treatment of cancer	U	C	Writing assignments
CO6	Understand about different cancer supporting groups	U	C	Instructor-created exams / Quiz
CO7	Understand role dietitian in nutritional care for cancer patients and prevention approaches	U	P	Practical Assignment / Observation of Practical Skills
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Introduction to oncology		10	12
	1	Cancer biology, Classification of cancer	1	
	2	Risk factors-environmental, hereditary & nutritional factors	2	
	3	Epidemiological data on cancer incidence	2	
	4	Standards for diagnosing malnutrition	2	
	5	Cancer Cachexia	1	
	6	Biochemical changes in cancer in general	2	
II	Nutrition Support for Oncology Patients		15	43
	7	Medical nutrition therapy - Head and Neck Cancer, Breast and Reproductive Cancer, Prostate Cancer	2	
	8	Medical nutrition therapy - Lung Cancer, Oral cancer, Esophageal cancer, Gastric cancer, Colon cancer, Pancreatic cancer	3	
	9	Hematologic Malignancies	2	
	10	Enteral and parenteral nutrition in cancer	2	
	11	Nutrient supplementation in cancer	1	
	12	Role of nutrition and exercise in cancer survivorship	1	
	13	Roles of vitamins, minerals, phytochemicals, herbal and botanical supplements in cancer prevention and treatment	2	
	14	Role of alcohol, sugar, salt and caffeine in cancer, Palliative Care- Role of nutrition in palliative and hospice care	2	
	III	Nutritional Management of Cancer		15
15		Nutritional implications in chemotherapy and radiation therapy	3	
16		Anorexia and Other Gastrointestinal Toxicities Associated with Cancer Treatments	3	
17		Surgical Oncology-Pre and post operative nutrition in cancer	3	
18		Immunotherapy, Bone marrow transplantation, Interactions between cancer therapies and nutrient	3	
19		Cancer support groups- governmental and nongovernmental organizations	3	
IV	Role of Dietitian in Cancer Care		8	12
	20	Cancer prevention approaches- Children, adults and elderly	3	
	21	Patient support and management during therapy	2	
	22	Patient support and management during survivorship	2	
V	Related Experience		12	
	1	Case studies in Oncology Nutrition.		
	2	Visit to a major cancer research centre		
	3	Development of standardized recipes for cancer patients		

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	2	2	-	2	3	1	2	1	1	3	3
CO 2	1	1	1	1	-	2	3	1	1	1	2	2	3
CO 3	1	2	2	1	-	2	2	2	1	1	2	3	3
CO 4	3	2	3	2	-	2	2	1	2	1	2	2	3
CO 5	2	2	1	2	-	2	2	2	2	2	1	2	3
CO 6	2	2	2	1	-	2	3	2	2	2	1	2	3
CO7	2	3	2	2	-	2	2	1	1	2	2	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCES

1. Mary Mariyan, Susan Roberts, Clinical Nutrition for Oncology Patients, Jones and Bartlett Publishers, 2010
2. Vincent T De Vita Jr., Theodore S Lawrence, Steven A Rosenberg, Cancer, Principles and Practice of Oncology, Wolters Kluwer And Lippincott Williams & Wilkins Publications, 9th Edition, 2011
3. Laura Elliott, Laura L. Molseed, Paula Davis McCallum, The Clinical Guide to Oncology Nutrition, Oncology Nutrition Dietetic Practice Group, American Dietetic Association, Second Edition, 2006
4. Mohan, L.K. and Shump, S.E. Krause's Food Nutrition & Diet therapy, W.B.Sauders Company, XII edition, 2001
5. David L Katz, Rachel S C Friedman, Nutrition in Clinical Practice, Wolters Kluwer Publishers, Third Edition, 201

Programme	B. Sc. Family and Community Science				
Course Title	Art and Textile Design				
Type of Course	Elective VI				
Semester	VIII				
Academic Level	400-499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-		60
Pre-requisites	Aptitude in sketching				
Course Summary	Textile Art is a unique course. We nurture individual approaches to specialisms in painting ,print and, create motifs .				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	To have a knowledge on the history of art and appreciate the indigenous art work of India	U	C	Instructor-created exams / Quiz
CO2	To develop the skill to produce creative textile prints inspired from the paintings of India	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	To equip the students with the necessary knowledge & understanding of the chronological and cultural history associated with the Art, Craft and Design movements and developments through historical periods.	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	To develop students written, recording and referencing skills with relevance to associated Art, Craft and design developments.	U	C	Instructor-created exams / Home Assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I	HISTORY OF PAINTING		15	12
	1	History of painting	2	
	2	History of world painting	2	
	3	Cave painting of India – Ajanta, Ellora, Bagh, Sittanvasal, Bhimbetta	3	
	4	Traditional paintings-Rajput Painting, Mughal Painting,	2	
	5	Madhubani Painting, Warli Painting, Tanjore Painting	3	
	6	Kerala paintings-Kerala Murals and Kalamkari	3	
II	WORLD PAINTING		10	31
	5	Pre- historic art	2	
	6	Roman art and architecture	3	
	7	Egypt, art, and architecture	3	
III	MIDDLE AGES ART		15	43
	9	Medieval European art	3	
	10	Chinese art	2	
	11	Art of the Islamic world	2	
	12	Art of the Christian world	2	
	13	Gothic art and architecture	2	
	14	European Renaissance and Baroque art and design	4	
IV	MODERN ART		8	12
	16	History of modern art	1	
	17	Types of modern art-NeoClassicism, Romanticism, Realism,, Cubism,	2	
	18	Impressionism, Pointillism, Symbolism	1	
	19	Art Nouveau,Art Deco,	1	
	20	Art, Popart, Kinetic Art,Op art,	1	
	21	Abstract art,Graffiti, and Contemporary art	1	
	22	Futuristic,, Surrealism,Expressionism, Fauvism,	1	
V	OPEN ENDED MODULE		12	
	1	<p>Craft documentation Real-World Applications Learning Motifs, Layouts and Styles · Types of layouts – Non-directional, One-directional, and Two-directional, All-over packed. · Exploring designs from Nature, Geometry, Floral, Marine, Juvenile, Contemporary, Conversational and botanical · Theme based textile designing – Kid’s , Women’s and Men’s · Ethnic prints- Indian, African, Egyptian and Japanese The students should maintain a record of all the designs Open-Ended Exploration and Assessment: Research and identify key Art, Craft and Design</p>		

		developments and styles within India		
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Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PO 1	PO 2	PO 3	PO 4	PO 5	PO6	PO 7
CO 1	1	-	-	-	-	-	1	-	-	-	-	-	-
CO 2	2	3	-	-	-	-	-	2	-	-	-	-	-
CO 3	-	-	1	-	-	-	-	-	-	3	-	-	1
CO 4	-	-	2	3	-	-	-	2	-	-	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

Reference

1. Janson H.W/Janson A.F (2003) History of art (Sixth edition) Prentice Hall College division.
2. Muray.P (1985)- Art of the Renaissance- Thames and Hudson – UK
3. Seth.M (2006)- Indian Painting- the Great Mural Tradition – Mapin Publisher – Ahmedabad.
4. Kumar.R- Encyclopedia of Indian Painting- Anmol publishing New Delhi

Dr.Daljeet,Jain P.C(2007)- Indian Miniature painting - Noida

Programme	B.Sc. Family and Community Science				
Course Title	PUBLIC HEALTH & SANITATION				
Type of Course	Elective VII				
Semester	VIII				
Academic Level	400-499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics in science				
Course Summary	This course explores various aspects of public health, including sanitation infrastructure, hygiene practices, water quality management, waste disposal, and disease control strategies. Through theoretical learning and practical applications, participants will develop the knowledge and skills necessary to implement public health interventions, assess environmental health risks, and advocate for policies that protect community well-being.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Identify the diseases associated with occupation	U	C	Instructor-created exams / Quiz Practical
CO2	Identify the hazard in industrial area and propose preventive measures	An	C	Assignment / Observation of Practical Skills Seminar
CO3	Manage safety in industries and propose safety measures and PPE	Ap	P	Presentation / Group Tutorial Work
CO4	Demonstrate the hygiene and sanitation procedures	Ap	P	Instructor-created exams / Home Assignments
CO5	Demonstrate the microorganism responsible for the disease and their control	E	C	Observation of Practical Skills Seminar
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Introduction		10	12
	1	Health-Physical, Mental, Social – Positive health– Quality of life Index	1	
	2	Health programmes: Health programmes control measures in	2	

	operation in India - Tuberculosis, poliomyelitis, leprosy, filariasis and diphtheria.. -		
3	Health situation in India – Health Problems-Primary health care in India –	2	
4	PHCs National Programmes for elimination of diseases	2	
5	Water borne diseases and air borne diseases.	2	
6	Methods of disease transmission.	1	
II	Sanitation	15	31
7	Sanitation: Definition and meaning.	1	
8	Microbial growth pattern and factors affecting microbial proliferation.	3	
9	Sewage Disposal : disposal of sewage and night soil	2	
10	Treatment of sewage system	2	
11	Waste disposal- Disposal of solid waste;	2	
12	Waste water handling: Pre-treatment, primary treatment, secondary treatment, tertiary treatment and disinfection.	3	
13	Water -supply sources – impurities and purification of water	2	
III	Contamination and hygiene	15	43
14	Contamination: Sources of contamination and protection against contamination.	2	
15	Methods of killing micro-organism- Use of heat, chemicals and radiation.	2	
16	Methods of inhibiting microbial growth- Use of refrigeration, chemicals, dehydration and fermentation	3	
17	Principles of hygiene: General principles of hygiene – its relation to food preparation and food handling habits.	3	
18	Personnel hygiene- Meaning and importance; Hygienic practices of employees; personal hygiene and contamination of food products-	3	
19	Sanitation Training and Education for Food Service Workers	2	
IV	Safety	8	12
20	Occupational Safety, Health and Environment: Definition-safety at work place		
21	safe use of machines and tools-hazard-physical hazard (noise, radiation, fire, Electrical, illumination)-chemical hazard-biological hazard		
22	Personal Protective Equipment Accident preventive techniques-First Aid-Plant Layout for safety-safety of different sectors		
V	Open Ended Module:	12	
1	Open-Ended Exploration and Assessment: Visit to Food Industry Evaluate sanitary hygiene using FSSAI rating checklist Analyse effluent treatment Analyse the sewage treatment Evaluate sanitary hygiene in college canteen/cafeteria/pantry		

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Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	2	3	2	-	2	3	2	3	1	2	3	1
CO 2	1	2	2	2	-	2	2	2	3	1	2	3	1
CO 3	1	2	3	3	-	3	3	3	2	1	2	3	1
CO 4	1	2	3	2	-	2	3	3	3	2	2	3	1
CO 5	1	2	3	3	-	2	2	2	2	1	2	3	1

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCES:

1. Parke. K. 2007. Text book of preventive and Social Medicine 19th Edition, M/s. Banaraisdasis Bhanet Publishers, Jabalpur, India.
2. William, C., Frazier and Dennie. C Westheff. 1996. Food Microbiology 4th Edition, Tata McGrahill Company Limited
3. S.Roday – Food Hygiene and Sanitation
4. M. Jacob. (1989) – Safe food Handling.
5. V.N. Reinhold – Principles of Food Sanitation

Programme	B. Sc. Family and Community Science				
Course Title	Fashion Psychology				
Type of Course	Elective VII				
Semester	VIII				
Academic Level	400- 499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics in Fashion Design Concept				
Course Summary	Explores the intersection between psychology explores the intersection between psychology and clothing choices, delving into the impact of fashion on human behaviour and vice versa.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the importance of psychology in fashion	U	C	Instructor-created exams / Quiz
CO2	Interpret the influence of fashion on human body	U	P	Practical Assignment / Observation of Practical Skills
CO3	Access the impact of colour with mood and perceptions	U	P	Seminar Presentation / Group Tutorial Work
CO4	Select the right choice of clothing according to human needs	U	C	Instructor-created exams / Home Assignments
CO5	Predict the consumer's buying behaviour and psychology	Ap	P	One Minute Reflection Writing assignments
CO6	Recognize and interpret the expressive nature of fashion, understanding how individuals use clothing to communicate aspects of their identity.	Ap	P	Viva Voce
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I	Psychology of fashion		10	18
	1	Overview of fashion psychology	2	
	2	Psychology behind fashion and clothing – variations and combinations, correct and wrong outfit, feel and comfort	3	
	3	Importance of applying psychology	3	
	4	Style affects- personal style and appearance	2	
II	Psychological perspectives on dress		11	24
	5	Dress and social cognition, dress and impression, dress and physical appearance, dress and body image	3	
	6	Psychology of clothing	3	
	7	Factors influencing fashion	3	
	8	Effects of dress on the behaviour of the wearer	2	
III	Psychological aspects of fashion		20	34
	9	Understanding the purpose of clothing - Protection, modesty, concealment, attraction	3	
	10	Social and psychological aspects of fashion	2	
	11	Understanding the theories of fashion	2	
	12	Wellbeing in fashion industry	3	
	13	Influence of fashion on body	3	
	14	Fashion consumption and behaviour	3	
	15	Fashion and self-identity	1	
	16	Fashion as status symbol	2	
	17	Career in fashion and fashion forward	2	
18	Psychological barriers to sustainable fashion consumption	1		
IV	Psychology of buying behaviour		7	26
	19	Mind to wear, choose right clothing, occasional clothing, self-confidence with dressing	2	
	20	Fashion psychology today	2	
	21	Research in fashion psychology	2	
	22	Market research methods in fashion psychology	1	
V	Open Ended Module		12	
	1	Case study of real-life scenarios. Fashion Brand Analysis Fashion and body image workshop Field trip		

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO 4	PS O 5	PS O 6	PO 1	PO 2	PO 3	PO 4	PO 5	P O 6	P O 7
CO 1	2	-	-	-	-	-	2	-	-	-	-	-	-
CO 2	1	-	-	-	-	-	2	-	1	-	-	-	-
CO 3	2	1	-	-	-	-	1	-	-	-	-	-	-
CO 4	1	1	1	-	-	-	1	-	-	-	1	-	-
CO 5	2	1	1	-	-	-	2	-	-	-	-	-	-
CO 6	2	1	-	1	-	-	1	1	-	-	-	-	1

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCE

- Carolyn Mair, The Psychology of Fashion (The Psychology of Everything), Routledge; 1st edition (15 Mar. 2018)
- Sharron J. Lennon, Kim K. P. Johnson, Nancy A. Rudd, Social Psychology of Dress, Fairchild Books, 1st, 2017
- Michael R Solomon; Nancy J Rabolt, Consumer behavior: in fashion, Upper Saddle River, N.J.Pearson/Prentice Hall, 2009

Mike Easey, Fashion Marketing, Wiley- Blackwell Publishing, 2009

Programme	B.Sc. Family and Community Science				
Course Title	RESEARCH METHODOLOGY				
Type of Course	Major				
Semester	VIII				
Academic Level	400-499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Pre-requisites	Basics of Science				
Course Summary	Through a combination of theoretical learning and practical exercises, participants will learn how to formulate research questions, select appropriate methodologies, collect and analyze data, and draw valid conclusions.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Familiarise students how to do a research related to their topic	U	C	Instructor-created exams / Quiz Practical
CO2	Develop the ability to identify research problem	Ap	P	Assignment / Observation of Practical Skills Seminar
CO3	Possess the ability to find out research tool to conduct their research	Ap	P	Presentation / Group Tutorial Work
CO4	Possess an understanding of how to write a research proposal and statistically analyse the results	U	C	Instructor-created exams / Home Assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Introduction to Research, Identification of Research Problem and Sampling		10	12
	1	Definition, Objectives and Characteristics of research, Types of Research – Basic, Applied and Action research, Exploratory and Descriptive, Ex-post facto research.	2	
	2	Sources of research problem, Criteria for the selection of research problem.	1	

	3	Research design, Rationale, Statement of problem, Setting objectives, Definition of concepts, operational definition	2	
	4	Variables: Types– independent and dependent, control and intervening variables, limitations and delimitation.	2	
	5	Hypothesis – Meaning and importance, types of hypotheses.	1	
	6	Population and Sample, Sampling techniques, Size of sample, Merits and Limitations of sampling. Sampling and Non sampling errors.	2	
II	Research methods and tools, Organization of Data, Classification and Tabulation		15	43
	7	Methods – Survey, observation, interview, experimental, clinical methods.	2	
	8	Tools – Questionnaire, Schedule (for interview and observation), Case Study, Rating Scales, Attitude Scales. Reliability and validity	3	
	9	Primary and Secondary Data, Classification - Objectives of Classification	4	
	10	Tabulation - General rules of tabulation, Tables, Parts of a table, Types of tables, Representation of data, significance of diagrams and graphs, Types of diagrams and graphs- advantages and limitations.	6	
III	Parts of dissertation/research report/article, Scientific writing as a means of communication and Ethics in research		15	31
	11	Introduction, Review of literature, Methods, Results and discussion, Summary and conclusion, abstract, Bibliography.	4	
	12	Different forms of scientific writing.	1	
	13	Articles in journals, Research notes and reports, Review articles, Monographs, Editorials, Dissertations, Thesis, Bibliographies, Book chapters and articles, writing for grants.	6	
	14	Permission, Data fabrication and falsification, Plagiarism, Redundant and duplicate publication, Conflict of interest, Authorship issues, Animal and human welfare concerns, Reviewer responsibility, IPR	4	
IV	Descriptive and Sampling statistics		8	12
	15	Measures of central tendency-mean, median, mode	1	
	16	Measures of variability –range, quartile deviation, mean deviation Standard deviation	1	
	17	Correlation coefficients, rank order correlation, product moment correlation – regression and prediction	1	
	18	Normal probability curve –properties, practical applications	1	
	19	Statistical inference and central limit theorem	1	
	20	Null hypothesis and tests of significance	1	
	21	The chi-square	1	
	22	Testing difference between mean, proportions, standard deviations and correlations.	1	
V	Related experience		12	

	1	Construct a research tool.		
	2	Prepare a research tool.		
	3	Present abstract of a research report.		
	4	Preparation of diagrams/ graph		

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	2	3	2	-	2	2	2	2	1	2	3	3
CO 2	1	1	2	2	-	2	2	2	2	1	2	1	3
CO 3	2	3	3	2	-	3	2	3	1	1	2	2	3
CO 4	2	2	3	2	-	2	2	2	2	1	2	3	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCES:

1. Kothari.C.R, Research Methodology, Wiley Eastern Ltd, New Delhi, 2000.
2. Best W L & Khan V, Research in Education, 7th edition, prentice hall Private, New Delhi.
3. Bandarkar, P.L. and Wilkinson T.S. (2000) : Methodology and Techniques of Social Research, Himalaya Publishing House, Mumbai.
4. Batnagar, G.L. (1990) : Research Methods and Measurements in Behavioural and Social Sciences, Agri. Cole Publishing Academy, New Delhi.
5. Mukherjee, R. (1989) : The Quality of Life: Valuation in Social Research, Sage Publications, New Delhi.

MINOR COURSES

GROUP I

Programme	B. Sc. Family and Community Science				
Course Title	Human Nutrition				
Type of Course	Minor				
Semester	I				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basics in Science				
Course Summary	Students obtain depth on the study of major nutrients and Gain knowledge regarding functions and sources of these nutrients Develop competence for undertaking nutritional investigations.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Demonstrate a comprehensive understanding of basic concepts in nutrition and interpret relation between food, nutrition and health.	U	C	Instructor-created exams / Quiz
CO2	Identify and analyze functions, dietary sources and clinical manifestations of deficiency or excess of important nutrients.	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Demonstrate healthy cooking practices and minimizing nutrient losses.	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Apply various methods for enhancing nutritional quality of food.	U	C	Instructor-created exams / Home Assignments
CO5	Identify and apply the principles from the various factors of foods and related disciplines to solve	Ap	P	One Minute Reflection Writing assignments

	practical as well as real world problems .			
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Basic Concepts in Food and Nutrition		5	8
	1	History and Definition of Nutrition	1	
	2	Basic terms used in study of food and nutrition		
	3	Understanding relationship between food, nutrition and health	1	
	4	Visible symptoms of good health		
	5	RDA – definition ,Reference man and reference woman		
	6	Functions of food-Physiological, psychological and social	2	
	7	Food groups	1	
II	Nutrients		20	43
	8	Energy- Functions, sources and concept of energy balance.	2	
	9	Vitamins – functions and Classification	2	
	10	Vitamin A and D – functions, sources, requirements, deficiency disorders	2	
	11	Vitamin C, E and K - functions, sources, requirements, deficiency disorders	3	
	12	Vitamins B (Thiamine, Riboflavin, Niacin, folic acid and vitamin B12) – functions, sources, requirements, deficiency	3	
	13	Minerals – Introduction, basic functions and classifications	4	
	14	Minerals – Calcium, Iron, Zinc and Iodine	4	
III	Macronutrients and their metabolism		10	31
	15	Carbohydrates- Functions, metabolism- glycolysis, TCA cycle, and its energetics	4	
	16	Proteins- Functions, metabolism - Deamination, Transamination and Decarboxylation.	3	
	17	Lipids- Functions, metabolism-Beta oxidation and ketone body formation.	3	
	18	Water – functions, requirements, distribution, composition of body fluids, water imbalance, dehydration, water and electrolyte mechanism		
IV	Methods of Cooking		10	16

	19	Different methods of cooking and ways to improve nutrient retention or improve nutritional quality.	2	
	20	Dry, moist, frying and microwave cooking	3	
	21	Advantages, disadvantages and the effect of various methods of cooking on foods	3	
	22	Preventing losses of nutrient during cooking	2	
V	Open Ended Module- Practical		30	
	18	Improving nutritional quality of diets by Food synergy, Germination, Fermentation, Fortification and Genetic Modification of foods	2	
	19	Weights and measures; preparing market order and table setting	2	
	20	Food preparation, understanding the principles involved, nutritional quality and portion size- Cereals: Boiled rice, pulao, chapati, paratha-plain/stuffed, poori, pastas Pulses: Whole, dehusked, pulse curry Vegetables: Dry preparation, vegetable curry	7	
	21	Food preparation, understanding the principles involved, nutritional quality and portion size- Milk preparations: Kheer, porridge, custard Egg preparations: Boiled, poached, fried, scrambled, omelette	7	
	22	Soups and Salads- Plain and cream soups, salads and salad dressings	5	
	23	Bakery and Confectionery- cakes, biscuits.	7	

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	2	3	3	-	2	2	2	2	1	2	3	3
CO 2	1	1	2	3	-	2	2	2	2	1	2	1	3
CO 3	2	3	3	3	-	3	2	3	1	1	2	2	3
CO 4	2	2	3	3	-	2	2	2	2	1	2	3	3
CO 5	2	3	3	3	-	3	2	3	1	1	2	2	3

Correlation Levels:

Level	Correlation
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-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

Reference Books:

5. Essential of food & Nutrition –Vol. 1 M. Swaminathan, Bappco, Bangalore.
2. Nutrition Science- Srilakshmi. B, New Age International Publishers, 8th edition, 2023.
6. Normal and Therapeutic Nutrition- Corinne. H.Robinson & Marilyn Lawler 4. Contemporary Nutrition - Gordon M. Wardlaw, Paul Insel et, al., (2000) Mosby,Chicago.
9. Nutrition- concepts and controversies- Eleanor Whitney –Eighth Edition (2000)
10. Basic principles of Nutrition- Seema Yadav, First edition (1997)
11. Essentials of Nutrition and Diet therapy -Sue Rodwell Williams, fifth edition, Times Mirror Mosby College Publishing, 1990.
12. Understanding Nutrition -Whitney P.N. and Roes S.R., West Publication Co, 1996.

Programme	B. Sc. Family and Community Science				
Course Title	DIET AND HEALTH				
Type of Course	Minor				
Semester	II				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basics in Science				
Course Summary	To enable the students to Understand the role of nutrition in different conditions and to develop competency in planning diets to meet the nutritional requirements of different socioeconomic levels.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the nutritional demands in various stages of life cycle.	U	C	Instructor-created exams / Quiz
CO2	Acquire skills in planning adequate meals in different stages of life cycle to maintain health	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Assess nutrition issues and conditions and also recommend nutrition intervention and support to promote the health and well being.	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Critically assess nutritional requirements and nutritional health status of an individual.	U	C	Instructor-created exams / Home Assignments
CO5	Design food plans and assess the adequacy of diets to meet the nutritional needs of humans at various stages of life cycle	Ap	P	Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Nutrition and diet in health, growth and health monitoring		7	12
	1	Vital link between nutrition and health. Review –concept of adequate nutrition, and malnutrition.	2	
	2	Different food groups – guide in menu planning. Balanced diets.	2	
	3	Growth Monitoring- Importance, Growth Chart- ICDS, WHO.	2	
	4	Immunization Schedule	1	
II	Nutrition in pregnancy, nutrition in lactation, nutrition in infancy and nutrition in preschool age		14	31
	5	Physiological changes during Pregnancy, Nutritional need during Pregnancy, Maternal Nutrition and fetal outcome.	2	
	6	Complications of pregnancy, Management of High risk Pregnancies.	1	
	7	LBW babies – causes and complications, tests during pregnancy, prenatal and postnatal care.	2	
	8	Physiology of lactation, Malnutrition- effects on milk and effects on mothers.	2	
	9	Nutritional requirement and dietary management during lactation period.	1	
	10	Nutritional status of the infants, rate of growth as the indicator.	1	
	11	Nutritional allowances for the infants, breast feeding Vs formula feeding, food square, weaning foods suitable for infants, feeding the premature infants and LBW infants, interventions to prevent malnutrition.	2	
	12	Growth and development of preschool children, food habits and nutrient intake of preschool children. Dietary allowances – supplementary foods.	2	
	13	Nutritional problems and Interventions to prevent malnutrition.	1	
III	Nutrition during school age, nutrition during adolescence, nutrition for the adults and nutrition in old age		14	43
	14	Physical development, nutritional status of school going children, food habits, nutritional requirements, nutrition and academic performance, Nutritional disorders, interventions to prevent malnutrition.	3	
	15	Physical, physiological and psychological changes in adolescents, sexual maturity rating. Nutritional needs, Nutritional Problems, changes needed to prevent malnutrition.	3	
	16	Nutrition for the adult-Nutritional requirements according to the mode of activity. Nutrition and health of women-general nutritional problems of women, anemia, osteoporosis, pre and post menopausal syndrome, hormonal changes during menopause	3	
	17	Infertility –risk factors, prevention, methods of detection.	2	
	18	Theories of ageing – physiological changes during ageing, changes in body composition, techniques for assessing body composition and Nutritional requirement and Dietary Modifications.	3	
	IV	Nutrition in special events		10
19		Sports nutrition – Energy systems, nutritional requirements, carbohydrate loading, role of water and electrolytes, ergogenic aids.	2	
20		Nutrition in high altitude	2	
21		Nutrition in Disaster Management- requirements, major nutritional deficiency diseases in emergency monitoring assessment, surveillance of	3	

		nutritional status and Relief measures in emergencies		
	22	Space nutrition – space food formulation	3	
V	Open Ended Module- Practical		30	
	1	Preparation and serving the planned menu for men and women	2	
	2	Nutritional needs of adults (men and women) – In relation to occupation, low cost balanced food.	3	
	3	Nutrition during Old Age - Physiological changes in ageing	2	
	4	Psycho-social and economic factors affecting eating behavior. Nutritional problems of aged and their management	4	
	5	Visit to old age home	1	
	6	Preparation of diet for old age.	2	
	7	Standardization of portions for cooked food.	3	
	8	Planning and preparing diet for infants and preschool children	2	
	9	Packed lunch planning for school going children.	2	
	10	Menu planning for adolescent girls and boys. Calculation of nutritive value of the prepared menu	3	
	11	Planning a low cost balanced menu for a pregnant and lactating mother and display.	3	
	12	Calculation of nutritive value of the prepared menu	3	

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	3	2	-	1	3	2	1	1	1	2	3
CO 2	2	3	3	2	-	3	3	2	1	1	1	2	3
CO 3	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 4	1	3	3	2	-	3	3	2	1	1	1	2	3
CO 5	1	3	3	2	-	3	3	2	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCES

- 1.Srilakshmi, B. (2013), Dietetics, New Age International (P) Ltd., New Delhi.
- 2..SunetraRoday (2017). Food Science and Nutrition, Oxford University Press, New Delhi.
3. Human Nutrition and Dietetics- Davidson S Passmore R, Brock JP, ELBS and Churchill, Livingstone.
- 4..Fundamentals of foods and Nutrition - Mudambi SR and Rajagopal M Y, Wiley Eastern Ltd.
- 5.ICMR- Nutritive value of Indian Foods, 2020.
- 6.Shakuntala Manay, Shadaksharaswamy. M (2013) Foods, Facts and Principles, New Age International Pvt Ltd Publishers, 2nd Edition) Ltd., New Delhi. □
7. Mahtab, S, Bamji, Kamala Krishnasamy, Brahmam, G.N.V. (2012)Text Book of Human Nutrition, Third Edition, Oxford and IBH Publishing Co. P. Ltd., New Delhi.

Programme	B.Sc. Family and Community Science				
Course Title	NUTRITION COUNSELLING				
Type of Course	Minor				
Semester	III				
Academic Level	200-299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basics in Diet and Nutrition				
Course Summary	To enable the students to understand the psychology of the patient, to develop diet counselling skills and Develop humanistic approach towards patients.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understanding the diet counseling skills and acquaint them with basic principle.	U	C	Instructor-created exams / Quiz
CO2	Determine and translate nutrient needs into menus for individuals and groups across the lifespan, in diverse cultures and religions.	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Students will be able to interpret and apply nutrition concepts to evaluate and improve the nutritional health of individuals with medical conditions	Ap	P	Seminar Presentation / Group Tutorial Work
CO4	Produce oral and written communications for a group education session.	U	C	Instructor-created exams / Home Assignments
CO5	Interview individuals for diet histories and Counsel individuals.	Ap	P	Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Communication in nutrition counseling		10	12
	1	Definition and significance of communication	1	

	Communication skills, Organizational communication and training Professional communication and team collaboration.		
2	Dietitian – Classification, code of ethics, responsibilities.	1	
3	Computer application - Use of computers by dietitian, dietary computations, dietetic management, education/ training, information storage and administrations.	2	
4	Diet Counselling-meaning, significance, process, types.	1	
5	Goals of counselling, individuals, group and family counseling.	1	
6	Basic sequence in counselling.	1	
7	Communication process in counselling and linguistics in clinical dietary practices	2	
8	Problems in communication.	1	
II	Designing and counselling plans	14	43
9	Techniques of obtaining relevant information- Retrospective information, Dietary Diagnosis, Assessing food and nutrient intakes, Lifestyles, Physical activity, Stress, Nutritional Status	4	
10	Correlating Relevant Information and identifying areas of need.	3	
11	The Care Process - Setting goals and objectives short term and long term, Counselling and Patient Education, Dietary Prescription.	4	
12	Motivation - Hospitalized patients and Outpatients.	3	
III	Counselling approaches and counselling application	14	31
13	Counselling Skills Approaches to counselling – Psycho analytic approach, Behaviouristic, Humanistic approach Pre – Helping phase: Rapport building skills, Attending and listening skills.	5	
14	Stage I skills: Empathy, respect, Genuineness and concreteness.	3	
15	Stage II skills: Advanced empathy, self-disclosure, Immediacy and Confrontation.	3	
16	Stage III skills: Goal setting, Action plan Programme and Brainstorming.	3	
IV	Implementation and evaluation aspects of counseling	7	12
17	Teaching aids used by dietitians- charts, leaflets, posters etc.	1	
18	Preparation of teaching material for patients suffering from Digestive disorders, Hypertension, Diabetes, Atherosclerosis & Hepatitis and cirrhosis	2	
19	Nutrition counselling for diabetes mellitus	1	
20	Nutrition counselling for cardiac problems and hypertension	1	
21	Nutrition counselling for obesity	1	
22	Ending counselling sessions	1	
V	Open Ended Module: Practicum	30	

		Open-Ended Exploration and Assessment:		
	1	Experience counselling session at diet care centres		
	2	Conduct counselling sessions		
	3	Peer evaluation- counselling sessions		
	4	Organize diet counselling centre in campus		
	5	Hands on Training by experts		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	-	-	-	-	-	1	-	-	-	-	-	-
CO 2	1	-	1	-	-	-	2	-	-	-	-	-	-
CO 3	-	-	1	-	-	-	-	1	2	-	-	1	-
CO 4	-	-	2	3	-	-	-	1	3	-	1	1	2
CO 5	-	-	1	-	-	-	-	1	1	-	1	1	1

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCES

1. Dick, L. (2013) Nutrition Counseling and Education Skill Development, Second Edition, Journal of Nutrition Education and Behavior, 45: 383-388.
2. Schiller, R.M., Miller, M., Moore, C., Davis, E., Dunn, A., Mulligan, K. & Zeller, P. (1998). Patients Report Positive Nutrition Counseling Outcomes. Journal of Academy of Nutrition and Dietetics, 98 (9): 977-982

3. Monk, A., Barry, B., McClain, K., Weaver, T., Cooper, N., Franz, M.J. Practice guidelines for medical nutrition therapy provided by dietitians for persons with non-insulindependent diabetes mellitus. *J Am Diet Assoc.* 1995 ;95:999–1006
4. Rhodes, K.S., Bookstein, L.C., Aaronson, L.S., Mercer, N.M., Orringer, C.E. Intensive nutrition counseling enhances outcomes of National Cholesterol Education Program dietary therapy. *J Am Diet Assoc.* 1996;96:1003–1010
5. Milkererr, J., Graves, J.S. Follow-up dietary counseling benefits attainment of intake goals for total fat, saturated fat, and fiber. *J Am Diet Assoc.* 1992;92:603–605.
6. Weese, N., Jones, J., Miller, M.A. Successful strategies for reimbursement of outpatient nutrition services. *J Am Diet Assoc.* 1993;93:458–459.

GROUP II

Programme	B. Sc. Family and Community Science				
Course Title	BASICS OF FOOD SCIENCE				
Type of Course	Minor				
Semester	I				
Academic Level	100 -199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	1. Basics in Science				
Course Summary	A course in Perspectives of Food Science will provide students with a comprehensive understanding the fundamentals of food , methods of food preparation, composition of different foods and principles of food preservation. This course will prepare students for careers in food production, quality assurance and research in the food industry.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Summarize the fundamentals of Food Science.	U	C	Instructor-created exams / Quiz
CO2	Identify the scientific principles underlying food preparation.	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Explain the structure, composition and nutritional quality of plant and animal foods.	R	C	Seminar Presentation / Group Tutorial Work
CO4	State the nutritional quality of different foods	U	C	Instructor-created exams / Home Assignments
CO5	Apply the food preservation	Ap	P	Practical

	techniques.			skills/Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Introduction to Food Science		5	16
	1	Definition, Classification of foods and Terms used in Food Science.	1	
	2	Health, Food, Nutrition, Nutrients: Macronutrients (Carbohydrates, Proteins and lipids) and Micronutrients (Vitamins and Minerals).	1	
	3	food groups (Basic food group system – (ICMR), My Healthy Plate, Balanced diet.	2	
	4	Functions of foods – Physiological, Psychological and Social Functions.	1	
II	Study of plant foods		25	43
	5	Study of Cereals Types, Composition , Nutritive value and products . Processing -parboiling - merits and demerits, cereal protein - gluten formation, cereal starch -structure, effect of cooking – dry and moist heat.	5	
	6	Study of Millets - Types, Nutritive value and Health benefits.	4	
	7	Study of Pulses -Nutritive value wet milling and dry milling, processing, germination and fermentation, advantages, Anti-nutritional factors (trypsin inhibitors, lathyrism), Common pulses used in India.	4	
	8	Study of Fruits- Nutritive and antioxidant value, pigments, flavour components, changes in fruits during ripening, storage of fruits.	3	
	9	Study of Vegetables - Classification, nutritive value, selection, vegetable cookery- loss of nutrients during cooking, conservation of	4	

		nutrients, pigments, effect of acid and alkali, Enzymatic browning- methods of prevention		
	10	Study of Nuts, oil seeds, Spices and condiments Types and Nutritive Composition and health benefits	5	
III	Study of animal Foods		10	31
	11	Study of Milk and Milk Milk and milk products - Composition and nutritive value, pasteurization and homogenization– advantages, types of milk and milk products.	3	
	12	Study of Meat- Structure, composition and nutritive value, post mortem changes - rigor mortis, effect of cooking on meat, types of meat and products.	2	
	13	Study of Fish - Classification, nutritive value, selection, fish spoilage and preservation	2	
	14	Study of Eggs - Structure and nutritive value, evaluation of egg quality, deterioration in egg quality during storage, egg white foam -stages, factors affecting foam formation, culinary role of eggs, designer eggs.	3	
IV	Food preservation		5	8
	18	Principles and objectives	1	
	19	Methods of food preservation	1	
	20	Preservatives	1	
	21	Dehydration	1	
	22	Irradiation	1	
V	Open Ended Module: Related experiences		30	
		Grouping of foods Stages of sugar cookery Evaluation of gluten content in a flour Components of an egg by weight Stages of egg white foam formation Changes of meat during cooking		

		Effect of cooking on vegetable pigments		
		Methods to prevent enzymatic browning in fruits		
		Non enzymatic browning in foods		
		Food preservation techniques -any 2		
		Maintain a record		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	3	1	3	1	2	3	3	1	1	1	2	3
CO 2	2	3	2	2	1	-	3	-	2	1	1	2	3
CO 3	2	2	2	2	-	-	2	-	2	1	1	2	3
CO 4	3	2	2	1	-	-	3	2	1	1	1	2	3
CO 5	2	3	3	3	2	-	3	3	1	1	1	2	3

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References

1. Mudambi, S.R and Rajagopal, M.V. (2001), Fundamentals of Foods and Nutrition, New Age International Publishers, New Delhi
2. Srilakshmi B. (2008), Food Science, New Age International Publishers, New Delhi

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4. Kalia M. (2002), Food Analysis and Quality Control, Kalyani Publishers, New Delhi.
5. Frazier, W.C. and Westhoff, D.C., (2008), Food Microbiology, Fourth Edn., Tata McGraw-Hill Publishing Co. Ltd, New Delhi

SUGGESTED READINGS

1. Sari E., (2006), Nutrition in Public Health, a handbook for developing programs and services, Second edn, Jones and Bartlett publishers, Sudbury.
2. Potter, N. N and Hotchkiss, J.H., (1996), Food Science, Fifth Edn, CBS Publishers, New Delhi.
3. Marwaha, K (2007), Food Hygiene, Gene-Tech Books, New Delhi.

Journal of Food Science and Technology, Association of Food Scientists and Technologists CFTRI, Mysore.

Programme	B. Sc. Family and Community Science				
Course Title	FOOD PRESERVATION				
Type of Course	Minor				
Semester	II				
Academic Level	100 -199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basics in Food Science				
Course Summary	This course helps us to understand what is possible in the world of food preservation; then understanding the factors that cause food to deteriorate. Course also helps to study the different ways foods can be preserved from chemical treatments, to changing the environmental conditions (temperature, moisture content, etc.) Food preservation is something that should be understood by anyone who handles food; whether for their own use, or on a commercial basis.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the principles and methods of preservation	R	C	Instructor-created exams / Quiz
CO2	Understand the stages of sugar cookery, quality of pectin and acidity in the development of preserved food products	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Understand to formulate food based products	R	C	Sensory evaluation
CO4	Explore the principles of preservation in fruits and vegetables based products.	U	C	Instructor-created exams / Home

				Assignments
CO5	Acquire skills to prepare preserved products and develop new products with retention of quality.	Ap	P	Practical assessment
CO6	Evaluate food processing industries	An	P	Assessment of reports
<p>* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)</p>				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	Concept of Food Preservation		10	12
	1	Importance of Food Preservation	1	
	2	Types of Food spoilage by Micro organisms and by Enzymes	1	
	3	Basic Principles of Food Preservation	2	
	4	Food preservatives- Use of Salt, Acid, Sugar, natural food preservatives and artificial preservatives	2	
	5	Starting a food preserving unit Product	2	
	6	Promotion strategies and marketing skills	2	
II	Preparation of dehydrated products		15	43
	7	Methods of drying &dehydration , different types of driers , freeze drying-lyophilisation , packing & storage	2	
	8	General tips with drying foods	1	
	9	Principles, methods, commonly preserved foods by low temperature	2	
	10	Meaning and needs of freezing foods Types of Freezing and managing freezers	2	
	11	Guidelines for types of frozen foods-Fruits, Vegetables, fish, meat and poultry Smoking foods	3	
	12	Principles, methods, commonly preserved foods by High temperature – pasteurisation, canning	2	
	13	Food Irradiation Vacuum Packing	2	

III	Preservation by Using Sugar		15	31
	14	Stages in Sugar Cookery	3	
	15	Sugar Concentrates – Principles of Gel Formation	3	
	16	Role of Pectin in Preserved foods	3	
	17	Evaluation of pH, Acidity and pectin quality	6	
IV	Preservation by Using Chemicals and salt		5	12
	18	Preparation and Preservation of Fruit Juices, RTS	1	
	19	Pickling – Principles Involved and Types of Pickles	1	
	20	Chemical Preservatives – Definition, Role of Preservation	1	
	21	Permitted Preservatives, FSSAI guidelines	1	
	22	Common fermented foods- wine and cheese making	1	
	V	Open Ended Module: Practical		30
23		Demonstrate drying methods for the selected products -Rice/ Wheat Roots and Tubers/ Fruits/ Vegetables		
24		Reconstitution of dried vegetables and Preparation of salted/dehydrated/preserves		
25		Preparation of Jam/ Jelly, Marmalades/ Sauce and Squash Preserves Candied/Glazed/Crystallized Fruits/Toffee		
26		Preparation and Preservation of Fruit Juices		
27		Blanching of fruits & Vegetables		
28		Development of a preserved food product and labelling according to FSSAI norms.		
29		Visit to Food Industries(at least two)		

Mapping of COs with PSOs and POs :

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	-	-	1	-	-	2	-	1	-			

CO 2	-	3	-	-	-	-	1	-	1	-	1	-	2
CO 3	-	1	3	1	-	-	1	-	-	-	1	-	1
CO 4	1	-	2	3	-	-	1	-	1	-	-	-	1
CO 5	-	-	-	-	-	-	-	-	-	-	-	-	-
CO 6	-	-	-	3	-	-	-	-	-	-	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Regular lectures, demonstrations, Exercises on observation and follow up with group discussions, case studies, ICT enabled teaching and learning experiences in terms of video lessons and documentary film shows. Hands on experience in laboratory and in food industries. Assignments (20%)
- Final Exam (70%)

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1. Adebo O., Chinma C., Obadina A., Soares A. , Panda S., Ren-You Gan (2023) Indigenous Fermented Foods for the Tropics,1st Edition , Elsevier Publication.
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4. Shafiur, Rahman, M. (2007), Handbook of Food Preservation, 2 nd edition, CRC press, New Delhi.
- 5.Srivastava R.P. (2012),Fruit and vegetable preservation – Principles and Practices, International Book Distributing Co., (IBDC), New Delhi.

Programme	B.Sc. Family and Community Science				
Course Title	FOOD TOXICOLOGY				
Type of Course	Minor				
Semester	III				
Academic Level	200-299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Pre-requisites	Basics in Science				
Course Summary	Food Toxicology is a specialized course designed to provide students with an understanding of the chemical, biological, and physical hazards present in food and their potential impact on human health.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	To understanding of various contaminants that can occur in food, including chemical, biological, and physical hazards.	U	C	Instructor-created exams / Quiz Practical
CO2	Acquire knowledge of fundamental toxicological principles and concepts relevant to food safety assessment.	Ap	P	Assignment / Observation of Practical Skills Seminar
CO3	Interpret and apply regulatory frameworks such as Maximum Residue Limits (MRLs), Acceptable Daily Intakes (ADIs), and Good Manufacturing Practices (GMPs) in assessing and managing food safety risks.	Ap	P	Presentation / Group Tutorial Work
CO4	Enhance their ability to critically evaluate scientific literature, risk assessments, and regulatory decisions related to food toxicology.	E	C	Instructor-created exams / Home Assignments
CO5	Assess exposure levels, characterize hazards, and quantify risks associated with different contaminants.	Ap	P	Presentation / Group Tutorial Work
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I		INTRODUCTION TO TOXICOLOGY	5	10

	1	Definition and importance- -	1	
	2	scope – basic divisions	1	
	3	Goals	1	
	4	Basic concept of Toxicology	1	
II	NATURALLY OCCURRING TOXICANTS IN VARIOUS FOODS		10	14
	5	Toxicants in Plant foods	3	
	6	Seafood toxins	3	
	7	Antivitamins- Radioactive metals in foods	2	
	8	Toxic minerals- other inorganic compounds occur in Food & Water	2	
III	TOXICANTS OF PUBLIC HEALTH HAZARD		20	43
	9	Chemical contaminants- pesticide residues	2	
	10	types of pesticides- automobile emissions(CO, SO ₂ , NO),	3	
	11	Hydrocarbons	1	
	12	photochemical products	3	
	13	- heavy metals(Mercury, Arsenic, Lead, Cadmium, Aluminium, Tin),	3	
	14	Food additives- types-	3	
	15	health hazards- radioactive substances	1	
	16	-kinds of radiators- sources of radiations-	1	
	17	- biological effect of radiations	3	
IV	XENOBIOTICS & CARCINOGENS		10	31
	18	Absorption, Assimilation, utilization and excretion of xenobiotics-	2	
	19	Biotransformation- Phase I and Phase II-Types- Mechanism of chemical carcinogens-mutagens and Teratogens-	3	
	20	SUBSTANCES INTENTIONALLY ADDED TO FOODS - Antioxidants-	2	
	21	colors-stabilizers	1	
	22	GM Foods and their safety	2	
V	Open Ended Module- Practicum		30	
	1	Industrial visit and report writing	6	
	2	Organize an Awareness class in community based on food toxication and adulteration Identification of adultrants in food Presentation on studies on food toxicants	6	

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	1	2	3	2	-	2	3	2	3	1	2	3	1

CO 2	1	3	2	2	-	2	2	2	3	1	2	3	1
CO 3	1	3	3	3	-	3	3	3	2	1	2	3	1
CO 4	1	2	3	2	-	2	3	3	3	2	2	3	1
CO 5	1	2	3	3	-	2	2	2	2	1	2	3	1

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

REFERENCES:

- 1.Helferich, W., and Winter, C.K “Food Toxicology”,. CRC Press, LLC. Boca Raton, FL. 2007.
- 2.Shibamoto, T., and Bjeldanes, L. “Introduction to Food Toxicology”, 2009, 2ndEdition. Elsevier Inc., Burlington, MA.
- 3.Watson, D.H. “Natural Toxicants in Food”, CRC Press, LLC. Boca Raton, FL1998.
4. Duffus, J.H., and Worth, H.G. J. “Fundamental Toxicology”, The Royal Society of Chemistry,2006.
- 5.Stine, K.E., and Brown, T.M. “Principles of Toxicology”, 2ndEdition. CRC Press. 2006.

VOCATIONAL MINOR COURSES
GROUP I

Programme	B. Sc. Family and Community Science				
Course Title	BASIC BAKERY MANAGEMENT				
Type of Course	Vocational Minor				
Semester	I				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Course Summary	The course covers essential aspects of running a successful baking industry, including baking principles, processing of various baking products and their quality control, bakery layout, etc.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand with a solid foundation in wheat milling, bakery principles, starch modifications, and rheology.	U	F	Instructor-created exams / Quiz
CO2	Well-equipped with theoretical knowledge in bread, biscuit, and cake production, demonstrating the ability to troubleshoot common issues, and implement quality control measures.	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Demonstrate comprehensive knowledge of production processes, quality control measures, and distinctions between products.	AP	P	Instructor-created exams / Home Assignments
CO4	Possess the skills and knowledge required to design and manage a bakery facility effectively, addressing key aspects such as layout, quality control, waste	Ap	P	Seminar Presentation / Group Tutorial Work

	management, organizational structure, and adherence to food safety principles.			
C05	Well-prepared for careers in the baking industry, equipped with practical skills, and the ability to apply theoretical concepts to address challenges in the field of baking	AP	P	Viva Choice
<p>* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)</p>				

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I	Introduction To Baking		10	15
	1	Wheat-Milling of wheat	1	
	2	By-products of milling, and its FSSAI specifications- whole wheat flour, Maida, semolina.	2	
	3	Introduction & scope of Bakery, Bakery terms	1	
	4	Baking- Principle, classification of baked goods, baking temperature for different baked goods.	2	
	5	Starch modifications- Gelatinization, Retro gradation, Dextrinization of starch.	2	
	6	Concept of rheology	2	
II	The technology of Bread, Biscuit And Cake		18	37
	7	Bread: Role of ingredients	2	
	8	Bread making-sponge and dough method, faults and remedies	4	
	9	Staling of bread, Bread diseases – Rope and mold-causes and prevention. Preservatives used in bread.	3	
	10	Biscuit-Processing, faults, and remedies.	3	
	11	Cake-Processing, Faults, and remedies.	2	
	12	Icing- types	1	
III	The technology of Cookie, Cracker, Pastry, Pasta and Wafer		8	18

	13	Cookie- Principles, methods of mixing, Types.	2	
	14	Crackers-Role of ingredients, cream cracker, savory cracker, matzos and water cracker	2	
	15	Pastry-Short crust, puff pastry, flaky pastry.	2	
	16	Wafer: Raising agents, flour for wafers, production process, maturing wafers	2	
	17	Pasta-Technology and FSSAI specifications	1	
IV	Bakery Layout And Design		9	28
	18	Selection of site, equipment, layout design floors, foundation, walls, doors, windows, drains, etc., ventilation, fly control, mold prevention, and illumination	2	
	19	Quality control of raw materials and Quality control of finished products	1	
	20	Waste Management	2	
	21	Organization chart of the Bakery	1	
	22	HACCP Concept in the Bakery Industry	2	
V	Practicals & Industrial Visit		30	
	1	- pH Value of flour - The water absorption power of flour - Determination of gluten content of flour - Dough raising the capacity of flour - Pelshanke value of flour - Sedimentation value of flour, - Determination of amylase activity- falling number method	6	
	2	-Preparation of Bread- Straight dough & sponge dough method -Preparation of biscuit -Preparation of cookies - Preparation of cake -sponge cake and decoration	6	
	3	Industrial Visit to the Baking Industry and its presentation	3	

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PSO 5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	3	1	1	2	-	3	1	2	1	2	-
CO 2	2	3	3	3	2	-	3	2	2	3	2	1
CO 3	2	3	3	3	2	-	3	2	2	2	2	1

CO 4	3	2	3	3	2	-	2	1	1	1	2	-
CO 5	3	3	3	3	3	-	3	2	2	3	2	1
CO 6	-	-	-	-	-	-	-	-	-	-	-	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment/ Discussion / Seminar
- Midterm Exam
- Final Exam (70%)

REFERENCES

- Kent NL 1983 Technology of cereals Pergamon press
- E J Pyler. Bakery science Technology. Vol I, II. Sosland Publications.
- Yogambal Ashokkumar, Textbook of Bakery and Confectionery, Second edition
- Stanley P, Cauvain, Linda S Young (2008). Baked Products: Science Technology and Practice, 1st Edition, John Wiley & Sons Publishers.
- Hui, Y.H, Bakery products, Science and Technology , Black Well publishing, 2006
- W.P. Edwards, The Science of Bakery Products, RSC Publishing, 2007

Programme	B.Sc. Family and Community Science				
Course Title	FRUIT AND VEGETABLE PROCESSING				
Type of Course	Vocational Minor				
Semester	II				
Academic Level	100 -199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Course Summary	The course focuses on the spoilage in fruits and vegetables and the reason for the spoilage; prepare and pack perishables for storage and then store them under refrigerated conditions with safety precautions.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Acquaint proper handling technologies for fruits and vegetables to reduce post-harvest losses.	U	C	Instructor-created exams / Quiz
CO2	Acquaint principles and methods of preservation of fruits and vegetables	Ap	P	Practical Assignment / Observation of Practical Skills
CO3	Understand the basic functions and different levels of food packaging.	U	P	Seminar Presentation / Group Tutorial Work
CO4	To understand various processing technologies involved in the fruits and vegetable industries.	U	C	Observation of Practical Skills / Home Assignments
CO5	To understand various aspects of quality assessment in fruit and vegetable processing.	U	P	Group Tutorial Work/ Practical Skills.
<p>* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)</p>				

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I	Primary Processing of fruits		10	28
	1	Introduction to fruits and vegetables, classification of fruits and vegetables, Composition of fruits and vegetables, factors effecting composition of fruits and vegetables.	2	
	2	Grading, sorting, cleaning, washing, peeling, slicing, and blanching.	2	
	3	Dehydration of fruits and vegetables using various drying technologies like sun drying, solar drying.	2	
	4	Dehydration of fruits and vegetables using, osmotic, tunnel drying	2	
	5	Fluidized bed drying and freeze-drying.	2	
II	Processing Juices		15	21
	6	Processing of juices: Processing of vegetable juice, Processing of fruit juice	3	
	7	Manufacturing of fruit juice concentrates	3	
	8	Manufacturing of puree, and pastes.	2	
	9	Preparation of jam, jellies and marmalades	2	
	10	Pectin chemistry, Common preservatives used in juices, jams, and jellies	3	
	11	Defects in jams, jellies, and pickles.	2	
III	Preserved fruits		5	18
	12	Preparation of preserve and candied fruits,	1	
	13	Pickling of fruits and vegetables.	1	
	14	Waste management in fruits and vegetable processing unit.	1	
	15	Canning of fruits	1	
	16	Canning of Vegetables	1	
IV	Packing and Storage of Fruits and Vegetables		15	31
	17	Definition, Functions of packaging	3	
	18	Containment, Protection, Preservation, Promotion, Convenience, Communication.	3	
	19	Requirements of the effective package.	3	
	20	Types of food packaging- primary, secondary, and tertiary packaging	3	
	21	Re-packaging of Fresh fruits and vegetables.	1	
	22	Storage techniques for fresh fruits and vegetables.	2	
V	Practical experience and Industrial Visit		30	
	1.	Determination of ascorbic acid, acidity, total soluble solid (demo)	27	
	2.	Preparation of dehydrated vegetables.		
	3.	Estimation of salt in pickles		
	4.	Test for checking the adequacy of blanching		
	5.	Preparation and quality evaluation of fruit jam, fruit jelly, fruit		

marmalade 6. Estimation of tannin 7. Determination of ascorbic acid 8. Estimation of pectin content 9. Lye peeling methods in fruits and vegetables		
Industrial visit	3	

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	3	1	3	2	-	2	3	3	1	2	2
CO 2	2	3	2	3	3	-	1	2	3	2	2	-
CO 3	2	3	2	3	2	-	1	-	2	1	1	1
CO 4	1	3	2	3	3	-	-	1	2	3	3	1
CO 5	1	3	2	3	2	-	-	1	2	3	1	2
CO 6	2	1	2	3	-	-	-	2	1	3	1	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References:

1. Fennema R O (1975), Physical principles of food preservation, Marcel Dekker Inc
2. K. Sanjeev & Srivastava R.P (2016), Complete Technology Book on Processing Dehydration Canning and Preservation of Fruit & vegetables, 3rd Edition, NIIR Project Consultancy Services.
3. https://youtube.com/playlist?list=PLX0IMDW1mh_-376zhKFjDnVr_uzhOQr5W&si=ByZteznP_3YISfK4 - Processing of fruits and vegetables

4. <https://youtu.be/UBk1oLrIQ70?si=WDApr1uHMq3WNQ7B> - Canning of fruits and vegetables
5. Food Facts and Principles by Shakuntala Manay, Third revised edition.
6. Tapia de Daza, M.S., Alzamora S.M., and Welti, J. 1996. Combination of preservation factors applied to minimally processing of foods. Critical. Reviews in Food Science. And Nutrition.

Programme	B.Sc. Family and Community Science				
Course Title	DAIRY PROCESSING				
Type of Course	Vocational Minor				
Semester	III				
Academic Level	200-299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Course Summary	The course focuses on milk production science and aspects of quality control. Additionally, the course covers dairy products, maintenance, and research at a dairy plant.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	To inculcate knowledge regarding milk production.	U	C	Instructor-created exams / Quiz
CO2	Understand various dairy products and their processing techniques.	U	P	Practical Assignment / Observation of Practical Skills
CO3	Understand the quality control measures applied in dairy industries	U	P	Seminar Presentation / Group Tutorial Work
CO4	To understand the processing and storage of dairy products.	U	C	Observation of Practical Skills / Home Assignments
CO5	Understand various dairy engineering aspects.	U	P	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I	Introduction		10	28
	1	Introduction to milk - Definition, sources, and composition of milk, factors affecting the composition of milk	2	
	2	Physiochemical properties of milk, grading of milk definition and	3	

		types of grades, collection, and transportation of milk,		
	3	Introduction to Cleaning in-place (CIP) system - cleaning procedure, cleaning efficiency, Methods of cleaning in the food industry,	3	
	4	Cleaning solutions – Detergents, Sanitizers. SIP system of dairy plant, Personal hygiene in dairy plant	2	
II	Processing of market milk		15	21
	5	Flowchart of milk processing, Reception, and Different types of cooling systems.	3	
	6	Clarification and filtration process, standardization- Pearson's square method,	3	
	7	Pasteurization-LTLT, HTST.	2	
	8	UHT process- continuous pasteurizer,	2	
	9	Sterilisation and Homogenisation,	2	
	10	Cream separation- centrifugal cream separator, bactofugation.	3	
III	Special milk		10	18
	11	Skim milk and reconstituted milk.	2	
	12	Evaporated milk and flavoured milk,	2	
	13	Condensed milk	2	
	14	Standardized milk	2	
	15	Toned milk and Double toned milk	2	
IV	Indigenous and Fermented milk products		10	31
	16	Methods for the manufacture of butter and cheese	2	
	17	Methods for the manufacture of ice cream and ghee	2	
	18	Methods for manufacture of khoa, Channa.	1	
	19	Methods for manufacture of paneer, shrikhand	1	
	20	Processing Dried milk- whole milk	2	
	21	Processing of Skim milk powder	1	
	22	Instantiation of milk	1	
V	Practical experience and Industrial Visit		30	
		1. Determination Of Acidity (Titrable Acidity) Of Milk. 2. Determination Of The Specific Gravity Of Milk. 3. Clot On Boiling Test For Milk. 4. MBRT 5. Alizarin Test 6. Determination Of Addition Of Starch In Milk 7. Preparation Of Flavoured Milk 8. Preparation Of Ghee 9. Preparation Of Khoa 10. Determination Of Ash 11. Preparation Of Peda 12 Preparation Of Butter	27	
		Industrial visit	3	

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	3	2	2	3	-	1	-	2	2	3	1
CO 2	1	2	3	3	2	1	3	2	1	-	2	1
CO 3	-	2	3	2	2	1	2	2	1	-	2	2
CO 4	3	2	2	3	3	2	3	1	2	2	3	-
CO 5	2	2	3	3	1	2	2	2	3	1	2	2
CO 6	1	2	3	3	1	2	1	2	2	2	3	-

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Practical exam (20%)
- Final Exam (70%)

References:

1. Joshi V K (2015), Indigenous Fermented Foods of South Asia, 1st edition, CRC Press.
2. Alan H. V and Jane P S (2013), Milk and Milk Products: Technology, chemistry, and microbiology, Springer Science & Business Media Publishers.
3. Outline of dairy technology, Sukumar De, 46th impression 2019.
4. <https://youtu.be/mJ-VgTW9KK8?si=VEivRtK9mo2wCz3l> - Steps in pasteurisation of milk.

5. https://youtu.be/Jv5p7o-7Pms?si=aLw_3bavOqs4tbOr – Working of plate heat exchangers in dairy industry.
6. Dairy processing and quality assurance – Ramesh .C Chandan, Arun Kilara, Nagendra P. Shah

Programme	B.Sc. Family and Community Science				
Course Title	FOOD PACKAGING AND LABELLING				
Type of Course	Vocational Minor				
Semester	VIII				
Academic Level	400 -499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Course Summary	To provide basic knowledge about trends and development in food packaging technologies and materials and to familiarize with the different materials and methods used for packaging. To understand the technology behind packaging and packaging materials				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the basic functions and different levels of food packaging	U	F	Instructor-created exams / Quiz
CO2	Develop knowledge in food deterioration, deterioration determination tests and control methods	U	C	Practical Assignment / Observation of Practical Skills
CO3	Understand the types and properties of different kinds of packaging materials used in food industries	An	C	Seminar Presentation / Group Tutorial Work
CO4	Develop knowledge in recent technology used in food packaging	U	F	Instructor-created exams / Home Assignments
CO5	Understand the labelling process and safety concerns in food packs	U	P	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I		Introduction to Packaging and deteriorative Reactions and shelf life foods	15	31

	1	Definition	1	
	2	Functions of packaging – Containment, Protection, Preservation, Promotion, Convenience, Communication	2	
	3	Requirements of effective package	2	
	4	Types of food packaging- primary, secondary, and tertiary packaging	1	
	5	Introduction to deteriorative Reactions in food	1	
	6	Factors affecting the deterioration of foods - physical changes, biological changes, chemical changes	2	
	7	Shelf life of foods	2	
	8	Intrinsic and extrinsic factors controlling the rate of reactions	2	
	9	Shelf life determination tests	2	
II	Packaging Materials and their properties		7	12
	10	Rigid containers- Glass, Wooden boxes, metal cans- Aluminium and tin plate containers	2	
	11	Semi-rigid containers- paperboard cartons, Flexible packaging- paper, plastic pouches- Low-density polyethylene, High-density polyethylene and Polypropylene	2	
	12	Packaging materials for dairy products, bakery, and confectionary, granular products, fruits and vegetables	3	
III	Special Packaging		8	12
	13	Aseptic packaging, Active packaging, Intelligent packaging	2	
	14	Modified atmospheric packaging and controlled atmospheric packaging	2	
	15	Shrink packaging, stretch packaging	2	
	16	Biodegradable packaging, Edible packaging, Tetrapacks	2	
IV	Labelling and safety concerns in food pack		15	43
	17	Printing process, inks, adhesives	2	
	18	labelling, coding- bar codes	2	
	19	Food packaging closures of glass and plastic containers	2	
	20	Legislative and safety aspects of food packaging	3	
	21	Machineries used in Food Packaging - Bottling machines, Cartoning systems, Seal and Shrink packaging machine; Form, Fill and Sealing machine (FFS).	3	
	22	Package testing- thickness – Paper density - Basis weight – Grammage - Tensile Strength - Gas Transmission Rate (GTR) - Water Vapour Transmission Rate (WVTR).	3	
V	OPEN ENDED MODULE		15	
	1	Visit to any food processing plant and analyse the following: - Packaging materials used - Special packaging involved - Labelling and coding		

		- Package testing		
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Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	3	-	2	1	2	3	-	1	-	-	-	1
CO 2	3	-	2	1	2	3	-	1	-	1	-	1
CO 3	3	-	2	1	2	3	-	2	-	-	-	2
CO 4	3	-	2	1	2	3	-	2	2	-	2	2
CO 5	3	-	2	1	2	3	1	2	-	2	2	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment / Discussion / Seminar
- Midterm Exam
- Final Exam (70%)

References:

1. Robertson G L (2013) Food Packaging: Principles and Practice, Third Edition, CRC Press.
2. Kadoya T (1991), Food Packaging, 1st edition, Academic press.
3. Robertson GL, Food Packaging – Principles and Practice, CRC Press Taylor and Francis Group, 2012
4. Paine FA and Paine HY, A Handbook of Food Packaging, Blackie Academic and Professional, 1992
5. Coles R, McDowell D, Kirwan MJ Food Packaging Technology. Blackwell, 2003
6. NIIR. (2003). Food Packaging Technology Handbook, National Institute of Industrial Research Board, Asia Pacific Business Press Inc.

GROUP II

Programme	B.Sc. Family and Community Science				
Course Title	SPICES AND PLANTATION CROPS				
Type of Course	Vocational Minor				
Semester	I				
Academic Level	100-199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Course Summary	This course provides a comprehensive overview of the processing techniques and quality control of spices and plantation crops.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understanding of spices, from their botanical origins to their culinary and medicinal uses, and being equipped with the knowledge and skills necessary to maintain and uphold the quality and integrity of spices in various industries.	U	C	Practical Assignment / Observation of Practical Skills
CO2	Possess a comprehensive understanding of major spices and their processing techniques,	Ap	P	Instructor-created exams / Quiz
CO3	Gain a profound understanding of spice oils and oleoresins, applications in food processing, and proficiency in various extraction methods	Ap	C	Seminar Presentation / Group Tutorial Work
CO4	Acquire a deep understanding of plantation crops, encompassing their chemistry, processing techniques, diverse products, and adherence to regulatory standards, preparing them for careers in the plantation industry and related sectors.	Ap	C	Instructor-created exams / Home Assignments

CO5	Prepare to enter the workforce, equipped with practical insights, industry knowledge, and an understanding of the operational dynamics specific to spices and plantation products.	Ap	P	Report
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Mks
I	INTRODUCTION TO SPICES		4	8
	1	Spices - Definition, Classification Chemical composition, Uses of Spices	1	
	2	Chemical composition, Uses of Spices	1	
	3	Quality control of spices, standards and FSSAI specifications	1	
	4	Adulteration of spices	1	
II	MAJOR SPICES		17	43
	5	Properties of major spices	1	
	6	Pepper - Refining and processing of pepper	1	
	7	Pepper products: - White pepper, dehydrated green pepper, Pepper oil, Oleoresin	3	
	8	Ginger - Curing, Bleaching, Grading	2	
	9	Ginger Products-Ginger oils, Ginger oleoresin, Dehydrated Ginger, Bleached Ginger	2	
	10	Chillies- Processing, Drying of chillies, quality attributes of chillies and paprika.	2	
	11	Turmeric - Curing, Grading, Turmeric powder, Essential oil, oleoresin	3	
	12	Cardamom- Drying, Bleaching, Grading, Cardamom products, Essential oil and oleoresins	3	
III	SPICE OILS AND OLEORESIN		10	31
	13	Spice Oils – concept, the importance of spice oils from spices and condiments like clove, cardamom, cinnamon, etc., application in food	3	

		processing		
	14	Extraction methods of spice oils by various techniques, viz., solvent extraction, steam distillation etc.	3	
	15	Oleoresin- Concept and importance of oleoresins in food processing, Extraction of Oleoresins	4	
IV	PLANTATION CROPS		14	16
	16	Introduction to plantation crops	1	
	17	Important plantation crops - Oil-yielding crops, masticatory crops, beverage crops, nut crops, industrial crops	1	
	18	Tea - Chemistry, Processing of tea-black tea, green tea, oolong tea.	3	
	19	Tea like organic tea, Instant Tea decaffeinated tea, and flavored tea Standards and Specifications by FSSAI	2	
	20	Coffee - Chemistry, Types, and Processing, Standards and Specifications by FSSAI	3	
	20	Cocoa- Chemistry, Types and processing, Standards, and specifications of by FSSAI	3	
	22	Cocoa products-Chocolate processing	1	
V	PRACTICUM- INDUSTRIAL VISIT		30	
	1	Industrial visit to spice powder or curry powder industry Industrial visit to the tea/coffee industry Experiential learning activities Report writing		

Mapping of COs with PSOs and POs:

	PSO 1	PSO 2	PSO 3	PSO4	PSO 5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	2	3	3	2	2	-	3	-	1	1	2	-
CO 2	2	3	3	3	1	-	2	-	1	2	1	-
CO 3	2	3	2	3	2	-	3	1	1	2	1	-
CO 4	3	3	2	2	1	-	2	-	1	2	1	-
CO 5	-	3	3	3	2	-	2	1	1	2	1	1

CO 6	-	-	-	-	-	-						
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Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Assignments (20%)
- Final Exam (70%)

References

1. Major Spices of India J S Pruthi
2. Quality assurance in spices and spice products J S Pruthi
3. Handbook on Spices and Condiments (Cultivation, Processing and Extraction), H.Panda
4. Introduction to Spices, Plantation Crops, Medicinal and Aromatic Plants,N. Kumar,Oxford and IBH Publishing, 1997
5. S. P. Kanaujia, Raj Narayan, Akali Sema and Moakala Changkiri,Spice Production (A Textbook),2021
- 6.Emmanuel Ohene Afoakwa,Cocoa Production and Processing Technology,CRC Press, 2014

Programme	B.Sc. Family and Community Science				
Course Title	FOOD ADDITIVES AND ADULTERATION				
Type of Course	Vocational Minor				
Semester	II				
Academic Level	100 -199				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Course Summary	The course will equip students with the ability to identify food additives, understand its recommended maximum levels, analyse food additives, and knowledge of food adulteration through practical applications.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understanding of food additives, encompassing their definition, technological purposes, E numbering, classification as well as proficiency in safety assessment.	U	C	Instructor-created exams / Quiz
CO2	Understanding of the types of food additives, considerations involved in using these additives in different foods, and contributing to their ability to make informed decisions in the food industry.	Ap	C	Assignment / Observation of Practical Skills
CO3	Proficiently understand the procedures related to the analysis of food additives and knowledge in thin-layer chromatography, High-Performance Liquid Chromatography and paper chromatographic techniques etc.	U	P	Seminar Presentation / Group Tutorial Work
CO4	Equipped with the knowledge to define food adulteration and common adulterants in various food categories such as milk, vegetable oil, spices, tea, pulses, sugar, and honey.	U	P	Observation of Practical Skills / Home Assignments
CO5	Acquire hands-on skills in the detection of adulterants in various food categories, including milk and its products, vegetable	U	P	Group Tutorial Work/ Practical Skills.

oil,cereals, spices,beverages,fruits and vegetables etc.			
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)			

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I	INTRODUCTION TO FOOD ADDITIVES		6	28
	1	Definition, Functional classes, and their technological purposes, E numbering system, Generally Recognized As Safe (GRAS)	2	
	2	Classification - Intentional & Unintentional food additives, Natural(antioxidants, anti-microbial, colorants, sweeteners)&Synthetic additives	3	
	3	Safety Assessment: Evaluation of health risk of food additives, International standards for the safe use of food additives, Beneficial and toxic effects.	2	
II	TYPES ,PERMITTED FOOD ADDITIVES AND ITS RECOMMENDED MAXIMUM LEVEL		29	21
	4	Preservatives-Benzoic Acid, Sorbic Acid – Hydroxy Benzoic Acid, Sulphur Dioxide, Nitrate and Nitrite in Foods, Propionic acid and Acetic Acid, Diethyl Carbonate in Wine, Salicylic Acid	4	
	5	Sweeteners - Nutritive and Non-Nutritive Sweeteners (Saccharin, Dulcin,Cyclamate,A spartame,Acesulphame – K)	2	
	6	Colors and Flavors (synthetic and natural)	2	
	7	Emulsifiers, Stabilizers and Thickeners, Chemical nature of the commonly used thickening agents	2	
	8	Sequestrates, Humectants, Hydrocolloids	2	
	9	Anti-oxidants, Anticaking agents, Acidulants	2	
	10	Permitted Food Additives And its Recommended Maximum Level in : Dairy products and analog Sterilized and UHT creams, whipping cream milk powder,cheese	2	
	11	Fats and oils, and fat emulsions: Vegetable oils and fats, Fish oil, butter margarine.	2	
11	Fruits and vegetables: Surface-treated fruits, Frozen fruits, Fruits in vinegar, oil, or brine, Canned or bottled (pasteurized) fruit, Jams, Jellies, Marmalades, and Frozen vegetables.	2		
12	Confectionary: Cocoa and chocolate products, Hard and soft candy,	2		

		Nougats, Chewing gum		
	13	Cereals and cereal products: Flour and starches, Maida, Corn flour ready-to-eat cereals, breakfast cereals including rolled oats, Batters.	2	
	14	Bakery products: Bread, Cakes, cookies, biscuit, Cracker.	2	
	15	Meat and meat products; Processed meat and poultry products in whole pieces or cuts, Cured (including salted) and dried processed meat, Frozen processed meat and poultry products in whole pieces or cuts, Edible casings.	2	
	16	Fish and Fish products: Processed, Frozen, Cooked, Smoked	1	
III	ANALYSIS OF FOOD ADDITIVES		8	18
	17	Detection of acesulfame saccharin and cyclamate by Thin-layer Chromatography	2	
	18	Determination of Caffeine, Benzoate and Saccharin by High Performance Liquid Chromatography	2	
	19	Identification of Natural Colors: Caramel, Curcumin, Annatto, chlorophyll, Betanin	2	
	20	Paper Chromatographic Separation of Synthetic Food Colors	2	
IV	FOOD ADULTERATION		3	31
	21	Definition.	1	
	22	DART, Common Food adulterants and their tests: Milk, Vegetable oil, Spices, Tea, Pulses, Sugar, Honey	2	
V	PRACTICAL EXPERIENCE		30	
	<p>1. Milk: detection of water, detergent and starch</p> <p>2. Oil: Detection of other oils in coconut oil</p> <p>3. Sugar and confectionery: Detection of sugar solution in honey.</p> <p>4. Food grains and its products: Detection of rhodamine B in Ragi.</p> <p>5. Salt, spices, and condiments: Detection of foreign resin in asafoetida, Papaya seeds in black pepper, Artificial water-soluble synthetic colors in chili powder, Detection of starch in asafoetida, Detection of chalk in common salt, Lead chromate in turmeric whole, Differentiation of common salt and iodized salt</p> <p>6. Fruits And Vegetables: Detection of malachite green in green vegetables</p> <p>7. Beverages: Detection of chicory powder in coffee powder, Detection of exhausted tea in tea leaves, Detection of iron fillings in tea leaves.</p>			

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PO1	PO2	PO3	PO4	PO5	PO6
CO 1	3	3	1	1	2	-	2	1	2	2	2	1
CO 2	3	3	3	2	3	-	2	1	2	2	2	-
CO 3	3	3	3	2	3	-	2	1	2	3	2	1
CO 4	2	3	3	3	3	-	2	1	3	2	2	1
CO 5	3	2	3	2	3	-	3	1	2	3	1	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz/ Discussion / Seminar
- Midterm Exam
- Practical exam (20%)
- Final Exam (70%)

REFERENCES

1. Titus A M M (2013), The Chemistry of Food Additives and Preservatives, 1 edition, Wiley Blackwell Publishers.
2. Jim Smith and Lily Hong-Shum (2011), Food Additives Data Book, 2nd Edition, Wiley-Blackwell Publishers.
3. Food additives, A. Larry Branen, P. Michael Davidson, Seppo Salminen, John Thorngate, Second edition, CRC Press, 2001
4. MANUAL OF METHODS OF ANALYSIS OF FOODS FOOD ADDITIVES, FSSAI, 2016
5. **FOOD SAFETY AND STANDARDS ACT, 2006**
6. <https://www.who.int/news-room/fact-sheets/detail/food-additives>

Programme	B.Sc. Family and Community Science				
Course Title	ANIMAL FOOD PROCESSING				
Type of Course	Vocational Minor				
Semester	III				
Academic Level	200-299				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	3	-	2	75
Course Summary	This course explores the principles and techniques of processing animal-based products. The course also covers the practical aspects of food preservation, packaging, and distribution providing students with a comprehensive understanding of animal food processing.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the structure, composition, nutritional quality & properties of animal products.	U	F	Instructor-created exams / Quiz
CO2	Develop the knowledge of different preservation methods employed in fish processing.	U	C	Practical Assignment / Observation of Practical Skills
CO3	Analyse the various parameters for meat quality assessment.	An	P	Seminar Presentation / Group Tutorial Work
CO4	Understand the composition and nutritive value, factors affecting egg quality, and preservation of eggs.	U	F	Instructor-created exams / Home Assignments
CO5	Understand and evaluate the various value-added products from fish, eggs, etc.	E	P	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I	Introduction to Animal Foods		15	40
	1	Fish - Classification of fish (fresh water and marine), and Composition	2	
	2	Spoilage of fish - microbiological, physiological, biochemical	2	
	3	Meat - Definition of carcass, concept of red meat and white meat, the composition of meat, and marbling in the meat	3	
	4	Post-mortem changes in meat - rigor mortis, tenderization of meat, ageing of meat	2	
	5	Egg - Composition and nutritive value	1	
	6	Egg proteins	1	
	7	characteristics of fresh egg	2	
	8	Deterioration of egg quality	2	
II	Preservation of Fish		10	21
	9	Chilling, Freezing, curing, drying	3	
	10	Salting methods - brining, pickling, and canning of fish	2	
	11	Smoking - smoke production and smoke components	2	
	12	Quality, safety and nutritive value of smoked fish	3	
	13	Pre-smoking processes and smoking process control		
III	Quality and preservation of Meat and Egg		10	28
	14	Meat Quality - Colour, flavor, and texture	1	
	15	Water Holding Capacity (WHC), Emulsification capacity of meat	2	
	16	Tests for assessment of raw meat - TVN, FFA, PV, Nitrate and nitrite in cured meat	2	
	17	Preservation of meat - Refrigeration and freezing	1	
	18	Thermal processing - canning of meat, dehydration, and meat curing	2	
	19	Preservation of eggs - Refrigeration and freezing, thermal processing, dehydration, coating	2	
IV	Animal Food Products		10	9
	20	Fish products - Surimi, Fish protein concentrates (FPC), fish protein extracts (FPE)	4	
	21	Meat products - Sausages - processing, RTE meat products	3	
	22	Egg product – Egg powder, frozen egg pulp, designer eggs.	3	
V	PRACTICAL		30	
	1	Slaughtering and dressing of meat animals	4	
	2	Study of post-mortem changes in meat	3	
	3	Evaluation of meat quality	4	
	4	Evaluation of quality of eggs – external and internal	3	

	5	Cutting and dressing of fish (Drawn fish, Fillets, steaks, finger cuts etc)	3	
	6	Study of post-mortem changes in fish – Biochemical changes	3	
	7	Evaluation of fish quality : Organoleptic and non-sensory methods	4	
	8	Preparation of meat, egg and fish products	3	
	9	Visit to meat, egg and fish processing plants	3	

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	3	-	2	1	2	3	-	1	-	-	-	1
CO 2	3	-	2	1	2	3	-	1	-	1	-	1
CO 3	3	-	2	1	2	3	-	2	-	-	-	2
CO 4	3	-	2	1	2	3	-	2	-	-	2	2
CO 5	3	-	2	1	2	3	1	2	1	2	2	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment / Discussion / Seminar
- Midterm Exam
- Final Exam (70%)

References:

1. Govindan T K (1985) Fish Processing Technology, Oxford & IBH publishing
2. Hui Y H (2001) Meat Science and Applications, 1st edition, CRC Press
3. Kerry J, Kerry J and Ledward D (2002) Meat Processing improving quality, 1st edition, CRC Press.
4. Pearson A M and Gillett T A (2012) Processed Meat, Springer publishing
5. George M. Hall (2012), “Fish Processing Technology”, Springer Science & Business Media Publication.
6. Isabel Guerrero-Legarreta (2010), “Handbook of Poultry Science and Technology, Secondary Processing”, John Wiley and Sons Publication.
7. <https://www.youtube.com/watch?v=OZWYW7u11LI> - Processing of meat

Programme	B.Sc. Family and Community Science				
Course Title	FOOD SAFETY AND QUALITY CONTROL				
Type of Course	Vocational Minor				
Semester	VIII				
Academic Level	400 -499				
Course Details	Credit	Lecture per week	Tutorial per week	Practical per week	Total Hours
	4	4	-	-	60
Course Summary	This course covers the essential principles of food safety and quality control, exploring topics such as hazards, various standards, and foodborne illnesses. The course also addresses risk management, risk assessment, and emerging trends in food safety to equip with knowledge for effective control and management in the food industry.				

Course Outcomes (CO):

CO	CO Statement	Cognitive Level*	Knowledge Category#	Evaluation Tools used
CO1	Understand the principles and methods of Food Quality Control and Assurance.	U	F	Instructor-created exams / Home Assignments
CO2	To provide a basic understanding of quality concepts and practices in food companies.	U	C	Practical Assignment / Observation of Practical Skills
CO3	Possess an understanding of the laws and regulations applicable to food processing from the perspective of food safety and quality assurance and their effects on operational activities in a food manufacturing facility.	U	F	Seminar Presentation / Group Tutorial Work
CO4	Application of food safety and quality system audit tools that inform compliance of food processing operations to laws and regulations.	Ap	P	Instructor-created exams / Quiz / Group Tutorial Work

CO5	Differentiate the effectiveness of practical applications of food safety and quality assurance system elements in a food manufacturing environment, across the logistics chain from the farm to the consumer.	An	P	One Minute Reflection Writing assignments
* - Remember (R), Understand (U), Apply (Ap), Analyse (An), Evaluate (E), Create (C) # - Factual Knowledge(F) Conceptual Knowledge (C) Procedural Knowledge (P) Metacognitive Knowledge (M)				

Detailed Syllabus:

Module	Unit	Content	Hrs	Marks
I	Food Safety, Hazards and Risks		10	27
	1	Meaning, definition of hazards	1	
	2	Types of hazards – Biological hazards, physical hazards, and chemical hazards	2	
	3	Risk assessment and management	1	
	4	Natural toxicants in foods pesticide residues in foods – Assessment and elimination	2	
	5	Pesticide residues in foods – Assessment and elimination	2	
	6	Investigation of food-borne disease outbreaks	2	
II	Sampling procedures and International Food standards		15	31
	7	Sampling procedures and plans	2	
	8	Global Food Safety Initiative	3	
	9	Labelling issues	2	
	10	International food standards - Codex Alimentarius, ISO	3	
	11	HACCP, Guidelines for the application of HACCP	5	
III	Concept of Quality		15	31
	12	Quality attributes - physical, chemical, nutritional, microbial, and sensory	2	
	13	Concepts of quality management - Objectives, importance, and functions of quality control	2	
	14	Quality assurance, Total Quality Management	2	
	15	Quality management systems in India, GMP/GHP, GLP, GAP	3	

	16	Quality manuals	2	
	17	Documentation and audits	1	
	18	Export-import policy, export documentation	1	
	19	Laboratory quality procedures and assessment of laboratory performance	2	
IV	Food Laws and Standards		8	9
	20	Introduction and need for food laws	2	
	21	Mandatory food laws; The Food Safety and standards Act 2006	3	
	22	Indian food regulations	3	
V	Open Ended Module: Industrial experience		12	
	1	Visit a food industry to learn and analyze the following:- write a report - Personal hygiene - Kitchen hygiene and sanitation - Purchasing and receiving safe food - Food storage - Sanitary procedures in food preparation - Microbiology in food plant sanitation - Water Quality Assessment - Insect and pest control - Waste treatment and Disposal - Food vending and packaging standards	10	
	2	HACCP- PROCEDURES FOLLOWED Quality checks- activity-based- canteen/street vendors/hostel mess	2	

Mapping of COs with PSOs and POs:

	PSO1	PSO2	PSO3	PSO4	PSO5	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO 1	2	2	1	2	1	3	-	3	-	-	1	1
CO 2	2	2	1	2	1	2	2	2	-	2	2	2
CO 3	2	2	1	2	1	3	2	2	-	1	1	1
CO 4	1	1	1	2	2	3	2	2	1	2	2	2
CO 5	2	2	1	2	1	2	2	2	-	2	2	2

Correlation Levels:

Level	Correlation
-	Nil
1	Slightly / Low
2	Moderate / Medium
3	Substantial / High

Assessment Rubrics:

- Quiz / Assignment / Discussion / Seminar
- Midterm Exam
- Final Exam (70%)

Reference:

1. Nollet and Toldra (2015), Hand Book of Food Analysis, 3rd Edition, CRC Publishing Ltd.
2. Rangana S (2007), Hand Book of Analysis & Quality Control for Fruit & Vegetable Products, 2nd edition, Tata McGraw hill publishing.
3. Nielson S (2002), Introduction to the chemical analysis of foods, 2nd edition, CBS Publishing.
4. Pulkit Mathur (2018), Food Safety and Quality Control, Orient Blackswan Publishers.
5. The Food Safety and Standards Act along with Rules and Regulations, 2011, Delhi, Commercial Law Publishers (India) Pvt Ltd.
6. Mortimore, S., and Wallace, C., (2005) HACCP: A practical approach, 2nd Ed, Aspen

**MODEL
QUESTION PAPERS**

I Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS1CJ101/FCS1MN100 Perspectives of Food Science (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Write components of starch
2. Explain EFA
3. Briefly explain Tenderization of meat
4. What are the different pigments present in vegetables and its effect on cooking
5. Explain Food groups
6. Define gelatinization
7. Explain food pyramid
8. Explain different methods of cooking
9. What is meant by EFA
10. Explain nutritional significance of Fish

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Write a note on Stages of sugar cookery
12. Give a short note on rancidity
13. Explain briefly postmortem changes
14. Write the merits of germination
15. Explain the factors affecting gluten formation
16. Explain parboiling and its advantages and disadvantages
17. Explain Types of browning.
18. Write on crystallization

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Explain the structure of a cereal grain with diagram
20. Different methods of food preservation

I Semester B.Sc. Family and Community Science (CUFYUGP) Degree

Examination

FCS1FM105 Interior Decoration (credits: 3)

Maximum Time: 1.5 hours

Maximum Marks: 50

Section A

[Answer All. Each question carries 2 marks]

(Ceiling 16 marks)

1. Explain Japanese arrangement.
2. What is intermediate colour?
3. Functional accessories
4. What is monochromatic colour scheme?
5. What are decorative accessories?
6. Differentiate between tint and shade.
7. Explain the types of line.
8. Illustrate café curtain.
9. Draw a kitchen layout for a studio apartment.
10. What are miniature arrangements?

Section B

[Answer All. Each question carries 6 marks]

(Ceiling 24 marks)

11. Explain the types of window treatment?
12. What are the materials used for flower arrangement?
13. Explain rhythm and harmony
14. Explain formal and informal balance
15. Explain psychological impact of blue colour?

Section C

[Answer any one. Each question carries 10 marks] (1x10=10 marks)

16. Explain flower arrangement under the following heading a) Types b)

Materials used c) Mass arrangement

17. Explain colours with the help of Prang's colour wheel.

II Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS2CJ101/FCS2MN100 Fibre to Fabric (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. What is a regenerated fiber?
2. What is a novelty yarn?
3. What is plain weave?
4. What is bonding?
5. Define Polymerisation
6. What is the cross section of a cotton fiber
7. Define 'fibre'.
8. How are yarns prepared for weaving?
9. What is felting of wool?
10. What is spinning?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. What is wet spinning?
12. Give the identification of rayon and wool
13. Write a note on bicomponent and biconstituent yarn
14. Write a note on yarn twist
15. What is a pile weave?
16. Discuss the manufacture of polyester fibre.
17. Write a note on properties of silk fibre.
18. Explain the evolution of looms

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Explain the classification of fibres according to their source.
20. Write in details about the shuttleless looms.

II Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS2FM106 Family Meal Management

(credits: 3)

Maximum Time: 1.5 hours

Maximum Marks: 50

Section A

[Answer All. Each question carries 2 marks]

(Ceiling 16 marks)

1. What is ARF?
2. What is the menu planning?
3. What is IDD?
4. Objectives of FAO
5. Give the RDA for male computer professional
6. Anorexia nervosa
7. Balanced diet
8. What are lactagogue? Give example
9. Define nutritional assessment
10. Define weaning

Section B

[Answer All. Each question carries 6 marks]

(Ceiling 24 marks)

11. What are important physiological changes during pregnancy?
12. What are the objectives of school lunch programme?
13. What is complementary feeding?
14. "Obesity is an emerging problem among school children". Why?
15. Explain the process of ageing?

Section C

[Answer any one. Each question carries 10 marks] (1x10=10 marks)

16. Explain the important of nutrients in elderly. How can you modify the diet for elderly?
17. Bring out the nutritional requirements and nutritional problems of teenagers.

III Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS3CJ201/FCS3MN200 Human Physiology (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. List out the functions of the kidney
2. Give a note on salivary gland
3. Draw the waves of normal ECG
4. Explain the role of Aldosterone in human body
5. List out the composition of urine
6. Erythroblastosis fetalis
7. What are Synapses
8. Define the constituents of blood
9. List out the salivary enzymes
10. Name the hormones secreted by ovaries

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Give a note on uterine cycle
12. Explain the Movement of Gastrointestinal tract
13. Explain any six properties if cardiac muscles
14. What is Micturition, explain its reflex?
15. Elaborate parturition and its stages
16. Explain the functions of kidney
17. Describe the digestion of carbohydrate
18. Describe hunger and thirst mechanism.

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Describe Cardiac Cycle and Heart Sound
20. Trace the path of a follicle from ovary to uterus.

III Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS3CJ202 Textile wet Processing (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define finishes?
2. What is calendaring?
3. Define bleaching
4. What is a reactive dye?
5. Define dyes
6. Explain ecolabels
7. Define shearing
8. Explain napping
9. Explain sizing
10. Define singeing

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain synthetic dyes
12. What are special finishes?
13. Describe natural dyes
14. Explain different methods of printing
15. What is sustainability in textile industry?
16. What are the recent trends in textiles?
17. Elaborate on stencil and duplex printing methods
18. Explain about printing machines

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Elaborate on textile processing
20. Explain different types of finishes

IV Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS4CJ203 Human Development (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Medical care during pregnancy
2. Appearance of newborn
3. Hemorrhoids
4. Tubal pregnancy
5. Define I.Q.
6. Define juvenile delinquency
7. Define gifted children
8. Characteristics of emotionally challenged children
9. Solitary play
10. Explain recapitulation theory

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Complication during pregnancy
12. Sensory abilities of newborn
13. Factors influencing pre-natal development
14. Enlist any four principles of growth and development
15. What are the different types of play?
16. Types of pre-school
17. Adolescent is a period of storm and stress. Why?
18. Explain on Neonate

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Discuss the various factors affecting growth and development
20. Explain exceptional children under the following heading 1. Classification 2. Causes of mentally retardation 3. Prevention of mentally retardation 4. Care of mental retardation 5. Care of gifted children.

IV Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS4CJ204 Principles of Nutrition (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. List out all essential amino acids
2. Give a note on polysaccharides
3. Symptoms of Kwashiorkor
4. Explain the role of PUFA in human body
5. Define EFA. Mention the names.
6. Define Reference Man
7. What is SDA of food
8. What are the Factors affecting Calcium Absorption
9. What are goiterogenic substances
10. What is RDA

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Give a note on Classification of food
12. Explain the Digestion of Carbohydrates
13. Explain functions of Vitamin C
14. Write a note on the role of pancreas in digestion
15. Explain PEM and its treatment
16. Explain anemia and its types
17. Explain deficiency symptoms of Thiamin
18. Explain Vitamin K

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Define BMR. Explain the factors affecting BMR.
20. Describe the metabolism of Carbohydrate.

IV Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS4CJ205 Fashion Design and Illustration (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define the term Style
2. What are the factors affecting fashion?
3. List the adoption theories of fashion
4. List four Indian and International Designer.
5. Define the term Change
6. What is introduction to a style?
7. Give a note on Pear Body type
8. What are structural design?
9. Define different body proportions
10. What are the tools used in illustration?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain the different stages of fashion cycle.
12. Briefly explain any two factors affecting fashion.
13. Briefly write about any Indian Fashion Designer.
14. Write briefly about any two mens' ensembles.
15. Explain in detail about the dressing tips for the following:
 - a. Hourglass type body shape
 - b. Inverted triangle type body shape
16. Explain any two Economic factors that affect fashion.
17. Explain the features of fashion.
18. Elaborate on the elements of design

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Write an essay on the factors affecting fashion.

20. Explain the adoption theories of fashion.

V Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS5CJ301 Nutrition through Lifecycle (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Explain the physical and physiological changes in lactation.
2. Write on feeding protocol for preterm babies.
3. Comment on food habits of pre-schoolers.
4. Discuss on nutritional requirements of a school going girl (10 years old).
5. Explain the risk factors of infertility.
6. Elaborate on the management of high risk pregnancies.
7. Briefly explain the changes that occur in gastrointestinal tract at high altitude.
8. Why is anaemia prevalent among adolescent girls?
9. Briefly Explain PEM
10. Write a note on prevention and causes of night blindness

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Write on nutritional and dietary requirements during pregnancy.
12. Explain the intervention strategies to prevent malnutrition in preschool children.
13. Write on importance of growth monitoring.
14. Describe the role of nutrition in academic performances.
15. Plan a menu for adolescent boy (16 years- vegetarian) and analyse the adequacy for the concerned age group.
16. Explain free radical hypothesis.
17. Health is wealth – Justify the sentence based on link between nutrition and health.
18. Elaborate on physiological changes and dietary modifications on old age

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Describe the benefits of breast feeding.
20. Discuss the nutritional requirements of adult men on their mode of activity.

V Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS5CJ302 Resource & Space Design Management (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Mention the four dimensions of colour
2. Define work simplification
3. Enlist two means to optimize satisfaction derived from the utilization of family and community resources quoting examples
4. State the advantages of Gantt chart.
5. Write a short note on types of income
6. Define rhythm and its type
7. List out different functions of window treatments.
8. What are the steps in management process?
9. What is waste management?
10. Define time management

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. What are resources? Differentiate between human and material resources with example.
12. Enumerate the qualities of a good Home maker.
13. Describe the factors in the selection of a site for house construction.
14. State the importance of supplementing income with a few examples suitable for low income families
15. Discuss the steps in preparing of time schedule. Prepare a time schedule suitable for an employed homemaker.
16. Elaborate with illustrations the six curtain styles stating where each one could be applied.
17. What are the elements of design?
18. List primary and secondary colour.

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. State the importance of maintaining household accounts
20. Discuss the various steps and factors to be considered while making time plan

V Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
FCS5CJ303 Traditional Indian Textiles and Needlework (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. What is Ab-i-rawan?
2. Differentiate between Amrus and Himrus
3. What are telia rumals?
4. What are the specialities of pashmina shawl?
5. Describe Arshilata.
6. List out the colours used in Kashida embroidery.
7. State any two government policies for sustenance of textiles.
8. Write a detailed note on Chamba Rumal.
9. What is pitamber?
10. What is Varida bagh?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Give an account of the weaving of Kanchipuram sarees.
12. Write a note on care and storage of traditional textiles.
13. Explain briefly the stitches used in chikankari.
14. Describe the motifs used in patola.
15. Write a brief note on benaras brocades.
16. Give an account of textiles of Goa.
17. Write a note on embroidery of Manipur.
18. Explain the Traditional embroidery- Kutch work.

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Explain in detail on the block printed textiles.
20. Explain the embroidery of Punjab

V Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

Elective I – FCS5EJ301(1) Food Microbiology (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. What is lag phase
2. Define a bacteriophage
3. What is herd immunity
4. What is endemic disease
5. Write on food spoilage
6. What are the methods and organism used for food fermentation
7. Differentiate probiotics and prebiotics
8. Define gram staining
9. What is an indicator organism?
10. Define food poisoning

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Write a note on stages of bacterial growth
12. Explain economic importance of yeast
13. Explain viral diseases in brief
14. What are the methods used in isolation and identification of microorganisms?
15. Explain gram staining
16. Illustrate the role of microorganism in the food industry
17. What are the intrinsic factors affecting the growth of microorganism?
18. What are the extrinsic factors affecting the growth of microorganism?

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Write an essay on the control and destruction of bacteria
20. Elaborate on Food fermentation

V Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

Elective I – FCS5EJ303(2) Child Rights and Welfare (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define child
2. Explain child rights
3. Define Juvenile Delinquency
4. Explain mid day meal scheme
5. What is ICDS?
6. Discuss on Poshan Abhiyaan
7. Explain WHO and its role in child protection
8. Explain the functions of UNICEF
9. What are the motto of NCPCR
10. Explain Right to Education Act

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Write a note on The Juvenile Justice (Care and Protection) Act
12. Explain CARA
13. Discuss on National Education Policy 2020
14. Explain the functions and role of NIPCCD in child protection
15. Discuss the fundamental rights related to children
16. The Pre-Conception & Pre-Natal Diagnostic Techniques Act stands for children – Justify
17. Explain The Child Labour (Prohibition and Regulation) Act
18. Write on Declaration of the Rights of the Child

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Elaborate on Challenges faced by children in India:
20. Explain the following heads - Samagra Shiksha Abhiyan, Childline services (Child line foundation), Integrated programme for Street Children, Integrated Programme for Juvenile Justice

V Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

Elective I- FCS5EJ305(3) Furniture and Furnishings in Interiors (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Classify floor finishes.
2. Sketch a café curtain.
3. What is meant by modular furniture.
4. Mention any two materials used for making furniture.
5. Inspect why marble is not used on Kitchen floors.
6. What is an awning?
7. Mention the latest trend in furniture.
8. Name any two types of windows which are difficult to treat.
9. Give two functions of resilient floor coverings.
10. What are glass curtains?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Classify types of windows.
12. What are the points in selection of furniture.
13. Differentiate between curtains and draperies.
14. List down the exterior window treatments.
15. Discuss on the factors in furniture arrangement in a living room.
16. Discuss the construction of upholstered furniture.
17. Elaborate on the importance of furnishings in interiors.
18. Write the maintenance and care to be given to cane furnitures.

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Discuss the role of furniture in designing interiors
20. Elaborate on the factors affecting furnishing decisions

V Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

Elective I- FCS5EJ307(4) Extension Education (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define rural community
2. Define urban community
3. Differentiate panchayath and corporation
4. Write a note on Kudumbasree
5. Define leadership
6. Define NAEP
7. Describe TRYSEM
8. Write a note on JRY
9. Explain IRDP
10. What are youth clubs?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain different types of Evaluation in extension
12. Elaborate on District Rural Development Agency
13. Describe the importance of audio-visual aids in communication
14. Illustrate on merits, demerits use of audio visual aids
15. What are the problems in communication?
16. What are the steps involved in Programme Development?
17. Write on Community Development Programmes in India
18. Explain vocationalization of Home Science in India

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Elaborate on classification of extension teaching methods- types, scope, advantages and limitations of methods.
20. Describe the scope and objectives of extension education in India.

V Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examinations

Elective II- FCS5EJ302(1) Food Service Management (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

Discuss on the food related guest services in the hotel.

2. Classify food serving catering industry.
3. Discuss on job opportunities in hotel industry.
4. Summarize objectives of food production.
5. Explain quantity adjustment step in standardization.
6. Discuss on any 5 types of food services in hotel.
7. Elaborate on componets and styles of leadership.
8. Explain different types of kitchen
9. Write down the factors involved in food purchasing
10. Write a note on portion control

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Classification of hotels based on location.
12. What are the steps in information gathering for planning a kitchen layout.
13. Elaborate basic factors for the selection of equipements.
14. List down the general guidelines for persons handling food .
15. Discuss on the key elements of induction and the aids used for training.
16. Distinguish between autocratic and democratic leadership and its components.
17. Expain on importance of food laws and give a note on AGMARK .
18. Write a note on HACCP

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Discuss on storage of food and list down the methods.
20. Elaborate on counter service and its advantages, disadvantages

V Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examinations

Elective II- FCS5EJ304(2) Early Childhood Care and Intervention (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define project approach
2. What is Head Start Program?
3. Define High Scope Curriculum
4. Write the importance of Programme Planning
5. What is Montessorie?
6. Define the skills of administrator
7. Describe kindergarden
8. Write a note on Indigenous play materials
9. What is the need for play spaces?
10. Explain the importance of creativity

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Elaborate on early stimulation and early intervention
12. Write on the strategies to foster creativity in classroom
13. What are the characteristics of good play equipment and materials?
14. Write down the Significance, aims and objectives of early childhood care and education
15. What are the different types of curriculum planning?
16. How are early childhood facilities designed?
17. Write a note on space allotment
18. Elaborate on teaching learning materials

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Elaborate on the milestones of development

20. Explain different types of preschools

V Semester B.Sc. Home Science (CUFYUGP) Degree Examination
Elective II- FCS5EJ306(3) Hospitality and Housekeeping (credits: 4)
Maximum Time: 2 hours **Maximum Marks: 70**

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Explain the window treatments
2. Write on the floral decorations
3. What is IWM?
4. Explain hotel
5. Why is hostess training important?
6. How to plan a front office
7. Explain different types of hotels
8. Define laundry service
9. How recruitments are done in organisations?
10. Explain record maintenance

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. How to control infestations in an organization?
12. Explain different types of laundry
13. Explain on bedmaking and turning down in hotels
14. Elaborate on Coordination and communication of front office with other departments
15. Discuss on the qualities and etiquettes to be followed by front office department
16. Elaborate on lobby management
17. Explain on the selection and care of Furniture
18. Elaborate on the interior designing of hospitality area

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Elaborate on the functions and structure of housekeeping department
20. Explain how the cleaning of guest rooms and service areas are done

V Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examinations

Elective II- FCS5EJ308(4) Community Development (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. State the principles of community development.
2. Describe the qualities required for personnel involved in community development activities.
3. Define community-based organizations (CBOs).
4. What are the objectives of community development?
5. Discuss the relationship phase of community development.
6. How does community development contribute to social change?
7. Define the term "sustainable community development".
8. Differentiate between rural development initiatives pre and post-independence.
9. Discuss the importance of community participation in evaluating the effectiveness of development programmes.
10. Define community development.

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Differentiate between community development as a process, method, programme, and movement.
12. Explain the role of student volunteers in community development under the National Extension Service.
13. Explain the role of incentives and prizes/awards in community development.
14. Explain the concept of Sustainable Development Goals (SDGs).
15. Explain the principles of sustainability in community development.
16. Describe various evaluation methods for community development programmes.
17. Explain different models of community-based organizations.
18. Describe the role, structure, and functions of community organizations.

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Critically evaluate the seven phases of community development.

20. Describe in detail about various community development programmes, focusing on their impact, effectiveness, and sustainability.

V Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

SEC 2- FCS5FS112 Baking & Culinary Arts (credits: 3)

Maximum Time: 1.5 hours

Maximum Marks: 50

Section A

[Answer All. Each question carries 2 marks] (Ceiling 16 marks)

1. What is dextrinisation?
2. Explain enzymatic browning.
3. What are the pigments in vegetables?
4. Explain poor man's milk.
5. What all are the importance of breakfast cereals?
6. Describe the effects of germination on pulses.
7. Name any five pigments present in vegetables.
8. Write down the different proteins in egg white and egg yolk.
9. Write any three nutritional importance of meat.
10. Explain sugar crystallization

Section B

[Answer All. Each question carries 6 marks] (Ceiling 24 marks)

11. Explain rancidity in detail.
12. Objectives of cooking.
13. Describe browning reaction.
14. Explain caramilization of sugar
15. Importance of food preservation.

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

16. Explain the different methods of cooking with suitable examples.
17. Explain nutritional composition and importance of fish cookery.

VI Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
FCS6CJ304/FCS8MN304 Diet Therapy (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Differentiate liquid and soft diet?
2. What is Bland diet?
3. Explain tube feeding
4. Explain Ulcer
5. What are different types of cancer
6. Define hypoglycemic drugs
7. Explain ESRD
8. Define AIDS
9. What is a DASH diet?
10. Define FAD diet

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain the role of a dietitian
12. Elaborate on underweight
13. What are the risk factors and treatment for atherosclerosis?
14. How technology is used in diet counselling
15. Elaborate on Cirrhosis
16. What are the causes and dietary treatment for nephritis
17. Describe the medical nutrition therapy for typhoid
18. Elaborate on food exchange list

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Explain Diabetes mellitus on following heads - Types, causes, symptoms, bio-

chemical changes, insulin, types and uses

20. Elaborate cancer on the following heads - Etiology, types of cancer, nutritional therapy and dietary recommendation for cancer survivors

VI Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
FCS6CJ305/FCS8MN305 Apparel Production and Care (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Explain the causes of permanent hardness,
2. Define fashion cycle
3. Why does thread break during sewing?
4. What kind of clothes will you select for a very thin figure?
5. What are the different stages of fashion cycle?
6. What is visual merchandising?
7. What is Phulkari?
8. What is the importance of correcting stitch tension?
9. What are the basic requirement of sewing machine?
10. Write a note on bleaches

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. What are the principles used during laundering of cotton fabric?
12. What is detergent?
13. What are stiffening agent? How it is applied in fabric?
14. How can lipstick stain be removed from the cotton fabric?
15. How will launder a woolen sweater?
16. What are optical brighteners?
17. Write a note on tools used in sewing
18. What are the steps in fabric before cutting?

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. How will you select clothing for a following figure? Illustrate
(a) A short figure (b) Tall and stout figure (c) A plump figure
20. Write a note on:
(a) Kantha of Bnegal (b) Phulkari of Punjab (c)kalamkari

VI Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
FCS6CJ306/FCS8MN306 Family Dynamics (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

- 1 Define family
- 2 Define marriage
- 3 Stages of family cycle
- 4 Alcoholism
- 5 Courtship
- 6 Extended family
- 7 Contraception
- 8 Infidelity
- 9 Family planning
- 10 Single parent family

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Differentiate between desertion and divorce?
12. Comment on contemporary issues in family life
13. What are the major objectives of marriage?
14. Discuss the merits and demerits of nuclear family
15. Give your views on mate selection
16. Enumerate the functions of marriage
17. Explain different stages of family life cycle
18. Illustrate the laws pertaining to sexual harassment

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Enumerate the major functions of family
20. Explain different types of deviant sexual behaviors

VI Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examinations

Elective III FCS6EJ301(1) Nutrition for Health and Fitness (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define health and fitness
2. What are dietary supplements
3. Define electrolytes
4. Classify dietary supplements
5. Define nutrition balance
6. Define fitness balance
7. Classify physical fitness
8. Define physical activity
9. Explain cosmetic fitness
10. Define eating disorder

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Elaborate on ergonomic aids
12. Explain the nutritional risks among male and female sports persons
13. What are the effects of dehydration in exercise performance
14. Explain the principles of planning weight reducing diets
15. Elaborate on the methods and benefits types of physical fitness
16. What is the role of water and electrolytes in exercise?
17. Elaborate on regulations on dietary supplements
18. Explain the importance of health and wellness education

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Elaborate on the effect of macro and micro nutrients during exercise
20. Explain antidoping agency and merits and demerits of ergogenic aids and supplements

VI Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examinations
Elective III- FCS6EJ303(2) Adulthood and Aging (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define adulthood
2. What is ageing?
3. Define gerontology
4. Define Alzheimer's
5. What is dementia?
6. Explain Parkinsons disease
7. What is empty nest syndrome?
8. How menopause effects a women emotionally?
9. What are the developmental tasks of adulthood?
10. Explain palliative care

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain Levinson's theory of adulthood development
12. Elaborate the role of families in elderly care
13. What are the responsibilities of society towards the old age?
14. Explain the early adulthood developmental tasks
15. What are the Government policies and programmes existing for elderly?
16. Explain the developmental tasks of middle age adulthood
17. What are the causes of dependency in old age?
18. Explain the physical challenges faced by elderly?

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Elaborate on the signs of ageing
20. Explain different stages of adulthood

VI Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examinations

Elective III- FCS6EJ305(3) Sustainable resources (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. What is noise pollution?
2. Define global warming
3. Define energy
4. What is vermicomposting?
5. Define incineration
6. What are different types of water pollutants?
7. What is biogas?
8. Define energy crisis
9. What is ozone layer depletion?
10. What are the causes of acid rain?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. What is the interrelationship between population and development?
12. Elaborate on environmental protection law
13. What are the green practices pertaining to environmental issues?
14. Elaborate on energy conservation methods
15. Explain solar energy and the devices used to conserve it
16. What are the different methods to augment water resources?
17. Explain the effect of water pollution
18. What are the different methods of solid waste dumping?

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Elaborate on sewage water treatment
20. Explain different types of environmental pollution

VI Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
Elective III – FCS6EJ307(4) Women Studies (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define women studies
2. What are the objectives of women studies?
3. Define women empowerment
4. Define WIA
5. Explain NCWI
6. What is AIWC
7. Explain the components of empowerment
8. Define Entrepreneurship?
9. Explain the characteristics of women entrepreneur
10. Define National Women's Organization

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. How women studies in Indian universities help to develop a women?
12. What is the role of women entrepreneur associations in developing a women entrepreneur?
13. Explain the problems faced by the women entrepreneurs
14. Elaborate on the four aspects of empowerment
15. What are the suggestions for growth of women entrepreneurs?
16. Explain the importance of gender analysis in framing policies and programs
17. Elaborate on the history of women's studies
18. Explain gender sensitization

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Elaborate on the Women empowerment
20. Explain the role of women's development organizations in India

VI Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
Elective IV- FCS6EJ302(1) Nutrition Counselling and Education (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Discuss on professional ethics in diet counselling.
2. Write a note on facilitative counselling.
3. Explain the client centered theory in counselling.
4. Give an account of objectives of nutrition counselling.
5. Write a note on nutrition counselling for old age.
6. Discuss on individual nutrition education.
7. Write a note on factors consider in nutrition counselling for HIV/ AIDS patients.
8. What are the steps in counselling process?
9. Define nutritional counselling
10. Define SOAP

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain the skill and techniques for counselling.
12. Discuss on different stages of counselling.
13. Describe the factors consider in nutrition counselling for pregnant woman.
14. Explain nutrition counselling for cancer patient.
15. Explain the different education materials for nutrition education.
16. Give an account of types of nutrition education.
17. Discuss on methods for nutrition education
18. Elaborate on IDA

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Describe the theories used in counselling process.
20. Illustrate the nutrition counselling for coronary heart diseases.

VI Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
Elective IV- FCS6EJ304(2) Guidance and Counselling (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define guidance.
2. Write a note individual counselling.
3. What are the values of group counselling.
4. Give an account of objectives of nutrition counselling.
5. How to select group members for group counselling?
6. Discuss on the ethical standards of a counsellor
7. What are the principles of guidance?
8. What are the steps in counselling process?
9. Define counselling
10. Explain the scope of guidance

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain the skills counselling.
12. Discuss on different stages of counselling.
13. Describe the responsibilities of a professional counsellor.
14. Differentiate between individual and group counselling
15. Explain the moral qualities needed for a professional counsellor.
16. Give an account of ethical standard of a professional counsellor
17. Discuss influencing factors of counselling
18. Elaborate on counselling process

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Describe the theories used in counselling process.
20. Elaborate on Guidance

VI Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examinations

Elective IV- FCS6EJ306(3) Ergonomics (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define ergonomics
2. What is fatigue?
3. Explain work load
4. Explain work curve
5. What is work?
6. Explain rest cycle
7. What is anthropometry?
8. Define fitness
9. Explain acceptable work load
10. Explain work triangle

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain the problems caused by ill designed work station
12. Elaborate on anthropometric measurements,
13. What are the effect of wrong postures on cardiovascular and muscular skeletal system?
14. Discuss on Mundell's classes of changes
15. Write about the causes and prevention of work related MSD
16. Elaborate on the classification and factors influencing fatigue
17. Explain the scope of Ergonomics in modern society
18. Discuss the physiological factors involved in muscular work.

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Elaborate on ergonomic factors considered while designing a work station
20. Discuss the effect of air, noise and lighting on work environment and its impact on work efficiency

VI Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
Elective IV- FCS6EJ308(4) Entrepreneurship Management (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. What is Entrepreneurship?
2. What is EDP?
3. What is KITCO?
4. What are women Entrepreneur?
5. Define SSI
6. What is entrepreneur?
7. What is project formulation?
8. Compare the function of NSIC and KVIC
9. What are characteristics of an entrepreneur?
10. Distinguish between entrepreneur and entrepreneurship

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain supporting mechanism incentives and facilities from government.
12. Explain Project Life cycle.
13. Compare the function of NSIC and KVIC.
14. Give the classification of projects.
15. Write about the remedies to solve the problem faced by women entrepreneur
16. Write the characteristics of SSI.
17. Write down the problems faced by women entrepreneur.
18. Elaborate on the classification of projects

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. What do you mean by EDP? Explain the objectives of EDP
20. Entrepreneurship Development holds the key for rapid economic and social development of India

**VI Semester B.Sc. Family and Community Science (CUFYUGP) Degree
Examination**

SEC 3- FCS6FS113 Landscaping and Nursery management (credits: 3)

Maximum Time: 1.5 hours

Maximum Marks: 50

Section A

[Answer All. Each question carries 2 marks] (Ceiling 16 marks)

1. Explain the layout of small garden
2. Differentiate the layouts of informal and formal garden
3. What is garden pavements?
4. Differentiate creepers and perennials?
5. What is a terrarium
6. Define rock garden
7. What all types of plants can be cultivated in kitchen garden?
8. Name any 4 garden tools and its uses
9. Define grafting
10. Explain budding

Section B

[Answer All. Each question carries 6 marks] (Ceiling 24 marks)

11. Explain different types of plant propagation
12. Elaborate on terrace gardening
13. What are the principles of landscape gardening?
14. Elaborate on external space organization
15. Describe the routine garden duties

Section C

[Answer any one. Each question carries 10 marks]

(1x10=10marks)

16. Explain the styles and techniques in Bonsai.
17. Elaborate on indoor gardening.

VII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS7CJ401 Textile Chemistry (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks]
(Ceiling: 24 Marks)

1. What are polymers?
2. What are the properties of wetting agents?
3. What is desizing?
4. What is due processing?
5. What is a color mixing system?
6. What is Hue?
7. What is the importance of textile chemistry?
8. Explain the preparatory process.
9. What are natural dyes?
10. What is acid dye?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

1. What is the definition of polymer?
2. What are the needs and importance of Textile Chemistry?
3. Explain the principles of printing.
4. Explain the structure and use in classification of dyes.
5. What is the chemical composition and properties of a wetting agent?
6. Describe Eco- friendly chemicals.
7. Explain fixation of print and various methods used.
8. What are the principles of dyeing and mechanism of dyes?

Section C

[Answer anyone. Each question carries 10 marks] (1x10=10marks)

1. Describe the importance of Eco- friendly textiles.
2. What is the preparatory process in applying the fabric?

VII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
FCS7CJ402 Clinical and Therapeutic Nutrition (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define the role and professional ethics of a Dietitian.
2. Differentiate between soft diet and regular diet.
3. Explain on tropical sprue.
4. Discuss on risk factors for osteoporosis.
5. List out the complications and symptoms of Gout.
6. Brief on the complications of Dengue fever.
7. List out the dietary changes during diarrhea.
8. Explain a bland diet
9. What is a DASH diet?
10. Explain transitional feeding

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Elaborate on the Nutritional care process.
12. Discuss enteral nutrition and its types.
13. Differentiate between Crohn's disease and Ulcerative Colitis.
14. Explain the causes and symptoms of PKU.
15. Brief on the symptoms and pathophysiology of Glomerulonephritis.
16. Elaborate on the procedure of Dialysis and its types.
17. Detail the symptoms and etiology of peptic ulcer.
18. Elaborate on IBS

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Discuss the etiology, complications and management in Tuberculosis.
20. Elaborate on the types, diagnosis and dietary management in Food allergy.

**VII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
FCS7CJ403 Participatory Program Management (credits: 4)**

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define programme planning?
2. Explain the components of programme development cycle
3. How to form self-help groups?
4. Define diagrammatic presentation techniques
5. Define evaluation
6. What are the characteristics of evaluation?
7. What are the elements of a plan?
8. What are the methods of follow up?
9. Define record analysis
10. Explain project management

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain SWOC
12. What are the elements and criteria for developing a plan?
13. Explain the importance of peoples' participation in programme planning
14. Elaborate the techniques and application of PRA methods in field studies.
15. How to access the monetary and technical support from government in projects?
16. How to analyse the existing extention programmes?
17. Explain different presentation techniques
18. Elaborate on the procedures of recording

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Elaborate on the role of women in project planning and management
20. Explain different supportive techniques used in participatory planning?

**VII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
FCS7CJ404 Building and Services (credits: 4)**

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Differentiate between direct transmission and semi-diffuse transmission of light.
2. What are the guidelines for effective lighting design?
3. Describe the purpose of lighting accessories like switches and sockets.
4. Define resonance in acoustics.
5. Enumerate the types of sound absorptive materials.
6. Explain the function of silt traps in plumbing systems.
7. Define the components of a septic tank.
8. Define the two systems of water supply at the municipal level.
9. Explain the difference between continuous and intermittent water supply systems.
10. What are the primary bathroom accessories?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Critically analyze the methods and materials used for damp proofing and termite proofing in buildings. How do these preventive measures ensure long-term durability and safety?
12. Compare and contrast the various types of sound absorptive materials used in building interiors. Evaluate their effectiveness and suitability for different applications.
13. Evaluate the effectiveness of various traps in plumbing systems, such as gully traps, intercepting traps, grease traps, and silt traps. How do they contribute to waste management?
14. Analyze the components and functioning of a septic tank in waste water disposal. How does it ensure proper waste treatment?
15. Critically assess the importance of sanitary fittings in bathrooms. How do they

enhance hygiene and convenience?

16. Assess the importance of lighting accessories in electrical layouts. How do switches, sockets, and other accessories contribute to user convenience and safety?
17. Analyze the factors influencing sound in interiors, including sound waves, frequency, velocity, and resonance. How do these factors affect the perception of sound quality?
18. Explain the process of drainage and its importance in plumbing systems. How does it differ for different types of drainages?

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Evaluate the factors influencing lighting quality, including brightness, contrast, glare, and color. How do these factors impact human perception and well-being?
20. Discuss the differences between systems of water supply at the municipal and Domestic level, highlighting their advantages and disadvantages.

VII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS7CJ405 Developmental Challenges (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define Disability
2. Explain on Gifted children
3. Explain Juvenile delinquency
4. Differentiate the terms disability and impairment
5. What are the causes of hearing impairment?
6. Define Autism
7. What are the causes of attention deficit hyper active disorder?
8. How to identify language disorder?
9. Define the concepts of children with developmental challenges
10. Explain the types of behaviour problems

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Elaborate on Current status of Disabilities in Indian context
12. Explain adaptive equipment and early intervention of physical disorder
13. Write on educational consideration for the visually impaired children.
14. Give a note on legislations and programmes for developmentally challenged children.
15. Describe on the identification and types of educational approaches for attention deficit hyperactive disorder
16. What are the characteristics and management of Language disorders?
17. Write on classification of speech disorders
18. Explain different methods of educating learning impaired.

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Explain Mentally Challenged under the following heads -Definition and classification, Causes, Identification, Characteristics, Contemporary educational provisions.
20. Elaborate on the nature, classification and management of speech disorders.

VIII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
FCS8CJ406/FCS8MN406 Advanced Food Science (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Discuss on allosteric enzyme.
2. Write a note on parboiling.
3. Explain the structure of starch granules.
4. Give an account of nutritive value of fish.
5. Write a note on genetically modified foods.
6. Discuss on single cell protein.
7. Classify the nutraceuticals.
8. Define CMC
9. Explain fermentation
10. What are the importance of germination?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain the specificity of enzymes.
12. Discuss on breakfast cereals.
13. Describe protein concentrates and isolates.
14. Explain composition and nutritive value of meat.
15. Explain the nutritive value of egg.
16. Give an account of composition of milk.
17. Discuss on GM food, novel food and SCP
18. Differentiate enzymatic and nonenzymatic changes in food

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Describe the complications of anti-nutritional factors present in a pulse.
20. Illustrate the classification food additives.

VIII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
FCS8CJ407/FCS8MN407 Finance and Consumer Behaviour (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. What is the role of consumers in the economy?
2. What is the significance of e-commerce?
3. Define household income and list its sources.
4. What is Engel's Laws of consumption?
5. Define consumer credit and list its sources.
6. Explain the classification of consumer goods.
7. What is the significance of mortgages in meeting emergent expenditure needs?
8. What are Consumer aids?
9. Differentiate between Warranty and guarantee.
10. What is the role of FPO?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Discuss the role of advertisements in influencing consumer behavior and the significance of product labeling and packaging in fair practices.
12. Describe the significance of consumer education in India and its objectives.
13. Discuss the need for financial security arrangements and the principles of family savings and investments.
14. Discuss the importance of maintaining accounts and different methods of account keeping.
15. Discuss the changing nature of consumer behavior in modern markets, including concepts like C2C, B2B, B2C, and C2B.
16. Outline the steps involved in drafting a family budget.
17. Explain the concept of channels of distribution in marketing.
18. Critically assess the concept of green consumerism and its importance in the context of consumerism. Discuss the need for adopting a sustainable/eco-friendly lifestyle as green consumers and its significance in daily consumption practices.

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Evaluate the role of standardization and quality control measures such as ISI, FPO, AGMARK, ISO, Eco mark, Wool mark, Silk mark, Cotton mark, Handloom mark ensuring consumer protection.
20. Discuss the concept, need, and significance of consumer protection in India. Evaluate consumer rights and responsibilities, highlighting their importance in safeguarding consumer interests.

VIII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS8CJ408/FCS8MN408 Technical Textiles (credits- 4)

(Credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. What is technical textiles?
2. What is Globalization?
3. Describe melt blown.
4. Write a short note on Web lay flash spinning
5. What are the specialties of technical Textiles?
6. Write a short note on Nanofibers
7. What is conventional and new developed fibre?
8. What are the applications of technical textiles?
9. What is nano-technology?
10. What are the applications of non-woven in technical textiles?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

1. Describe technical fibres and yarns.
2. What is the process of hydroentanglement?
3. Describe Geo textiles.
4. Describe about and process of technical textile.
5. What is heat setting and chemical process..
6. Explain transport textile.
7. Write a short note about transport textiles .
8. Describe automotive textiles

Section C

[Answer anyone. Each question carries 10 marks] (1x10=10marks)

1. Explain finishing of technical textiles
2. Explain Smart textiles.

VIII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

Elective VI – FCS8EJ401 Macronutrients (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Elaborate on glycogenesis.
2. Write on the concept of bio nutrition.
3. Explain the sources and RDA for protein.
4. Explain the regulation of fatty acid synthesis.
5. Elaborate the biological significance of transamination and deamination .
6. Elaborate on indirect calorimetry.
7. Elaborate on requirement of energy for adults.
8. Define Indian reference women
9. What is resistant starch?
10. Define BMR

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Describe the classification and functions of carbohydrate.
12. Proteins are building block of human body- comment.
13. Describe physical activity based on mode of activities.
14. Explain the interrelationship between carbohydrate, protein and fat metabolism
15. Macronutrients have significant role in regulating body weight. Justify.
16. Explain on water based on (i) functions, (ii) distribution and (iii) water balance.
17. Explain the disturbances in fluid balance in body.
18. Explain bomb calorimeter with a diagram

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Elaborate on metabolism of proteins.
20. Write on regulation of blood glucose concentration and glycaemic index.

**VIII Semester B.Sc. (Family and Community Science CUFYUGP) Degree
Examinations**

Elective V – FCS8EJ402 VISUAL MERCHANDISING (Credits-4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define colour.
2. What do you mean by a line?
3. What are mannequins?
4. Define window display.
5. What is a fixture?
6. Define visual merchandising.
7. What do you mean by graphics and signage?
8. Define light and lighting.
9. What do you mean by POP?
10. Write about the display basics of visual merchandising.

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Write about store exterior and store interior in detail.
12. Describe the importance of window display themes with the help of an illustration.
13. Explain the different types of display techniques.
14. Explain mannequins and its types.
15. Write about the career opportunities in visual merchandising.
16. Explain some of the alternatives to mannequins.
17. Write a short note on visual merchandising and changing face of retail.
18. Explain the role of visual merchandiser.

Section C

[Answer any one. Each question carries 10 marks] (1x10=10 marks)

19. Write about the following topics – i) Attention getting devices ii) Dressing Fixtures
20. Explain the types of display and display settings in detail

VIII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

Elective V- FCS8EJ403 Oncology Nutrition (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Differentiate cancer and tumours.
2. What is carcinogenesis?
3. List down the properties of cancer cells.
4. Give the etiology of cancers.
5. What are the criteria of diagnosing malnutrition?
6. Define oral cancer.
7. Explain prostate cancer.
8. Explain cancer cachexia
9. Define gastric cancer
10. What is colon cancer

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain cancer epidemiology.
12. Discuss on metastasis.
13. Elaborate oncogenesis.
14. Brief on sarcoma and carcinoma.
15. Explain head and neck cancer with symptoms and etiology.
16. Discuss on haematologic malignancies.
17. Explain the benefits of enteral nutrition
18. Describe the biochemical changes in cancer

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Explain oesophageal cancer with cause, symptoms and medical nutrition therapy
20. Explain the importance of vitamins, minerals and botanical herbs in cancer

VIII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

Elective VI – FCS8EJ404 ART AND TEXTILE DESIGN (credits-4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 2 marks] (Ceiling 16 marks)

1. List out Indian paintings.
2. How was painting invented?
3. What do you mean by fresco painting?
4. Name any three symbolic paintings.
5. What are the key features of Mughal paintings?
6. What are the elements of abstract art?
7. List out famous cave paintings in India.
8. What are the main themes that are used in Warli's paintings
9. Mention a feature of Madhubani painting.
10. Name the Motif inspired from Mughal paintings seen in Chikankari Embroidery.

Section B

[Answer All. Each question carries 6 marks] (Ceiling 24 marks)

11. Explain Symbolism in fashion and list down the examples of Symbolism.
12. Give an account of Mysore painting.
13. Write a short note on Expressionism.
14. Design a warli paint motif.
15. Explain the stages of Kerala Mural paintings in detail.
16. How is Gothic Art seen inspired in Textiles.

17. Describe the influence of Greek architecture in Textile design.

18. Explain Contemporary Art.

Section C

[Answer anyone. Each question carries 10 marks] (1x10=10 marks)

19. Explain in detail about modern art.

20. Briefly explain traditional paintings of Kerala.

VIII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

Elective VII- FCS8EJ405 Public Health & Sanitation (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Relation between health and nutrition.
2. List out the indicators of health.
3. Explain on food security.
4. Differentiate between the various methods of anthropometric assessment.
5. List out any two National nutrition health policies.
6. Brief on the impact of malnutrition in productivity.
7. List out the non-nutritional indicators of nutritional status.
8. Explain sanitation
9. Define contamination
10. What is safety?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain the determinants of health status.
12. Brief the relation between nutrition and quality of life.
13. Discuss on National health care delivery system.
14. List out the factors affecting food production and distribution.
15. Elaborate on lathyrism.
16. Brief on the effect of over nutrition in health.
17. Detail on the relevance of environmental and biological factors in maintaining the health status of individuals.
18. Explain biological hazards

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Discuss the relevance of public health nutrition and the role of Public Health nutritionists.
20. Elaborate on the determinants of nutritional status.

**VIII Semester B.Sc. Family and Community Science(CUFYUGP) Degree
Examination**

**Elective VII – FCS8EJ406 FASHION PSYCHOLOGY
(credit:4)**

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 Marks] (Ceiling: 24 Marks)

1. What is encloded cognition?
2. How does fashion influence the body?
3. What is the correct and wrong outfit?
4. What are the factors influencing fashion?
5. Explain the social and psychological aspect of fashion.
6. How does style affect the appearance and personal style of the wearer?
7. Explain the modern take on fashion psychology.
8. What are the psychological barriers to sustainable fashion?
9. “Exposure to social and cultural norms for appearance leads to greater dissatisfaction with the body.” Explain.
10. How does consumer behavior affect fashion consumption?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Write a short note on the purpose of clothing.
12. Briefly explain the market research methods in fashion psychology.
13. Discuss the psychology behind fashion and clothing.
14. Name and explain the theories of fashion.
15. What is wellbeing in fashion? How is it connected to sustainability?
16. Explain how objectification theory is connected with fashion.
17. “People don’t buy dress; they buy an identity.” Explain.
18. Explain the importance of applying psychology in fashion.

Section C

[Answer any one. Each question carries 10 marks] (1x10=10 marks)

19. Explain
 - (a) Mind to wear,
 - (b) Choosing right clothing,

(c) Occasional clothing,

(d) Self-confidence with dressing

20. Explain the effects of dress on the behavior of the wearer in every aspect.

VIII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS8CJ489 Research Methodology (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define applied research
2. What is meant by dependent variable
3. Briefly explain random sampling
4. What are the steps to be remembered in preparing a questionnaire
5. What is meant by hypothesis
6. List the qualities of a good research
7. Define ex post facto research
8. Write on historical research
9. What is an interview method?
10. What is the significance of a diagram in research?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Write a note on experimental design
12. Give a short note on action research
13. Explain briefly observations and its types
14. Write merits and demerits of sampling
15. Explain different methods of sampling
16. Explain meaning and advantage of statistical presentation of data
17. Write a note on measurement in research,
18. How to collect a secondary data?

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. How to write a research proposal? Explain the factors to be considered
20. Define research. Explain the types of research.

MINOR COURSES

I Semester B.Sc. Home Science (CUFYUGP) Degree Examination

FCS1MN101 Human Nutrition (Credits-4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. List out all essential amino acids
2. Give a note on polysaccharides
3. Symptoms of Kwashiorkor
4. Explain the role of PUFA in human body
5. Define EFA. Mention the names.
6. Define Reference Man
7. What is SDA of food
8. What are the Factors affecting Calcium Absorption
9. What are goiterogenic substances
10. What is RDA

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Give a note on Classification of food
12. Explain the Digestion of Carbohydrates
13. Explain functions of Vitamin C
14. Write a note on the role of pancreas in digestion
15. Explain PEM and its treatment
16. Explain anemia and its types
17. Explain deficiency symptoms of Thiamin
18. Explain Vitamin K

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Define BMR. Explain the factors affecting BMR.
20. Describe the metabolism of Carbohydrate.

II Semester B.Sc. Home Science (CUFYUGP) Degree Examination

FCS2MN101 Diet and Health (Credits-4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Explain the physical and physiological changes in lactation.
2. Write on feeding protocol for preterm babies.
3. Comment on food habits of pre-schoolers.
4. Discuss on nutritional requirements of a school going girl (10 years old).
5. Explain the risk factors of infertility.
6. Elaborate on the management of high risk pregnancies.
7. Briefly explain the changes that occur in gastrointestinal tract at high altitude.
8. Why is anaemia prevalent among adolescent girls?
9. Briefly Explain PEM
10. Write a note on prevention and causes of night blindness

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Write on nutritional and dietary requirements during pregnancy.
12. Explain the intervention strategies to prevent malnutrition in preschool children.
13. Write on importance of growth monitoring.
14. Describe the role of nutrition in academic performances.
15. Plan a menu for adolescent boy (16 years- vegetarian) and analyse the adequacy for the concerned age group.
16. Explain free radical hypothesis.
17. Health is wealth – Justify the sentence based on link between nutrition and health.
18. Elaborate on physiological changes and dietary modifications on old age

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Describe the benefits of breast feeding.

20. Discuss the nutritional requirements of adult men on their mode of activity.

III Semester B.Sc. Home Science (CUFYUGP) Degree Examination

FCS3MN201 Nutrition Counselling (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Discuss on professional ethics in diet counselling.
2. Write a note on facilitative counselling.
3. Explain the client centered theory in counselling.
4. Give an account of objectives of nutrition counselling.
5. Write a note on nutrition counselling for old age.
6. Discuss on individual nutrition education.
7. Write a note on factors consider in nutrition counselling for HIV/ AIDS patients.
8. What are the steps in counselling process?
9. Define nutritional counselling
10. Define SOAP

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain the skill and techniques for counselling.
12. Discuss on different stages of counselling.
13. Describe the factors consider in nutrition counselling for pregnant woman.
14. Explain nutrition counselling for cancer patient.
15. Explain the different education materials for nutrition education.
16. Give an account of types of nutrition education.
17. Discuss on methods for nutrition education
18. Elaborate on IDA

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Describe the theories used in counselling process.
20. Illustrate the nutrition counselling for coronary heart diseases.

I Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS1MN102 Basics of Food Science (Credits-4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Write components of starch
2. Explain EFA
3. Briefly explain Tenderization of meat
4. What are the different pigments present in vegetables and its effect on cooking
5. Explain Food groups
6. Define gelatinization
7. Explain food pyramid
8. Explain different methods of cooking
9. What is meant by EFA
10. Explain nutritional significance of Fish

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Write a note on Stages of sugar cookery
12. Give a short note on rancidity
13. Explain briefly postmortem changes
14. Write the merits of germination
15. Explain the factors affecting gluten formation
16. Explain parboiling and its advantages and disadvantages
17. Explain Types of browning.
18. Write on crystallization

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Explain the structure of a cereal grain with diagram
20. Different methods of food preservation

II Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS2MN102 Food Preservation (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 2 marks] (Ceiling: 16 Marks)

1. Define sterilization?
2. What is aseptic packaging?
3. Write any four advantage of hurdle technology?
4. Write a note on ohmic heating?
5. What are food additives?
6. Define pasteurization
7. What is canning?
8. Define fermentation
9. What is food preservation?
10. What is blanching?

Section B

[Answer All. Each question carries 6 marks]

(Ceiling 24 marks)

11. What are the factors determining the dosage of radiation in food?
12. Explain different methods used in drying?
13. Describe about the changes that happen during freezing?
14. Explain different food concentration methods?
15. Differentiate between refrigeration and freezing?
16. Write a note on Irradiation.
17. Discuss the method of smoking.
18. Analyse the challenges in Food preservation.

Section C

[Answer any one. Each question carries 10 marks]

(1x10=10marks)

19. Elaborate on traditional and modern methods of food preservation?
20. . Explain the methods of preservation by using high temperature?

III Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
FCS3MN202 Food Toxicology (credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define toxicology
2. Explain the scope of toxicology
3. What are the goals of toxicology
4. Explain the basic concept of Toxicology
5. What are hydrocarbons?
6. Write on different colours which act as toxins in our body
7. Stabilizers can be toxic – justify
8. Explain on GM foods
9. What is xenobiotics?
10. Explain radiation

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain the absorption, assimilation, utilization and excretion of xenobiotics
12. Elaborate on biotransformation
13. Explain the health hazards of radioactive substances
14. Elaborate on the toxicity of heavy metals
15. Explain seafood toxin
16. Discuss the toxins produced by plants
17. Explain the biological affect of radiations
18. Elaborate on photochemical products

Section C

[Answer any one. Each question carries 10 marks] (1x10=10marks)

19. Discuss on the substances intentionally added to foods
20. Elaborate on the types of pesticide residues in food.

VOCATIONAL MINOR COURSES

First Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
FCS1VN101 Basic Bakery Management

(Credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Define staling in the context of bread and briefly explain two factors that contribute to the staling process.
2. Identify two properties that are desirable in pasta products and explain how these properties affect the overall quality
3. Outline the processing steps involved in making a cake.
4. List out by-products obtained during wheat milling and write down their applications in Food industry
5. Explain the application of HACCP in ensuring food safety in the bakery industry.
6. Provide a concise description of two critical steps in the processing of wafers, emphasizing factors that influence their thin and crispy texture.
7. Differentiate between the sponge and dough methods in bread making.
8. Define gelatinization of starch. Provide an example of a food product where this process is crucial.
9. Provide a concise organization chart for the bakery.
10. Discuss the recommended baking temperatures for different types of baked goods, and explain the importance of temperature control in the baking process.

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain the role of ingredients in bread making.
12. Outline the steps involved in the processing of pasta.
13. Identify and explain common faults in cakes, providing remedies for each to enhance the overall quality of the cake.

14. Elaborate on quality control on raw materials and finished products in the baking industry.
15. Briefly explain the processing of cookies and identify two key properties that are crucial in determining the quality of cookies.
16. Explain the processing steps involved in making biscuits.,
17. Define the concept of rheology and its significance in the context of baking, emphasizing how it influences the texture and quality of baked products.
18. Write a note on key strategies for effective waste management in the baking industry.

Section C

[Answer anyone. Each question carries 10 marks] (1x10=10marks)

19. Write a note on bread making.
20. Explain on bakery layout and design.

II Semester B.Sc. Family and Community Science (CUFYUGP) Degree

Examination

FCS2VN101 Fruit and Vegetable Processing (Credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks]

(Ceiling: 24 Marks)

1. Define fruits. Give three examples of it.
2. Define vegetables. Give three examples of it.
3. What is tomato puree and paste?
4. What do you mean by slicing and peeling?
5. What is the importance of picking of fruits and vegetables?
6. What do you mean by pretreatment? Give three pre-treatments used in fruits and vegetable industries.
6. What do you mean by solar drying and freeze-drying?
7. What do you mean by sorting and grading?
8. Define Canning. Who invented Canning?
9. Detail on primary processing of fruits and vegetables.
10. What do you mean by pectin chemistry?

Section B

[Answer All. Each question carries 6 marks]

(Ceiling: 36 Marks)

11. Explain dehydration technologies in fruits and vegetables.
12. Explain on preparation of jam and jellies.
13. Detail on defects in jam and jellies.
14. Explain on manufacturing of tomato juice and puree.
15. Explain common preservatives used in the fruits and vegetable industry.
16. Detail on the preparation of preserves and candied fruits.
17. Explain waste management in the fruits and vegetable processing unit.
18. Explain on re-packing of fresh fruits and vegetables.

Section C

[Answer anyone. Each question carries 10 marks]

(1x10=10marks)

19. Elaborate on steps in pickling.
20. Detail on canning of fruits and vegetables.

III Semester B.Sc. Family and Community Science (CUFYUGP) Degree

Examination

FCS3VN201 Dairy processing (Credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks]

(Ceiling: 24 Marks)

1. What do you mean by dairy technology?
2. Define milk. Give two examples of types of milk.
3. What do you mean by the Pearson Square method?
4. What do you mean by Centrifugal cream separator?
5. What do you mean by evaporated milk and condensed milk?
6. What do you mean by standardized milk? Mention its purpose.
7. Difference between whole milk and skim milk.
8. What are the steps in paneer manufacturing?
9. What do you mean by homogenization? What is the purpose of homogenizer?
10. Difference between CIP and SIP used in the dairy industry.

Section B

[Answer All. Each question carries 6 marks]

(Ceiling: 36 Marks)

11. Explain on sources of milk.
12. Explain on factors affecting milk composition.
13. Detail on types of cooling systems.
14. Explain sterilization and homogenization.
15. Difference between reconstituted milk and double-toned milk
16. Detail on special milk.
17. Detail on whole milk powder processing.
18. Explain cleaning procedures in the dairy industry.

Section C

[Answer anyone. Each question carries 10 marks]

(1x10=10marks)

19. Elaborate on steps in milk processing.
20. Detail on methods of preparation of ice cream.

VIII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS8VN301 Food Packaging and Labelling (Credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. What are the functions of packaging?
2. Classify and describe the levels of packaging
3. Discuss four physical changes in food deterioration
4. Differentiate between packing and packaging
5. Explain the process of aseptic packaging
6. Differentiate between MAP and CAP
7. What are the different types of packaging papers?
8. What are thermochromic inks?
9. Differentiate between linear barcodes and 2D barcodes
10. Write the importance of labeling in food packages.

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Explain the composition of the tetra pack with a diagram.
12. Explain different deteriorative reactions in food
13. Differentiate between intrinsic and extrinsic factors in food deterioration.
14. Differentiate between intelligent and active packaging.
15. Differentiate between MAP and CAP
16. Plastic packing materials have become a major problem in waste management. Explain the reasons for the increased usage of plastic packing materials. Give Alternatives to reduce plastic packing materials.
17. Explain five industrial printing processes.
18. Examine the legislative and safety aspects of food packing.

Section C

[Answer anyone. Each question carries 10 marks] (1x10=10marks)

19. What is the purpose of labelling in food packing? How does it influence the Customers? Why are health claims and nutritional information important on food? Labels?

20. Discuss food deterioration, and explain the various types of deterioration reactions
In food.

I Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination

FCS1VN102 Spices and Plantation Crops (Credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Distinguish between oleoresin and essential oils
2. Mention the properties of major spices.
3. Discuss applications of spice oils in food processing.
4. What are the classifications of spices?
5. Define flat bloom.
6. What do you mean by curing and grading in turmeric production?
7. Discuss common methods to detect adulteration in spices
8. What is conching?
9. List out some uses of white pepper, dehydrated green pepper, and pepper oil
10. What is decaffeinated coffee?

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Describe the refining and processing techniques involved in the production of pepper.
12. Discuss about types of coffee.
13. Give a note on the extraction of spice oils.
14. Write a note on chocolate processing.
15. Elaborate on the chemical composition of spices and the importance of quality control in the spice industry.
16. Write a note on the chemistry of tea.
17. Outline the steps involved in the extraction of oleoresin.
18. Discuss the production methods and applications of ginger oleoresin and bleached ginger.

Section C

[Answer anyone. Each question carries 10 marks] (1x10=10marks)

19. Write a detailed note on the processing of various types of tea.
20. Describe the processing techniques involved in the production of different types of pepper, highlighting key steps and their significance.

II Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examinations

FCS2VN102 Food Additives and Adulteration (Credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Differentiate between intentional and unintentional food additives, providing examples of each.
2. Write about the principle of Paper Chromatography.
3. Discuss the use of propionic acid and acetic acid as preservatives in the context of food products. Provide examples of foods where these acids are commonly employed.
4. Define food adulteration. Discuss the key factors that contribute to the occurrence of adulteration in the food supply chain.
5. Explain the characteristics of caramel, annatto, and betanin.
6. What is the significance of the E-numbering system in the regulation of food additives, and how does it contribute to ensuring food safety? Provide some examples.
7. Define DART. Give some examples.
8. Discuss the advantages of using Thin-layer Chromatography for the detection of artificial sweeteners
9. Differentiate between nutritive and non-nutritive sweeteners. Choose one example from each category.
10. Explain how sulfur dioxide act as a preservative in the food industry. Mention a specific application where sulfur dioxide is utilized.

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Discuss about natural food additives.
12. Provide an overview of emulsifiers, stabilizers and thickeners in food.
13. Explain the concept of functional classes in the context of food additives and provide how they serve technological purposes in the food industry.
14. Elaborate on the Procedure of determination of caffeine in food products
15. Write about the procedure for the identification of any natural color.
16. Elaborate on the safety assessment for food additives.

17. Discuss the common adulterants found in milk and spice. Outline the tests that can be conducted to detect their presence

18. Describe the role of nitrate and nitrite in preserving foods, particularly in meat products. Highlight their impact on food safety and quality.

Section C

[Answer anyone. Each question carries 10 marks] (1x10=10marks)

19. Write down the procedure for determination of saccharin by HPLC

20. Give a note on permitted additives and its recommended levels of fruits and vegetables

III Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examination
FCS3VN202 Animal Food Processing (Credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. Write about the classification of fish.
2. Describe spoilage of fish.
3. What do you mean by curing?
4. Differentiate FPC and FPE.
5. Discuss briefly on the nutritive value of smoked fish.
6. Define carcass.
7. What do you mean by the emulsification capacity of meat?
8. Describe the pre-smoking process.
9. What is Rigor mortis?
10. Explain the method of canning of meat and fish.

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Discuss the post-mortem changes in meat.
12. Brief about different egg proteins.
13. Explain the salting methods used for the preservation of fishes.
14. Describe the methods of thermal processing used for meat preservation.
15. What are the methods of egg preservation?
16. Elaborate on smoke production and its components.
17. Explain the composition of meat and the phenomenon of marbling.
18. Describe the processing of meat products.

Section C

[Answer anyone. Each question carries 10 marks] (1x10=10marks)

19. Discuss in detail the Composition and nutritive value, characteristics of
Fresh egg.
20. What do you understand about meat quality? Discuss the tests for
Assessment of raw meat.

VIII Semester B.Sc. Family and Community Science (CUFYUGP) Degree Examinations

FCS8VN302 Food Safety and Quality Control (Credits: 4)

Maximum Time: 2 hours

Maximum Marks: 70

Section A

[Answer All. Each question carries 3 marks] (Ceiling: 24 Marks)

1. What are Physical Hazards?
2. What is Risk assessment?
3. What is Codex Alimentarius?
4. Brief on Food Safety and Standard Act 2006.
5. Discuss four popular ISO Standards.
6. Describe the basic components of food labeling.
7. Write about the Export-import policy.
8. Describe briefly about TQM.
9. Discuss briefly on documentation and audits.
10. Define Hazard.

Section B

[Answer All. Each question carries 6 marks] (Ceiling: 36 Marks)

11. Describe briefly on Global Food Safety Initiative.
12. Write in detail about Risk assessment and its management.
13. Discuss the types of food hazards.
14. List and describe different national and international food laws and regulations.
15. Foodborne illness is caused by to lack of knowledge about food hygiene, kitchen Hygiene and personal hygiene. Discuss in brief.
16. Describe in detail the sampling procedures and plan
17. Write in detail about different quality management systems in India.
18. TQM is a quality assurance system. State its elements and applications.

Section C

[Answer anyone. Each question carries 10 marks] (1x10=10marks)

19. What do you understand by HACCP? Discuss the principles and the potential Benefits of its implementation in a catering establishment.
20. Explain the Quality attributes, Objectives, importance, and functions of quality Control.