MOTHER TERESA WOMEN'S UNIVERSITY

KODAIKANAL

DEPARTMENT OF HOME SCIENCE

Mother Teresa Women's University, Kodaikanal

Department of Home Science

Choice Based Credit System (CBCS)

(2021-2022 onwards)

B.Sc-Home Science

1. About the Programme *

The program of B.Sc. Home Science offers the students to gain the requisite knowledge, skills, and aptitude in all the areas ofFood Science and Nutrition, Human Development, Resource Management, Textile and Clothing, Communication &Extension.The program provides professional skills in food, nutrition, textiles, housing, product making, communication technologies and human developmentfor economic empowerment of the student in particular, and community in general. They gain and provide employment in research organizations, food and textile industries, dietetic practice, education and child development domains, strategic planning and communication technologies.

2. Program Educational Objectives (PEOs)

- To impart the fundamental knowledge in all the major domains of Home Science and related areas of studies
- To develop competency of students in application of knowledge in different settings i.e. family, community, workplace etc.
- To impart and cultivate skills for wide range of professions related Hoe Science
- To prepare them for higher degrees with specializations
- To create professionals in home science related areas and to foster research acumen, teaching skills for career prospects in government and public services or to emerge as successful entrepreneurs.

3. Eligibility

Candidates for admission to the first year of the Degree of B.Sc-Home Science shall be required to have passed the Higher Secondary Examinations (with the specialization-(Chemistry/ Biology/ Home Science/Nursing/ Science-based disciplines) conducted by the Government of Tamil Nadu or any recognized board.

4. General Guidelines for UG Programme

i. **Duration:** The programme shall extend through a period of 6 consecutive semesters and the duration of a semester shall normally be 90 days or 450 hours. Examinations shall be conducted at the end of each semester for the respective subjects.

ii. **Medium of Instruction:** English

iii. **Evaluation:** Evaluation of the candidates shall be through Internal Assessment and External Examination.

Evaluation Pattern	Theory		Practical	
	Min	Max	Min	Max
Internal	**10**	**25**	**10**	**25**
External	**30**	**75**	**30**	**75**

- **Internal (Theory): Test (15) + Assignment (5) + Seminar/Quiz(5) = 25**
- **External Theory: 75**

- **Question Paper Pattern for External examination for all course papers.**

Max. Marks: 75 **Time: 3 Hrs.**

S.No.	Part	Type	Marks
1	**A**	**10*1 Marks=10** Multiple Choice Questions(MCQs): 2 questions from each Unit	**10**
2	**B**	**5*4=20** Two questions from each Unit with Internal Choice (either / or)	**20**
3	**C**	**3*15=45** Open Choice: Any three questions out of 5 : one question from each unit	**45**
Total Marks			**75**

*** Minimum credits required to pass: 156**

5. Conversion of Marks to Grade Points and Letter Grade

(Performance in a Course/ Paper)

Range of Marks	Grade Points	Letter Grade	Description
90 – 100	9.0 – 10.0	O	Outstanding
80-89	8.0 – 8.9	D+	Excellent
75-79	7.5 – 7.9	D	Distinction
70-74	7.0 – 7.4	A+	Very Good
60-69	6.0 – 6.9	A	Good
50-59	5.0 – 5.9	B	Average
40-49	4.0 – 4.9	C	Satisfactory
00-39	0.0	U	Re-appear
ABSENT	0.0	AAA	ABSENT

6. Attendance

Students must have earned 75% of attendance in each course for appearing for the examination. Students with 71% to 74% of attendance must apply for condonation in the Prescribed Form with prescribed fee. Students with 65% to 70% of attendance must apply for condonation in the Prescribed Form with the prescribed fee along with the Medical Certificate. Students with attendance lesser than 65% are not eligible to appear for the examination and they shall re-do the course with the prior permission of the Head of the Department, Principal and the Registrar of the University.

7. Maternity Leave

The student who avails maternity leave may be considered to appear for the examination with the approval of Staff i/c, Head of the Department, Controller of Examination and the Registrar.

8. Any Other Information

In addition to the above mentioned regulations, any other common regulations pertaining to the UG Programmes are also applicable for this Programme.

9. Programme Outcomes (POs)

The expected program outcomes on completion of B.Sc., Home Science courses are:

PO1: To understand and appreciate the role of interdisciplinary sciences in the developmentand well-being of individuals, families, and communities.

PO2: To understand the science and technologies that enhance the quality of life of people.

PO3: To create dexterity in the field of food science, textiles, resource development, and community development.

PO4: To inculcate the need to create awareness on nutrition and health problems in the family and community.

PO5: To enhance professional and entrepreneurial skills for economic empowerment of self in particular, and community in general.

PO6: To acquire the ability to take up careers in academics, research, and to become an entrepreneurs.

PO7: To apply the contextual knowledge of the Home Science to function effectively in society.

10. Programme Specific Outcomes

On completion of this Programme, the learners will

PSO1: understand the nature and role of basic concepts in Home Science for the welfare of the community.

PSO2: inculcate skill-based knowledge in the area of food science and nutrition, Textiles, and life span development.

PSO3: applyresearch knowledge in various disciplines of Home Science.

PSO4:promote entrepreneurs in the field of Home Science.

PSO5:getemployments in hospitals, fashion designing companies, and public healthsectors,etc.

UG Curriculum

B.Sc. HOME SCIENCE SYLLABUS

S.No	Paper Code	Title of The Course	Credits	Hours		CIA	ESE	Total
				T	P			
FIRST SEMESTER								
1	U21LTA11	PART-I-Tamil I	3	6	-	25	75	100
2	U21LEN11	PART-II-English-I	3	6	-	25	75	100
3	U21HST11	CORE I Fundamentals of Nutrition and Food Science	4	5	-	25	75	100
4	U21HSP11	CORE II-Practical-I Food Science Practical	4	-	6	25	75	100
5	U21CHA11	ALLIED I – Chemistry	4	5	-	25	75	100
6	U21EVS11	Environmental Studies	2	2	-	25	75	100
7	U21PELS11	Professional English-I	4	6	-	25	75	100
		Total	**24**	**36**		**-**	**-**	**700**
SECOND SEMESTER								
8	U21LTA22	PART-I Tamil II	3	6	-	25	75	100
9	U21LEN22	PART-II-English II	3	6	-	25	75	100
10	U21HST21	CORE-III Fundamentals of Textiles and Processing	4	5	-	25	75	100
11	U21HST22	CORE-IV Human Development –I	4	5	-	25	75	100
12	U21CHA22	Allied- II Chemistry Practical	4	-	5	25	75	100
13	U21VAE21	Value Education	3	3	-	25	75	100
14	U21PELS22	Professional English-II	4	6	-	25	75	100
		Total	**25**	**36**		**-**	**-**	**700**
THIRD SEMESTER								
15	U21LTA33	PART-I Tamil III	3	6	-	25	75	100
16	U21LEN33	PART-II English III	3	6	-	25	75	100
17	U21HST31	CORE-V Family Resource Management-I	4	5	-	25	75	100
18	U21HSA33	Allied III – Biochemistry	4	5	-	25	75	100
19	U21HSE311 U21HSE312 U21HSE313	ELECTIVE-I Children With Special Needs Human Physiology Traditional Indian Textiles	3	4	-	25	75	100
20	U21MSS31	SBE I-Managerial skills	2	2	-	25	75	100
21		Non-major elective-I	2	2	-	25	75	100
		Total	**21**	**30**		**-**	**-**	**700**

FOURTH SEMESTER								
22	U21LTA44	PART-I-Tamil IV	3	6	-	25	75	100
23	U21LEN44	PART-II-English IV	3	6	-	25	75	100
24	U21HST41	CORE VI- Diet for Diseases	4	4	-	25	75	100
25	U21HSP42	CORE VII - Human Development Practical	4	-	4	25	75	100
26	U21HSA44	ALLIED IV - Biochemistry Practical	4	-	4	25	75	100
27	U21HSE421 U21HSE422 U21HSE423	ELECTIVE-II Interior Design and Decoration Food hygiene and sanitation Development Communication	3	3	-	25	75	100
28	U21CSS42	SBE-II Computer skills for office management	2	-	2	25	75	100
29		Non-major elective-II	2	2	-	25	75	100
		Total	**25**	**30**		**-**	**-**	**700**
FIFTH SEMESTER								
30	U21HST51	CORE-VIII Extension education	4	5	-	25	75	100
31	U21HST52	CORE-IX Fashion design	4	5	-	25	75	100
32	U21HST53	CORE-X Family Resource Management-II	4	5	-	25	75	100
33	U21HST54	CORE-XI Human development-II	4	5	-	25	75	100
34	U21HSP53	CORE- XII Diet for Diseases Practical	4	-	5	25	75	100
35	U21HSE531 U21HSE532 U21HSE533	ELECTIVE-III Entrepreneurship development Food service management Basics of design	3	3	-	25	75	100
36	U21HSS53	SBE-III House keeping	2	2	-	25	75	100
		Total	**25**	**36**		**-**	**-**	**700**
SIXTH SEMESTER								
37	U21HST61	CORE-XIII Fundamentals of apparel design	4	5	-	25	75	100
38	U21HST62	CORE-XIV Communication and media skills	4	5	-	25	75	100
39	U21HST63	CORE- XV Family dynamics	4	5	-	25	75	100
40	U21HST64	CORE-XVI Community development	4	5	-	25	75	100
41	U21HST65	CORE-XVII Food microbiology	4	5	-	25	75	100
42	U21HSE641 U21HSE642 U21HSE643	ELECTIVE-IV Gender and development Rural Program planning Bakery and confectionery	3	3	-	25	75	100

43	U21HSS64	SBE-IV Food fermentation	2	2	-	25	75	100
44	U21EAS61	Extension activities (NSS/NCC/RRC/YRC/Physical education)	3	-	-	-	-	100
		Total	**28**	**30**		**-**	**-**	**800**
		Grand total	**148 Credits**	**193 Hours**		**-**	**-**	**4400**

B.Sc-Home Science (Three-year Undergraduate programme)

- 8 Language papers
- 17 Core papers (14 theory and 3 practical)
- 4 Allied papers (2theory+ 2 practical)
- 4 Elective theory papers with 3 options

Non -Major Elective

P.No	Paper Code	Title of The Course	Credits	Hours	CIA	ESE	Total
1	U21HSN311	Basics of nutrition	2	2	25	75	100
2	U21HSN312	Basics of fashion concepts	2	2	25	75	100
3	U21HSN421	Fibre to fabric	2	2	25	75	100
4	U21HSN422	Food preservation	2	2	25	75	100

Additional credit courses (Two credit courses)

U21HSO31 - Online course 3rd semester

U21HSI41-Internship 4th semester

U21HSV51 -Value added course 5th semester (Food biotechnology)

SEMESTER-I

Course Code	U21HST11	FUNDAMENTALS OF NUTRITION AND FOOD SCIENCE	L	T	P	C
CORE -I			5		-	4
Cognitive Level	**K2:**Knowledge **K3:** Understand					
Learning Objectives	The course aims to 1. To understand the functions of food, basic concepts of food groups, and balanced diet. 2. To describe the functions of various nutrients and their sources & gaining knowledge about clinical manifestations of excess/ deficiency of nutrients. 3. To describe ways of reducing nutrient losses during cooking and methods of enhancement of nutritional quality of foods.					

Unit I Food groups

Food definition, functions of food, food groups-: energy-yielding foods, body building foods, protective foods, classification, five food groups, seven food groups, balanced diet- definition, planning of balance diet, Recommended Dietary Allowances (RDA) Dietary guidelines.

Unit II Cereals and Pulses

Cereals: Structure and nutritive value of rice and wheat, Gelatinization, Process of milling and malting -wheat, Rice, Gluten formation, Nutritive value of millets - ragi, bajra. Pulses: Germination process, factors affecting the cooking quality of pulses, composition, nutritive value, and its advantages in cookery.Cereals-structure, nutritive value, classification, processing, milling, Pulses and legumes - nutritive value, processing in pulses, toxins in pulses.

Unit IIIVegetables and Fruits Vegetables

Vegetables and Fruits Vegetables – Selection of vegetables, Nutritive value, Changes in nutritive value before and after cooking, Effect of cooking on the vegetable pigments.- chlorophyll, carotenoids, anthocyanin, anthoxanthin. Fruits- Classification, nutritive value, ripening of fruits, Effect of browning and its prevention, Storage of fruits.

Unit IV Milk and meat products

Milk and Milk Products: Types of milk, pasteurization of milk, composition and nutritive value, milk products – cheese, paneer, and khoa Egg: Structure, composition and nutritive value, Qualitative determination of egg and its role in cookery. Meat: Structure, composition, and nutritive value of meat, the cutting process of meat, cooking changes in meat, and tenderness of the meat. Poultry-classification, Nutritive value, Selection and cooking methods poultry. Fish -selection of fish, Structure, composition, and nutritive value.

Unit V Fats and sugar

Fats, Sugar, Beverages and Spices Fats and Oils- composition of common fats and oils, smoking temperature, rancidity, and role of fats and oils in cookery. Sugar – Nutritive value, sugar-related products, stages of sugar cookery, Crystallization, Factors affecting

crystallization. Beverages: classification, nutritive value - coffee, tea, cocoa, milk-based beverages, fruit juices, and aerated beverages. Spices and condiments – Types and use in Indian cookery, Medicinal value.

Text books:

1) Srilakshmi, B. *Food science*. New Age International, 2003.
2) Potter, Norman N., and Joseph H. Hotchkiss. *Food science*. Springer Science & Business Media, 2012.
3) Manay S and Swamy S, Food Facts and Principles, New Age International (P) Ltd Publishers, New Delhi, 2001.

Reference books

1. Swaminathan, M., Food Science, Chemistry and Experimental Foods, Bappco Publishers, 2005.
2. Sivasankar B, Food Processing and Preservation, Prentice-Hall of India Private Limited, New Delhi, 2002

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Understand the functions of food, basic concepts of food groups, and a balanced diet.
K2	CO2	Understand the selection, nutritional contribution, and changes during cooking of the commonly consumed foods.
K2	CO3	Understand functions of various nutrients and their sources & gaining knowledge about clinical manifestations of excess/ deficiency of nutrients.
K3	CO4	Develop an understanding of the methods of preparing food.
K2	CO5	Understand the concept of nutrient losses during pre- preparation and preparation of food.

Mapping of COs with POS & PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	S	M	M	S	S	M	M	M	S
CO2	S	S	S	M	M	S	S	S	S	S	M	M
CO3	S	S	S	S	S	S	S	S	S	M	S	S
CO4	S	S	S	M	M	M	S	S	S	M	S	S
CO5	S	S	M	S	S	S	S	S	S	S	S	S

Strongly Correlating (S)	-	3 Marks
Moderately Correlating (M)	-	2 Marks
Weakly Correlating (W)	-	1 Mark
No Correlation (N)	-	0 Mark

Course Code	U21HSP11	FOOD SCIENCE PRACTICAL	L	T	P	C
CORE -II			-	-	6	4
Cognitive Level	**K2:** Understand**K3:** Apply **K5:** Evaluate					
Learning Objectives	Course aims to 1. To understand the advantages and disadvantages of cooking methods on the stability of nutrients. 2. To analyze the effect of processing and storage on the nutritional composition of foods. 3. To learn the factors influencing the cooking quality of different foods.					

I. Grouping of foods

a. Basic 4, 5, 7, and 11, Meaning of foods – solids, liquids, and butter.
b. My plate

Familiarizing with laboratory equipment, procedure, and learn to weigh food ingredients.

II. Experimental cookery of cereals

Preparation of cereal products using rice, wheat, ragi based on steaming, absorption, pressure cooking, and straining methods. Steaming, boiling, and pressure -cooking separation of the gluten content of Wheat.

III. Experimental cookery of Pulses

Effect of Cooking in hard and soft water, alkali.

IV. Experimental cookery of vegetables, Green leafy Vegetables

Study on the effect of acid, alkali, heat, and time on the color, texture, and flavour.

V. Milk

Preparation of paneer, Curd, and Whey water using different types of milk. (Identification of physical parameters of developed products)

VI. Stages of sugar cookery

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Understand the fundamentals of cereals, pulses, fruits & vegetable processing, equipment, and products.
K2	CO2	Demonstrate the different methods of cooking.
K4	CO3	Analyze Appropriate Cooking Method To Conserve Nutrients.
K5	CO4	Evaluate the basic methods and principles involved in cooking.
K5	CO5	Evaluate the change of pigment during cooking

Mapping of Cos with POS & PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	M	S	M	M	S	S	M	M	M	S
CO2	S	S	S	M	M	S	S	S	S	S	M	M
CO3	S	S	S	S	S	S	S	S	S	M	S	S
CO4	S	S	S	M	M	M	S	S	S	M	S	S
CO5	S	S	M	S	S	S	S	S	S	S	S	S

Strongly Correlating (S)	-	3 Marks
Moderately Correlating (M)	-	2 Marks
Weakly Correlating (W)	-	1 Mark
No Correlation (N)	-	0 Mark

SEMESTER-II

Course Code	U21HST21	FUNDAMENTALS OF TEXTILES AND PROCESSING	L	T	P	C
CORE -III			5	-	-	4
Cognitive Level	**K2:** Understand**K3:** Apply**K5:** Evaluate					
Learning Objectives	Course aims to 1. Understand the textile fibers, their properties, and their uses. 2. Impart knowledge on spinning, fabric production. 3. Develop the skill to choose appreciate dyes and printing techniques for a given fabric.					

Unit I Textile fibers

Fiber – Definition, Meaning, and Classification of Textiles Fibers- Natural fiber-cotton, Flax, silk, wool- origin, manufacturing process, properties, and end-uses. Minor Textile fibers-, properties and uses.Regenerated fibers-Rayon and acetate-origin, manufacturing process, properties, and end-uses.

Unit II Synthetic fibers

Synthetic fibers: Nylon, Dacron, Orlon, and Acrylic- origin, manufacturing process, properties, and end-uses. Spinning –Definition, meaning, types of spinning. Yarn and Twist – Definition, counts of yarns.Meaning and Classification -natural, manmade yarns and Novelty yarns.Blends and Mixtures (understanding concepts only).

Unit III Fabric structure

Fabric Structure: Weaving- Definition, Meaning, parts, and functions of the simple loom. Types of weaves- Basic weaves and fancy weaves-Mock leno, honeycomb, huck-a-back, backed cloth, dobby, jacquard. Non-woven, knitting- Definition, Meaning, classification of knitting, Knotting, Lacing, Braiding, Bonding and Felting.(Understanding of the concepts only).

Unit IV Textile finishing

Textile Finishing –Basic finishes-Singeing, De-sizing, Scouring bleaches, Mercerizing, Napping, Sanforising, Special finishes –Antimicrobial, Water-repellent, and Waterproof finishes, Flame Resistant, Stain Resistant, finishes suitable to Natural and manmade fibers.

Unit V Dyeing

Dyeing- Definition of Dyes, Meaning and concept of Dyes, Classification of dyes, Dyes suitability to various fibers. Methods of Dyeing- Stock dyeing, yarn dyeing, piece dyeing, cross, and union dyeing. Printing – Definition, Styles of printing-Direct, Discharge, Resist. Colour Fastness.

Text books:

1. E.P.G. Gohl, L.D. Velensky, “Textile Science” CBS Publishers and Distributors, 2003.
2. AJ. Hall. “The standard handbook of Textiles”, Wood head Publishing 8th edition 2004.

3. P.V. Vidyasagar, “Hand Book of Textiles”, A. Mittal Publications, 2005 5.Sara J. Kadolph, “Textiles”, Prentice-Hall, 10th edition 2007.

Reference books

1. Abbott, Albert, and Michael Ellison, eds. *Biologically inspired textiles*. Elsevier, 2008.
2. ADOLF, FRANZ-PETER. "The structure of textiles: an introduction to the basics." In *Forensic Examination of Fibres*. Taylor and Francis London, 1999.
3. Udale, Jenny. *Basics Fashion Design 02: Textiles and Fashion*. Vol. 2. Ava Publishing, 2008.

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Understand the textile fibers, their properties, and their uses.
K3	CO2	Impart knowledge on spinning, fabric production.
K2	CO3	Gain knowledge of different types of textile fibers, origin, classifications, and properties.
K4	CO4	Able to identify different fiber types based on their physical and chemical parameters.
K5	CO5	Acquire knowledge in dyeing and finishing.

Mapping of COs with POS & PSOs:

CO/ PO	PO 1	PO2	PO3	PO4	PO5	PO6	PO 7	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	S	M	S	S	S	S	S	S	S	S
CO2	S	S	S	M	S	S	S	S	S	S	S	S
CO3	S	S	S	M	S	S	S	S	S	S	S	S
CO4	S	S	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	M	S	S	S	S	S	S	S	S

Strongly Correlating (S)	-	3 Marks
Moderately Correlating (M)	-	2 Marks
Weakly Correlating (W)	-	1 Mark
No Correlation (N)	-	0 Mark

Course Code	U21HST22	HUMAN DEVELOPMENT – I	L	T	P	C
CORE -IV			5	-	-	4
Cognitive Level	**K2:** Understand **K3:** Apply					
Learning Objectives	Course aims to enable the students to 1. become knowledgeable about the basic concepts in Human Development 2. understand the growth processes taking place from conception till childhood period.					

Unit IFundamental Concepts

Fundamental Concepts: Introduction to Human Development – Significance – Stages of Life Span Growth and Development - Meaning, principles, Factors influencing. Nature – Nurture controversy. Methods of child study-projective technique, observation, experimentation, case study (elementary treatment). Needs of Children.

Unit II Pre-natal development

Pre-natal Development and Child Birth: Conception, Stages of prenatal development. Signs and symptoms of Pregnancy.Common discomforts and complications of Pregnancy.Factors influencing prenatal development.

Maternal mortality – Causes and prevention. Child Birth – stages and types. Post-natal care of the mother.

Unit III Infant development

Infant Development: Period of Infancy – Appearance of the new-born- size – physical proportion and physiological functions; sensory abilities of the new-born. Low birth weight, premature babies.

Apgar test, care of the new-born, Immunization. Infant feeding – Breast feeding and its advantages, bottle feeding, and supplementary feeding.

Unit IV Babyhood years

Development during Babyhood years: growth and development- Physical, motor, cognitive, language, social, and emotional development during the first two years. Infant mortality – Causes and prevention.

Unit V Early childhood

Early childhood: Importance of the period - physical, motor, social, emotional, cognitive, and language development during early childhood years. Developmental tasks.Behaviour problems and handling the problems.

Text books

1. Berk.L.E. Development through the life span, Pearson Educational, New Delhi,2007.
2. Berk. L. Childhood to adolescence, Mc.Graw Hill Company, London, 2000.
3. Berk. L.E., Infants, Children and Adolescents, Allyn and Bacon, Boston,1993.
4. Cobb. N.J., The child, infants, children and adolescents, Mayfield Publishing company, California, 2001.

Reference books

1. Hurlock.E.B. Child., Child development, Tata Mc. Graw Hill Publishing Company, New Delhi, 2005.
2. Hurlock.E.B. Developmental Psychology – A life span approach, Tata Mc. Graw Hill Publishing Company, New Delhi, 2006.
3. Santrock.J.W. Child Development, Tata Mc.Graw Hill Publishing Company, New Delhi, 2006.
4. Santrock.J.W., A tropical approach to life span development, Tata Mc. Graw Hill Publishing Company, New Delhi, 2007.

Course Outcomes

K2	CO1	Understand the Human Development – Significance – Stages of Life Span Growth.
K2	CO2	Summarize the Conception, Stages of prenatal development. Signs and symptoms of Pregnancy.
K2	CO3	Describe the Period of Infancy – Appearance of the newborn- size – physical proportion and physiological functions
K4	CO4	Analyze the Infant mortality – Causes and prevention
K2	CO5	Summarize the Importance of the period-physical, motor, social, emotional, cognitive, and language

Mapping of COs with POS & PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	S	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	S	S	M	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S	M	S
CO4	S	S	S	S	M	S	S	S	S	S	S	S
CO5	S	M	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S)	-	3 Marks
Moderately Correlating (M)	-	2 Marks
Weakly Correlating (W)	-	1 Mark
No Correlation (N)	-	0 Mark

SEMESTER -III

Course Code	U21HST31	FAMILY RESOURCE MANAGEMENT- I	L	T	P	C
CORE -V			5	-	-	4
Cognitive Level		**K2:** Understand **K3:** Apply				
Learning Objectives		The Course aims to ➢ understand the importance of management in family and personal living ➢ improve their ability in the management of family Resources ➢ understand and apply the basic principles of art in Interior decoration.				

Unit IHome Management Meaning and Process

Concept of Home Management.Planning, organizing, controlling, and evaluation.

Managerial inputs – values, goals, and standards – their inter relationship. Resources – classification and characteristics; optimizing the use of family resources.

Decision making – Meaning, types – steps in decision making – ways of resolving conflicts.Characteristics of a good home manager.

Unit II Time management

Time and energy management Time: Importance of time management – guidelines in the planning schedule.

Energy: Its importance –fatigue-types of fatigue and ways of overcoming fatigue. Work simplification – Mundel's Classes of changes. Work measurement (Basic idea).

Unit III Applied art design

Applied Art Design: Meaning, Types, characteristics, elements of design, principles of design – harmony, proportion, balance, emphasis, and rhythm.

Colour: Qualities of colour – Prang colour system – colour harmonies. Application of the principles in simple designs.

Flower arrangement: Principles, types. Accessories in the home – Classification, and selection.

Unit IV House plan

House Plan and Arrangement Site:Selection – factors to be considered. House Plans – types – reading of floor plans – drafting floor plans for middle- and low-income group families.

Features of a house contributing to liveability – orientation, grouping – roominess, lighting, and ventilation, circulation, storage facilities, privacy, flexibility, sanitation, and economy.

Unit V Room arrangement

Room Arrangement Furniture –Selection, arrangement, and care. Furnishings – Type, Selection, and care. Application of art principles in room arrangement.

Kitchen – different types – planning of a kitchen. Work triangle.

Text books:

1 Nickle. P. Dorsey, J. M, Management in family living, Sterling Publishers, New Delhi, 2002.
2 Gross I.M. and Grandall.D, Management for modern families, 2000
3 Varghese, N.Ogale, Home management, 2001.
4 Seymour, John, The Self-Sufficient Life and How to Live It. London: DK Publishing, 2003.

Reference books

1. Princen, The Logic of Sufficiency. New York: MIT Press, 2005.
2. Ciperthwaite, Wm, A Handmade Life: In Search of Simplicity. New York: Chelsea Green, 2004.
3. Heinberg, Richard, Power-down: Options and Actions for a Post-Carbon World. Canada: New Society Publishers, 2004.
4. Astyk, Sharon, Depletion, and Abundance: Life on the New Home Front. Canada: New Society Publishers, 2008.
5. McDilda, Diane Gow, The Everything Green Living Book: Easy Ways to Conserve Energy, Protect Your Family's Health, and Help Save the Environment. Avon, MA: Adams Media, 2007.

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Improve their ability in the management of family Resources
K2	CO2	Understand and apply the basic principles of art in Interior decoration.
K2	CO3	understand the elementary principles of planning a house and its interior arrangement.
K3	CO4	To use the principles of design in day-to-day life.
K3	CO5	To use the principles of design in day-to-day life.

Mapping of COs with POS & PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO 5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	S	M	S	S
CO2	S	S	S	M	S	S	S	S	S	M	S	S
CO3	S	S	S	M	S	S	S	S	S	S	S	S
CO4	S	S	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	M	S	S	S	S	S	S	S	S

Strong Correlation (S) = 3 marks Moderate Correlation (M) = 2 marks

Weak correlation (W) = 1 Mark No correlation (N) = 0 Mark

Course Code	U21HSA33	Biochemistry	L	T	P	C
Allied III			5	-	-	4
Cognitive Level	K2: Understand K3: Apply K4: Analysis					
Learning Objectives	Course aims to 1. understand the principles of Biochemistry 2.knowledge on the effect of diet on health and the functions of biological systems concerning Nutritional biochemistry					

Unit I Carbohydrates

Carbohydrate Metabolism - Definition, Classification of carbohydrates – Monosaccharide, Disaccharide, and polysaccharide. Metabolism – glycolytic pathway, Electron transport chain, glycogenesis, Glycogenolysis, and Gluconeogenesis. Disorder of carbohydrate metabolism-Diabetes Mellitus.

Unit II Proteins and lipids

Protein metabolism -Definition, Classification of protein, Structure, Physical properties, Chemical properties, Amino acids- Essential and non- essential.

Lipid metabolism Definition, Structure, Classification of lipids-Saturated, Unsaturated fatty acid, Bio-Synthesis of fatty acid. Lipoproteins: Types, composition, role, and significance in diseases.

Unit III Enzyme

Enzymes –definition, functions of enzymes, classification of enzymes, mechanism of enzyme action, regulation of enzyme action, factors affecting enzyme activity. Role of enzymes in different digestion and metabolic pathways.

Unit IV Water balance

Water- composition of water in the human body, functions of water, water intake, Output, Balance, Dehydration: causes, and overcome measures, oedema: causes, and preventive measures. Factors affecting water balance, Buffer system,

Unit V Antioxidants

Biochemical reactions in the human body, antioxidants and human health, free radical formation, antioxidant-rich foods, application of biochemistry in medicine & treatment in food science and nutrition.

Text books:

1. Ramadevi K, Ed: AmbikaShanmugam's Fundamentals of biochemistry for medical students, 8th edition, Wolters Kluwer Health, India, 2016

2. Rodwell V, Bender D, Botham KM, Kennelly PJ, Weil PA, Harper's Illustrated Biochemistry, 30th Edition, McGraw hill Education, 2015.

3. Sulochana H, Principles of Biochemistry, PBS enterprises, Chennai, 2010

Reference books

1. Cox MM and Nelson DL, Lehninger Principles of biochemistry, 5th edition, EH Freman&Company, New York, 2008
2. Vasudevan DM, Sreekumari S, Textbook of Biochemistry, 5th edition, Jaypee Publishers, New Delhi, 2007.
3. VeeraKumari L, Biochemistry, 1st edition, MJP Publishers, 2005.

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K3	CO1	apply the principles of biochemistry and also chemistry of major nutrients.
K2	CO2	understand the knowledge about the major metabolic pathways in human metabolism
K2	CO3	understand the synthesis of nucleic acids and proteins.
K2	CO4	obtain complete knowledge on Enzyme and its application
K4	CO5	analyze the importance of vitamins and minerals in human development.

Mapping of COs with POS & PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	M	S	S	S	S	M	S	S	S	S	M
CO2	S	S	S	S	M	S	S	S	S	M	S	S
CO3	S	S	S	S	S	S	S	S	S	S	S	S
CO4	M	S	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	M	S	S	S

Strongly Correlating (S) - 3 Marks
Moderately Correlating (M) - 2 marks
Weakly Correlating (W) - 1 Mark
No Correlation (N) - 0 mark

SEMESTER-IV

Course Code	U21HST41	DIET FOR DISEASES	L	T	P	C
CORE VI			4	-	-	4
Cognitive Level		K2: Understand K3: Apply K4: Analysis				
Learning Objectives		Course aims to 1.assess knowledge in the method to plan and prepare a diet for various diseases. 2. identify the principles of meal planning, diet therapy, therapeutic diets, and nutrition support.				

Unit I Concept of diet therapy

Concept of diet therapy: Purpose and principle of therapeutic diets, modification of normal diet, classification of therapeutic diets, routine hospital diets: clear fluid, full fluid, semi-fluid, semi-solid, and solid. Different feeding techniques - oral feeding, tube feeding, parenteral feeding, the role of dieticians in nutritional care.

Unit II Fever diet

Fever: Causes, symptoms, dietary management: Febrile disease acute – Typhoid, influenza, malaria, chronic – tuberculosis: epidemiology, causes microorganism involved in fever, symptoms, complications, diagnosis, dietary recommendations and foods included and avoided.

Unit III Gastro intestinal diseases

Diseases of upper-gastrointestinal tract: Causes, pathogenesis, dietary modification, and diet planning for Gastritis, Peptic ulcer, Diseases of lower-intestinal tract: Causes, pathogenesis, dietary modification, and diet planning fordiarrhoea, dysentery, Constipation Haemorrhoids, Surgery of colon – gastrostomy, jejunostomy, and cancer of the colon

The disease of liver – hepatitis, cirrhosis, gall bladder diseases

Unit IV Life style associated diseases

a. Causes symptoms and food exchange list, dietary treatment for Diabetes mellitus.
b.Cardio vascular diseases – hypertension, atherosclerosis, congestive cardiac failure, and sodium-restricted diet in causes symptoms and dietary treatment.

c. Obesity and leanness – causes symptoms and dietary treatment.

Unit V Renal diseases and others

a. Diseases of the excretory system– nephritis, nephrotic syndrome, urinary calculi, renal failure.

b. Diet in allergy – definition, classification, food allergies. Test for allergy, dietetic treatment.
c.Cancer – causes symptoms of dietary treatment.

Text books

1. Robinson, Corinne Hogden, and Marilyn R. Lawler. *Normal and therapeutic nutrition*. No. Ed. 16. Collier Macmillan Publishers, 1982.
2. Dietary Guidelines of Indians- A Manual, National Institute of Nutrition, Hyderabad, 2006.
3. Srilakshmi B, Dietetics, sixth edition, New age Publishing Press, New Delhi, 2011.

Reference books

1. Stacy N, William's Basic Nutrition and Diet Therapy, 12th edition, Elsevier publications, UK, 2005.
2. Elia M, Ljunggvist O, Stratton RJ, Lanham SA, Clinical Nutrition (The Nutrition Society Textbook), 2nd edition, Wiley Blackwell Publishers, 2013
3. Mahan LK, Stump SE, and Raymond JL, Krause's Food and Nutrition Care Process, 13th Edition, Elsevier Saunders,2004.

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	plan and prepare a standardized hospital diet for the needed patients.
K2	CO2	understand the concept, purpose, and principles of diet therapy and the role and types of dieticians.
K3	CO3	apply various deficiency disorders concerning their prevalence, causes, symptoms, and preventive measures.
K4	CO4	discuss the kinds of commercial formulas available for oral and enteral feedings.
K4	CO5	compare the food exchange list in the control of diabetes and complications.

Mapping of COs with POS & PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	M	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	M	S	S	S

Course Code	U21HSP42	HUMAN DEVELOPMENT PRACTICAL	L	T	P	C
CORE VII			-	-	4	4
Cognitive Level		K2: Understand K3: Apply K4: Analysis K5: Evaluate				
Learning Objectives		Course aims to learn the developmental milestones of children.				

HUMAN DEVELOPMENT PRACTICAL

1. Preparation of an album on developmental mile stones of children.
2. Visit Maternity Ward and Ante-natal clinics.
3. Visit Anganwadi and plotting of Growth Monitoring Chart and Interpretation.
4. Demonstration on the preparation of weaning foods
5. Compilation of songs for finger play and lullabies suitable for infants and toddlers.
6. Preparation of a low-cost toy for a Pre-school child.
7. Development of riddles for languages and concepts for school children.
8. Compilation of outdoor games and games for cognitive development.
9. Study of adolescent problems, pregnant, lactating mothers, and old age through interview.
10. Documentation of parenting styles.

K2	CO1	Outline the principles of development from conception to birth.
K4	CO2	Compare the development pattern of infancy and early childhood during the life cycle.
K3	CO3	Demonstration on the preparation of weaning foods.
K5	CO4	Evaluate the methods in preparing low-cost toys.
K4	CO5	Design games for cognitive development.

Mapping of COs with POS & PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	S	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	S	S	M	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S	M	S
CO4	S	S	S	S	M	S	S	S	S	S	S	S
CO5	S	M	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks
Moderately Correlating (M) - 2 marks
Weakly Correlating (W) - 1 Mark
No Correlation (N) - 0

Course Code	U21HSA44	BIOCHEMISTRY PRACTICAL	L	T	P	C
ALLIED IV			-	-	4	4
Cognitive Level		K2: Understand K3: Apply K4: Analysis K5: Evaluate				
Learning Objectives		Course aims to 1. Understand the biochemical preparation methods. 2. Identify the qualitative analysis of bio-organic compounds.				

1. Qualitative analysis of bio-organic compounds
    a) Carbohydrates
    b) Amino acids
    c) Tests for proteins
    d) Tests for lipids – test for cholesterol – kit method TG kit
2. Biochemical preparation
    i) Starch (potato)
    ii) Lactose (Milk)
    iii) Casein (Milk)
3. Use of PH meter for the preparation of buffer.
4. Verification of Beer Liambert's law using a colorimeter
5. I) Determining the extinction co-efficient of a given colour compound.

Determining the concentration of any given colour compound using a standard graph.

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Gain knowledge about quantitative analysis.
K2	CO2	Understand the Use of PH meter for the preparation of buffer
K3	CO3	Apply practical skills in qualitative analysis of proteins
K4	CO4	Acquire skill in the preparation of the solution.
K5	CO5	Determining the extinction co-efficient of a given colour compound.

Mapping of COs with POS & PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	S	S	S	S	S	S	S	M	S
CO2	S	S	S	S	S	S	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	M	S	S	S	S
CO5	M	S	S	S	S	S	S	S	S	M	S	S

Strongly correlating (S) - 3 Marks

Moderately Correlating (M) - 2 marks

Weakly Correlating (W) - 1 Mark

No Correlation (N) - 0 mark

Course Code	U21CSS42	COMPUTER SKILLS FOR OFFICE MANAGEMENT	L	T	P	C
SBE-II			-	-	2	2
Cognitive Level		K2: Understand K3: Apply K4: Analysis K6: Create				
Learning Objectives		➢ To gain knowledge on Functions of Operating systems. ➢ To understand about workingof Worlddocuments ➢ Togain knowledge about the operating of spreadsheets and their applications. ➢ Tocreate a new database and development of PowerPoint for presentation. Tounderstand the usage of the Internet and web browser.				

Unit-1 Definition of Operating System

Functions of OS - Types of OS: Single user, Multi-User, multi-task, RTOS, Single-user, Multi-tasking – Windows Desk top - Definition of Computer – Characteristics of Computer – Working Principle of Computer – Computer Applications. Components of a Computer System - Hardware: Input devices – Output Devices – CPU: Memory Unit - Control Unit – Arithmetic Logic Unit – Storage: Internal – RAM and ROM – External Storage: Hard Disk – Compact Disk – Pen Drive – Storage Capacity: Bits and Bytes - Software: System Software – Operating System, Application Software – Windows Operating System – Booting Process - Windows Basics: Icos, Window Objects, Files, Folders- File Naming Rules – Windows Utilities: Notepad, Paint, Recycle Bin, Network, File Explorer – Users: Programmers and End-Users

Unit-2: Introduction to Office - Open Office – Writer

Word - Working with Documents--Open Office writer-formatting documents-Creating Tables- Table settings, Borders, Alignments, Insertion, deletion, Merging, Splitting, Sorting, and Formula, Insertion of Objects: Equation Editor, Organizational Chart, Drawing - Inserting ClipArts, Pictures/Files, etc., Tools – Word Completion, Spell Checks, Mail merge, Templates, Creating contents for books, Creating Letter/Faxes, Creating Web pages, Using Wizards, Tracking Changes, Security, Digital Signature. Printing Documents – Shortcut keys,

Unit-3: Introduction to Excel

Spread Sheet & its Applications, Opening Spreadsheet, Menus - main menu, Formula Editing, Formatting, Toolbars, Using Icons, Using help, Shortcuts, Spreadsheet types. Working with Spreadsheets- Formatting Spreadsheets-OpenOffice-Calc - Introduction – Introduction to Spreadsheets, Overview of a Worksheet, Creating Worksheet & Workbooks, Organizing files, Managing files & workbooks, Functions & Formulas, Working with Multiple sheets, Creating Charts & Printing Charts – Operating with Excel documents, which are already created and saved in Excel.

Unit-4 Introduction to Access and Power point

Access: Introduction, Planning a Database, Starting Access, Access Screen, Creating a New Database, Creating Tables, Working with Forms, Creating queries, Finding Information in Databases, Creating Reports, Types of Reports- Power point: Introduction to presentation – Opening new presentation, Different presentation templates, Setting backgrounds, Selecting presentation layouts. Creating a presentation - Setting Presentation style, Adding text to the Presentation

Unit-5 Internet and advanced Communication

Internet and Web Browsers-internet browsing, searching - Search Engines - Portals - Social Networking sites- Blogs - viewing a webpage, downloading and uploading the website; Creating an email-ID, e-mail reading, saving, printing, forwarding and deleting the mails, checking the mails, viewing and running file attachments, addressing with cc and bcc- Introduction to various devices & Applications: Other than the computers, (electronic gadgets), which are widely using by executives in the Offices – Tablet, Smart Phone – the concept of mobile phone and Tablet and their uses – Various applications using by Tablets and Smart Phones such as UC Browser, WhatsApp, Maps, Skype, e payments.

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Reference Books:

1. Sathish Jain, M.Geetha, Karthika, “MS-Office 2010 – Training Guide”, BPB Publications, 2010.
2. Bittu Kumar, “Mastering MS-Office: Computer Skill Development: be Future Ready”, BPB Publications, 2017.

Course Outcome

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Functions of Operating System. .
K3	CO 2	working of Word documents
K4	CO 3	operating of spreadsheet and its applications
K6	CO 4	Creation of new database and development of PowerPoint for presentation
K2	CO 5	usage of Internet and web browser

Mapping of COs with POS & PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3	PSO 4	PSO5
CO1	S	S	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	S	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating(S) - 3Marks

Moderately Correlating(M) - 2 marks

Weakly Correlating(W) - 1 Mark

No Correlation(N) - 0 mark

SEMESTER-V

Course Code	U21HST51	EXTENSION EDUCATION	L	T	P	C
CORE VIII			5	-	-	4
Cognitive Level		K2: Understand K3: Apply K4: Analysis				
Learning Objectives		The course aims to ➢ understand the fundamentals of Extension Education ➢ know the various extension methods and ➢ familiarizing types of audio-visual aids				

Unit I Fundamentals of Extension Education

History of Extension - origin, and growth, Scope and importance of Extension Education Meaning and definition of extension education, Characteristics and types of Extension Education, Contents and components of extension education, Goals and objectives of extension education.

Unit II Principles of Extension Education

Principles of extension education: Philosophy of extension education, Principles of extension education, Principles of Teaching, Training and Field work, Principles of Learning, Learning Experience, Elements of teaching-learning situation, Types of the Learning situation.

Unit III Classification of extension methods

Classification of extension methods: Meaning and functions of extension methods, the significance of extension methods, techniques, approaches, and strategies, Classification based on the size of the audience, nature or form, Criteria for selection, and combination of various extension methods.

Unit IV Audio-Visual aids

Audio-Visual aids - Meaning and definition, Types of Audio-Visual aids - Merits and Demerits. – Meaning, classification – Audio aids, visual aids, Audio visual aids. preparation and use of audio, visual aids. Factors influencing the effectiveness of audio visual aids, Cone of Experience and its importance in extension teaching.

Unit V New initiatives in Extension pluralism

New initiatives in Extension pluralism: Meaning and definition of private extension, Public extension and Extension pluralism, Role of public and private extension system, Strategies for privatizing Extension, Cyber extension, Public-private partnership, New Concepts: Demand-driven extension, market-led extension.

References:

1. Reddy, Adivi. An Extension Education, Sree Lakshmi Press, Bapatala, 1995.

2. Jha, J.K, Encyclopaedia of Teaching of Home Science, Vol.I, II, and III. New Delhi: Anmol Publications, 2002

3. EaswaranA., ABC of Extension Education, GRI, Gandhi gram 2007.

4. Mohanty, Sandhya Rani. *Home Science Extension Education and Rural Development*.Anchor Academic Publishing, 2017.

5. Rathore, O. S., O. S. Rathore, S. D. Dhankar, M. S. Chauhan, and S. N. Ojha. *Handbook of Extension Education*.Agrotech Pub. Academy, 2001.

6. Nisha, Maimun. *Understanding extension education*.Gyan Publishing House, 2006.

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Know the concept, fundamentals, and scope of extension
K2	CO2	Know the principles of extension education
K2	CO3	Understand the classification of extension methods
K3	CO4	Analyze the audio-visual aids, types, merits, and demerits
K4	CO5	Examine the new initiatives in extension pluralism

Mapping of COs with POS & PSOs:

CO/PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	S	S	S	S	S	S	S	S	S	S
CO2	S	S	M	S	S	M	S	S	S	S	M	S
CO3	S	S	S	M	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S	M	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S)	-	3 Marks
Moderately Correlating (M)	-	2 marks
Weakly Correlating (W)	-	1 Mark
No Correlation (N)	-	0 mark

Course Code	U21HST52	FASHION DESIGN	L	T	P	C
CORE IX			5	-	-	4
Cognitive Level		K2: Understand K3: Apply K4: Analysis				
Learning Objectives		The course aims to • impart knowledge about functions and theories of clothing. • understand the basics of the fashion and fashion industry. • develop sensitivity towards the selection of garments and garment • design.				

Unit I Meaning of fashion

Meaning of Fashion– objectives, scope, importance, Need for clothing, and Fashion perspectives - Fashion terminologies. Fabric terms, Accessory Terms, Common Sewing Terms, and Industry Language. Fashion evolution- haute couture, pretaporter.

Unit II Fashion Movement

Fashion Movement - Meaning, Theories, and principles- trickle up, trickledown, and trickle across. Fashion - cycle, Fashion forecasting, fashion change – social and psychological reasons.

Unit III Substance of Fashion Industry

The substance of Fashion Industry -concepts and importance of fashion industry, fashion industry in India, Soft goods chain-textile, apparel & retail segment - Apparel Categories, Designing process - World fashion design centers, Influential designers in India and abroad

Unit IV Fashion Business Trends

Fashion Business Trends –current trends in India, importance, Consumer Groups, Consumer Buying Consumer market, Importance of demographics and psychographics & Niche Marketing. Fashion enterprise- fashion information services. Fashion websites.

Unit V Career in Fashion Industry

A career in Fashion Industry– importance and scope, Career planning process, Training and experience needed, Career in textile, apparel, retail & fashion promotion, Entrepreneurship in fashion, boutique management.

References

1. Kathryn McKelvey and Janine Munslow Fashion Design: Process, Innovation, and Practice, Blackwell Science Ltd., Blackwell Publishing Company, UK. (2005),

2. Jenny Davis A Complete Guide to Fashion Designing, First Edition, Abhishek Publications, Chandigarh. (2006),

3. Mahadevan, M.G. Textile colouring, First Edition, Abhishek Publication Chandigarh. (2008)

4. PremlataMullick Text book of Textile Designing, Kalyani Publishers, Ludhiana. (2006)
5. Parachure, J. W Fundamentals of Designing for Textiles and other end-use, Woodhead publishing, India, New Delhi. (2009)

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K3	CO1	Identify the role and functions of clothing and recognize the factors affecting selection and evaluation of clothing.
K2	CO2	Explain the concept of fashion, its terminology, sources, and factors affecting it.
K2	CO3	Describe the global fashion industry and its leading designers.
K4	CO4	Classify and illustrate various components of the garment.
K3	CO5	Apply the knowledge of elements and principles in design interpretation.

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	M	S	S	S	S	S	S	S	S
CO2	S	S	S	M	S	S	S	S	S	S	S	S
CO3	S	S	M	M	S	S	S	M	S	S	M	S
CO4	S	S	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	M	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks

Moderately Correlating (M) - 2 marks

Weakly Correlating (W) - 1 Mark

No Correlation (N) - 0 mark

Course Code	U21HST53	FAMILY RESOURCE MANAGEMENT II	L	T	P	C
CORE X			5	-	-	4
Cognitive Level		K2: Understand K3: Apply K4: Analysis				
Learning Objectives		The course aims to 1. visualize the economic situation of the nation as related to a family's economic behaviour. 2. understand the commonly used economic concepts and their significance to home management. 3.Gain training in family finance management.				

Unit I Household consumption

Household Consumption: Family as an economic unit. Human wants and their characteristics, necessaries, comforts, and luxuries, the concept of marginal utility and law of diminishing marginal utility and law of substitution – law of demand and supply, their application.

Standard of living causes low living standards in India, means of raising standards of living.

Unit II Money management

Money Management: Family income – Types, Sources, methods of augmenting family income. Family Expenditure: Budget – meaning, types of budgets, planning a family budget – steps in planning, advantages of budgeting. Factors affecting the family budget.Engels law of consumption.Methods of handling money – family financial records – purpose and types.

Unit III Money management

Savings: Meaning – need for money-saving, saving institutions – Bank, Post Office, Insurance, Chit funds, Unit Trust of India. Investment –different types and principles. Importance of money management and its advantages.

Unit IV Household purchase

Household Purchase: Price – Factors influencing normal price – price fluctuations and their effect on various income groups. When, where, and how to purchase, cash purchase Vs Credit purchase – Advantages and disadvantages.

Unit V Consumer rights

The Home Maker as a wise consumer Rights and responsibilities of a consumer- consumer education – consumer aids – advertisements, standards, labels, price tag.Consumer problems in India – adulteration, common adulterants, faulty weights and measures, thermalpractices. Consumer Protection – Meaning, need, and consumer protection act.

Text books

Seetharaman, Premavathy, Sonia Batra, and PreetiMehra. *An Introduction to Family Resource Management*.CBS, 2005.

References:

1. Seymour, John, The Self-Sufficient Life and How to Live It. London: DK Publishing, 2003.
2. Princen, T, The Logic of Sufficiency. New York: MIT Press, 2005.
3. Ciperthwaite, Wm, A Handmade Life: In Search of Simplicity. New York: Chelsea Green, 2004.
4. Heinberg, Richard, Power-down: Options and Actions for a Post-Carbon World. Canada: New Society Publishers, 2004.
5. Moore, Tami James, and Sylvia M. Asay. *Family resource management*. Sage Publications, 2017.

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	summarize the law related to household consumption.
K4	CO2	analyze the causes for low living standards in India.
K3	CO3	prepare a budget for a family
K3	CO4	identify the savings institutions and their schemes.
K4	CO5	differentiate credit and cash purchases.

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	M	S	S	S	S	S	S	M	S
CO2	S	S	S	S	S	S	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S	M	S
CO4	S	S	M	M	S	M	S	S	S	S	M	S
CO5	S	S	S	M	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks

Moderately Correlating (M) - 2 marks

Weakly Correlating (W) - 1 Mark

No Correlation (N) - 0 mark

Course Code	U21HST54	HUMAN DEVELOPMENT II	L	T	P	C
CORE XI			5	-	-	4
Cognitive Level		K2: Understand K3: Apply K4: Analysis				
Learning Objectives		The Course aims to • know the growth process during the period of Adolescence, developa proper attitude towards child-rearing practices and understand the adjustments to be made in adulthood.				

Unit I Later childhood

Late childhood: growth and development in later childhood,Physical, motor, social, emotional, cognitive, and moral development during late childhood. Developmental tasks.Habit formation.

Unit II Adolescents

Adolescence:Physical development - Pre-pubertal growth- changes in primary and secondary sexual characteristics in boys and girls.

Mental, Social, and emotional development during adolescent years.Developmental tasks.

Unit III Early adulthood

Early adulthood: physical changes in adulthood, Characteristics of early adulthood; developmental tasks; Maritaladjustments;vocational adjustments. Parenthood - Preparation and Adjustment.

Unit IV Middle adulthood

Middle adulthood: Characteristics; developmental tasks; adjustment to physical changes, social adjustments, and health problems. Importance of middle adulthood and its responsibilities.Social responsibilities.

Unit V Late adulthood

Late adulthood: Characteristics; developmental tasks; adjustment to physical changes, adjustments to changes in Family life; living arrangementsand Health Problems.Importance of late adulthood period and its social responsibility.

Text books

1. Suriakanthi. A Child Development – An Introduction. Gandhi gram: Kavitha Publications, 2009.
2. Santrock.J.W., A tropical approach to life span development, Tata Mc. Graw Hill Publishing Company, New Delhi, 2007.
3. Sharoy. Counseling children, adolescents, and families, Sage Publications, London, 2005.
4. Cobb. N.J., The child, infants, children and adolescents, Mayfield Publishing company, California,2001.
5. Hurlock.E.B., Child development, Tata Mc. Graw Hill Publishing Company, New Delhi, 2005

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Learn about the various changes that take place in different domains of development during adolescence.
K3	CO2	acquire an understanding of the various transformations that takes place in different domains of development during middle and late adulthood.
K2	CO3	learn the characteristics of developmental tasks; Maritaladjustments; vocational adjustments
K3	CO4	Apply knowledge on social adjustments and health problems
K2	CO5	learn about the diverse changes that they experienced in different development domains.

Mapping of COs with POs& PSOs:

O/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	M	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	M	S	S	S

Strongly Correlating (S) -3 Marks Moderately Correlating (M) -2 marks

Weakly Correlating (W) -1 Mark No Correlation (N) -0 mark

Course Code	U21HSP53	DIET FOR DISEASES PRACTICAL	L	T	P	C
CORE XII			-	-	5	4
Cognitive Level		K1: Recall K4: Analysis K6: Create				
Learning Objectives		The course aims to ➢ To enable students to apply the principles of planning therapeutic diets for various disease conditions				

PRACTICALS

Planning and preparation of Routine hospital diets

Planning and preparation of low-calorie diet for Obesity and Underweight

Planning and preparation of diet for Fever

Planning and preparation of diet for Anemia, PEM

Planning and preparation of bland diet for peptic ulcer

Planning and preparation of diet for Diarrhoea and Constipation

Planning of diet for Jaundice

Planning and preparation of diet for Type II Diabetes mellitus

Planning and preparation of diet for Acute glomerular nephritis

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K1	CO1	Assess knowledge in the method to plan and prepare a diet for various diseases.
K4	CO2	Identify the principles of meal planning, diet therapy, therapeutic diets, and nutrition
K6	CO3	Create skill development in planning therapeutic diets using food exchange lists.
K6	CO4	Evaluate the concept of food groups and exchanges for planning and preparing a balanced diet for various age groups and physiological conditions
K6	CO5	Make appropriate dietary modifications for various disease conditions based on the pathophysiology

Mapping of COs with POs& PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	S	S	S	S	S	S	S
CO3	S	S	S	M	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S)	-	3 Marks
Moderately Correlating (M)	-	2 marks
Weakly Correlating (W)	-	1 Mark
No Correlation (N)	-	0 mark

SEMESTER-VI

Course Code	U21HST61	FUNDAMENTALS OF APPAREL DESIGN	L	T	P	C
CORE XIII			5	-	-	4
Cognitive Level		K2: Understand K3: Apply K4: Analysis				
Learning Objectives		The course aims to 1. Impart knowledge about functions and theories of clothing. 2. Understand the basics of the fashion and fashion industry. 3. Develop sensitivity towards the selection of garments and garment design.				

Unit I : Sewing Equipment and Seams

Sewing machines- parts and their function, care, and maintenance.Tools for measuring, marking, cutting & pressing.Selection of thread and needles for various types of fabric.

Seams, seam finishes, and hems-definition and types.

Unit II : Fullness

Fullness: Definition, Types of fullness – Darts -standard dart, double-pointed dart-Tucks-pin tuck, cross tucks- Pleats-Knife pleat, box pleat, inverted box pleat- flares, godets, gathers-hand, machine, elastic, Shirring and Ruffles.

Unit III : Necklines, Plackets, and Fastness

Neck Finishes and Fasteners: -Definition, Bias- definition, joining bias and uses. Bias facing and bias binding. Plackets- Definition, characteristics of a good placket, classification – continuous bound, bound & faced, fly opening, zipper, tailored, and centre front/shirt placket.

Fasteners, and button hole - Buttons and steps in attaching buttons, other types of fasteners. Button and button hole position and length of the button hole, types of buttonhole-Button loops- thread loops, fabric loop, corded loop, corded frogs' buttons, and its types.

Unit IV : Sleeves and Collars

Sleeves: - Classification of sleeves, types of sleeves - selection of sleeves and creating variety in sleeves.

Collars – definition, parts of the collar, factors to be considered in designing collar, classification of the collar.

Neck lines and finishes – different types of neck lines, neckline finishes - Bias binding and facing.

Unit V Pockets and Trimmings

Pockets- Definition, classification, selection of pocket, and creating variety in pockets.

Trimmings and Decoration - Definition, types -Bias trimming, Ricrac, ruffles, embroidery, smocking, faggoting, Applique, lace, lace motifs, scalloped edging, decorative fastening– belts & bows.

REFERENCES:

1. Anita Tyagi, Handbook of fashion Technology, Sonali Publications, New Delhi. (2012).
2. Winifred Aldrich, Metric Pattern Cutting for Children's Wear and Baby Wear – Third Edition, Black Well Publishing, New Delhi. (2012).
3. Zarapkar K.R., System of Cutting, Navneet Publications, India. (2005).
4. Gerry Cookline Pattern cutting for Women's outer wear, Om books international, New Delhi., (2005).
5. Zarapkar K.R., System of Cutting, Navneet Publications, India. (2005).
6. Khurana K Draping and Pattern Making for Fashion Design, Sonali Publications, New Delhi., (2012).
7. Lorna Knight, Sewing Tips, Techniques, and Trade Secrets, St. Martin's Press, New York., (2010),

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Understand the fundamentals of various sewing equipment and sewing techniques.
K2	CO2	Acquire knowledge of different sewing finishes.
K4	CO3	Analyze the basics of sewing, sewing machines, tools and techniques, and different seams and seams techniques.
K4	CO4	Classify and illustrate various components of the garment.
K3	CO5	Apply the knowledge of elements and principles in design interpretation.

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	M	S	S	S	S	S	S	M	S
CO2	S	S	S	M	S	S	S	S	S	S	S	S
CO3	S	S	M	M	S	S	S	S	S	S	S	S
CO4	S	S	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	M	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks
Moderately Correlating (M) - 2 marks
Weakly Correlating (W) - 1 Mark
No Correlation (N) - 0 mark

Course Code	U21HST62	COMMUNICATION AND MEDIA SKILLS	L	T	P	C
CORE XIV			5	-	-	4
Cognitive Level		K2: Understand K3: Apply K4: Analysis				
Learning Objectives		The course aims to 1.state the basics of communication. 2.acquire skills in producing visual aids. □ 3.select, use and prepare visual aids for non-formal education.				

Unit I Communication overview

Communication – Meaning, objectives, elements, communication models – Aristotle, Shanon Weaver, Berlo and Leagns.and barriers of communication – How to overcome barriers, advantages of proper communication, communication barriers, problems of communication barriers and its overcome measures.

Unit II Methods of teaching

Methods of teaching: concept, objectives, different types of teaching, functions, and significance of different teaching methods. According to use – Individual, Group, and Mass. According to form – Written, Spoken and Visual – Objectives, advantages, and limitations of all form's methods of teaching,

Unit III Audio visual aids

Audio-Visual aids – Meaning, classification – Audio aids, visual aids, Audio visual aids. preparation and use of audio, visual, and audio-visual aids. Factors influencing theeffectiveness of audio-visual aids, Cone of Experience and its importance in extension teaching.

Unit IV Mass media

Mass media – Meaning, Characteristics, types – Radio, Television, Print media, Outdoor.

Media. Print Media Vs Broadcast Media. New communication technologies – computers, e - mail, video conferencing, internet, cyber safes, (elementary understanding).

Unit V Traditional media

Traditional Media – concept, types, uniqueness, different types of traditional media, folk songs, puppets shows, Street play, drama, and villupattu. Objectives of traditional media, comparison between traditional media and modern media.Significance of traditional media and its advantages.

References:

1. Baran, Stanley J. "Introduction to mass communication." (2015).

2. Singhal, A. & Rogers, E. India's Communication Revolution from Bullock Carts to Cyber

Marts. New Delhi: Sage Publications, 2001.

3.Reddy, A. Adivi, and A. Reddy. *Extension education*.Sree Lakshmi Press, 1987.
4.Dubey, V. K. *Extension education and communication*. New Age International, 2008.

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Understanding of communication, models of communication.
K3	CO2	Acquire skills in the Preparation of visual aids.
K2	CO3	Collect first-hand information in visiting media centres.
K3	CO4	Able to organize exhibitions at the village level.
K4	CO5	Able to effectively use modern communication technologies.

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	M	S	S	S	S	S	S	S	S
CO2	S	S	S	M	S	S	S	S	S	S	S	S
CO3	S	S	S	M	S	S	S	S	S	S	S	S
CO4	S	S	S	M	S	S	S	S	S	S	M	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks

Moderately Correlating (M) - 2 marks

Weakly Correlating (W) - 1 Mark

No Correlation (N) - 0 mark

Course Code	U21HST63	FAMILY DYNAMICS	L	T	P	C
CORE XV			5	-	-	4
Cognitive Level		K2: Understand K3: Apply K4: Analysis				
Learning Objectives		The course aims to ➢ To acquaint the students with the problems associated with marital life. ➢ To orient the students with the current family problems especially on the disintegration of family and the solving methods. ➢ To give them thorough knowledge on reproductive health education.				

Unit I : Adulthood and marriage

Adulthood - early, middle, and late adulthood characteristics and psychological changes. Marriage - definition, functions, types Monogamy, polygamy, and polyandry and group marriage Marital adjustments and factors affecting marital life Guidance and Counselling - need, method, and Supportive Agencies.

Unit II : Family concepts

Family - Meaning, the concept of family, different types of family, characteristics, and functions -essential and non-essential Types based on - structure, Authority, and Marriage. Family disintegration -reasons, and remedial measures.

Unit III : Family crisis

Family crisis: definition, Crisis and crisis management – definition, Classification – usual and expected, unexpected.Prolonged illness, Bereavement, unemployment suicide.Divorce, separation, Alcoholism, and drug addiction -stress management.

Unit IV : Welfare of the aged and children with special needs

Welfare programs for the aged. Different types of children with special needs, Welfare programs for the children with special needs – Institutions, Services, Programmes and concessions for children with special needs.

Unit V : Population education and family welfare

Population – Definition, Population growth and Population explosion, causes, and effect of population explosion. Population education, - definition, population education at various levels Family planning methods- types adolescent reproductive health education.

Reference

1 Nicklle. P. Dorsey, J. M, Management in family living, Sterling Publishers, New Delhi, 2002.

2 Gross I.M. and Grandall.D, Management for modern families, 2000

3 M.A. Varghese, N. Ogale, Home management, 2001.

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Understand adulthood and types of marriages in society.
K2	CO2	Explain family, its types, reasons for disintegration, and remedies.
K4	CO3	Classify the crisis in family arrangement and management techniques.
K4	CO4	Analyze the welfare programmes for the aged and children with special needs.
K3	CO5	Identify the causes of population explosion and types of family planning methods.

Mapping of COs with POs& PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	M	S	S	S	S	S	S	S	S
CO2	S	S	S	M	S	S	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks

Moderately Correlating (M) - 2 marks

Weakly Correlating (W) - 1 Mark

No Correlation (N) - 0 mark

Course Code	U21HST64	Community Development	L	T	P	C
CORE XVI			5	-	-	4
Cognitive Level		K2: Understand K3: Apply K4: Analysis				
Learning Objectives		The course aims to ➢ Understand the concept of community development and community organization ➢ Become aware of the Evaluation of the community development programme. ➢ Study the community organization in various settings.				

Unit I Concept of Community Development

Meaning and definition Principles, philosophy, objectives, and elements of Community Development, needs of community development, community development goals, community development features.

Unit II Evaluation of Community Development programme

Community Development programmes and National Extension Service, Rural Development initiatives before independence and post-independence - their analysis/ merits and demerits. Community development programs for health improvement, nutritional status, educational status, and living standard.

Unit III Community Organization

Meaning and definition of Community Organization, Models/approaches of community organization: Locality, development, social planning, Social Action, Community Building.Importance of community organization and its significance.

Unit IV Phases of community organization

Phases of community organization: concepts, objectives, the importance of community organization, relationship, assessment, discussion, organization, reflection, modification, and continuation.

Unit V Role of community organizer

Contemporary roles: communicator, animator, counsellor, collaborator, consultant, innovator, motivator, catalyst, facilitator, mediator, educator, and advocate, Earlier roles: enable, expert, therapist, Facilitation - Facilitation process and role of facilitator.

References

1. IndraGadara “committee and community organization”, Black prints publishing, 2013

2. Banta Sharma Nidaugmayum” Community organization and social registration”, Janadaprakashan, New Delhi, 2015

3. Thomas William, A. J. Christophes” Rural Development concept and Recent approaches”, RAWAT publication., 2015

5. Kunal Bhatia, Social Work, and Community Development”, Sonali Publications, New Delhi, 2012

6. NishaChaudhary Social welfare and community Development, Murrilal& Sons, New Delhi, 2010

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Know the basic concepts of community development
K2	CO2	Know about the community development programmes
K4	CO3	Understand different models of community development
K4	CO4	Analyze phases of community organization
K3	CO5	Understand the role of community organizer in community development

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO1	S	S	M	M	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	S	S	S	S	S	S	S
CO3	S	S	M	M	S	S	S	S	S	M	S	S
CO4	S	S	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks

Moderately Correlating (M) - 2 marks

Weakly Correlating (W) - 1 Mark

No Correlation (N) - 0 mark

Course Code	U21HST65	FOOD MICROBIOLOGY	L	T	P	C
CORE XVII			5	-	-	4
Cognitive Level		K2: Understanding K3: Applying K4: Analysing				
Learning Objectives		**Course aims to** 1. Gain knowledge of the role of micro-organisms in health and disease 2. To understand the role of micro-organisms in the spoilage of various foods. 3. To gain knowledge of micro-organisms concerning food and food preservation				

Unit I Microorganisms classification

Micro Organism in food

Bacteria – General characteristics of bacteria, bacteria morphology, cell structure, motility, nutrition, reproduction, and respiration.

Virus: - General characteristics of viruses, viral diseases, symptoms, and control of viral diseases.

Yeast: - General characteristics of yeast, the economic importance of yeast.

Mould: - General characteristics of mould, the economic importance of mould.

Protozoa: - General characteristics of protozoa, morphology, plasmodium, protozoa diseases-dysentery, malaria.

Unit II Factors affecting microbial growth

The general principle underlying spoilage of food: fitness and unfitness of food for consumption, causes of spoilage, factors affecting the growth of microorganisms in food: moisture, humidity, temperature, oxygen, pH, and other factors.Physical and Chemical changes caused by microorganisms.

Unit III Food contamination

Sources of Microorganisms in foods, classification of food: perishable, semi-perishable, non-perishable foods. Types of food spoilage microorganisms Spoilage of specific food groups-cereal and cereal products, pulses, fruits and vegetables, milk and meat products,

Unit IV Food Fermentations

Fermentation –definition and types, Microorganisms used in food fermentations Dairy Fermentations-starter cultures and their types, the concept of probiotics, types of fermented foods, methods and preparationfor vinegar, sauerkraut, soya sauce. Advantages of fermented foods, commercial fermented foods.

Unit V Food borne diseases

Food borne diseases: Bacterial food borne diseases (Staphylococcal in toxification, Botulism, Salmonellosis, Shigellosis, Enteropathogenic Escherichia Coli Diarrhoea, Clostridium Perfringens gastroenteritis, Bacillus cereus Gastroenteritis). Food Borne Viral Pathogens, protozoa, Mycotoxins: Aflatoxicosis, Mycotoxicosis, Ergotism

Textbooks:
Frazier W.C Food Microbiology. Fifth EditionGraw Hill Education (India) Pvt.Ltd, Delhi, 2013

References: -

1. PelczarMJChan ECS and KreighNR Microbiology, Eighth Edition, Tata McGraw Hill, New Delhi 2000
2. Willey UM, Sherwood LM, and WoolvertonCJ Prescott's Microbiology, Eighth Edition, McGraw-Hill International, 2011
3. Foster WM Food Microbiology, CBS Publishers 2016
4. Thomas J. Montville FoodMicrobiology. JohnWiley and Sons, Ltd2008
5. GeorgeJ. Banwart Basic Food Microbiology.Second Edition, International Thomson Publishing, Tokyo 2012

COURSE OUTCOME

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Understand the classification of micro-organisms and their characteristics in foods.
K2	CO2	The factors affecting the growth in controlling the growth curve of microorganisms.
K3	CO3	Able to preserve perishable foods from different types of microbial spoilage.
K4	CO4	Compare food-borne infection and food intoxication.
K4	CO5	Explore the beneficial effects of microorganisms in the processing and development of fermented foods.

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	M	S	S	S	S	**S**	S	S
CO2	S	S	M	S	S	S	S	S	S	**S**	S	S
CO3	S	S	S	M	S	S	S	M	S	**S**	M	S
CO4	S	S	S	S	S	S	S	S	S	**S**	S	S
CO5	M	S	S	S	M	S	S	S	S	**S**	S	M

Strongly Correlating (S) - 3 Marks
Moderately Correlating (M) - 2 marks
Weakly Correlating (W) - 1 Mark
No Correlation (N) - 0 mark

ELECTIVE COURSES

Course Code	U21HSE311		L	T	P	C
ELECTIVE-I		CHILDREN WITH SPECIAL NEEDS	4	-	-	3
Cognitive Level		K2: Understanding K3: Applying K4: Analysing				
Learning Objectives		The course aims to 1. Acquire knowledge about the special needs of exceptional children and the methods of satisfying their needs 2. Acquire skills in guiding the parents of exceptional children.				

Unit I: Children with special needs

Children with Special needs: Meaning, Types, Characteristics, History of Education of Exceptional Children. Special educators – their qualities and qualifications. Defining disabilities, Models of disability Classifying disabilities, Social construction of disability, Demography, Rights of Children with Disabilities.

Unit II: Common childhood disabilities

Common Childhood Disabilities –definition, methods of identification, assessment methods, and etiologyconcerningLocomotor disability, Visual disability, Auditory and speech disability, Intellectual disability, Autism, and Learning Disability.

Unit III: Children with disabilities

Children with Disabilities and Society - Families of children with disability, Prevention, and management of different disabilities, Physically Challenged Children: Orthopedically Handicapped – types, educational practices- Special education and inclusion, Policy and programmes and Policies for children with disabilities.

Unit IV: Programmes

Programmes and Policies for children with disabilities -The Indian Constitution, National Policy for Persons with Disabilities 2006, The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act 1995, The Rehabilitation Council of India Act 1992, The National Trust for Welfare of Persons with Autism, Cerebral Palsy, Mental Retardation, and Multiple Disabilities Act 1999. Legal Rights of The Disabled in India, Role Of Important Institutions laws.

Unit V: Characteristics and educational needs

Characteristics and educational needs– types, characteristics, and educational needs, Speech challenged – types, characteristics, and educational needs, Assistive technology - meaning, need, and type's benefits - the barriers to assistive technology. Scheme of Assistance to Disabled Persons for Purchase/ Fitting Of Aids & Appliances (ADIP).

REFERENCES:

1. Mangal S.K.,"Educating Exception Children", PHI Learning Private Limited, New Delhi, 2009

2. Reddy G.L, and Sujatha J., "Children with Disabilities" Discovery Publishing House, New Delhi, 2006

3. Reddy S.K.," Educating of Children with Special Needs" Discovery publishing House, New Delhi, 2007

4. Reddy L., Ramar R., and KusumaA. "Hearing Impairment-An Educational Consideration", Discovery Publications, New Delhi, 2004

5. Relakar S., Delvi U., and KautA.. "Fundamentals of speech and speech teaching" 2006

6. Sharma K., "Rehabilitation of Hearing-Impaired Children", Sarup and Sons, New Delhi, 2006

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K3	CO1	empathize the needs of exceptional children
K2	CO2	familiarize with the educational provisions of exceptional children
K4	CO3	gain skills in identifying children with special needs.
K2	CO4	Understand the special needs of exceptional children
K3	CO5	Identifying the methods to satisfy the need of exceptional children.

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	S	S	S	S	S	S	S	M	S
CO2	S	S	S	S	S	S	S	S	S	S	M	S
CO3	S	S	S	M	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks

Moderately Correlating (M) - 2 marks

Weakly Correlating (W) - 1 Mark

No Correlation (N) - 0 mark

Course Code	U21HSE312	HUMAN PHYSIOLOGY	L	T	P	C
ELECTIVE-I			4	-	-	3
Cognitive Level		K2: Understanding K3: Applying K4: Analysing				
Learning Objectives		The course aims to 1. To enable students to understand the structure and physiology of various organs in the body. 2. To help students to obtain a better understanding of the principles of nutrition and dietetics through the study of physiology.				

UNIT I: Cell and Digestive system

Cell – structure, types of tissue, cell functions.

Digestive system –mouth, tongue, salivary glands, oesophagus, stomach, small intestine, large intestine: Structure, functions, movements (Deglutition, peristalsis) and secretion of the gastrointestinal tract (Various enzymes and indigestion).

UNIT II: Respiratory system

Respiratory system external organs of the respiratory system- nasal cavity, respiratory organ, parts of the respiratory system, structure, functions of the respiratory system, mechanism of the respiratory system, transport of gases.

UNIT III: Circulatory system and Excretion organ

Circulatory system – Composition of blood – the structure of the heart and its working mechanism – conduction of heartbeat.

Excretion organ – general organization (including the structure of kidney, nephron, mechanism of urine formation).

UNIT IV: Sense Organs

Sense Organs – tongue, nose Eye, Ear, Skin: structure, functions, and its importance. Nervous system – Central nervous system – autonomic nervous system: structure of the brain, the role of the spinal cord.

UNIT V: Endocrine gland

Endocrine gland: definition, functions, hormones, Pituitary, Adrenal, Thyroid, ACTH, Parathyroid, and sex glands - Structure. Functions of ductless glands, location, hormone secretion, hyper, and hypo secretion its effect

References

1.Sembulingam, Kirma, and PremaSembulingam. *Essentials of medical physiology*. JP

Medical Ltd, 2012.

2. Ashalatha, P. R., and G. Deepa. *Textbook of Anatomy & Physiology for Nurses*. JP Medical Ltd, 2012.

3. Chatterjee CC, Human Physiology, Volume I, 11th Edition, CBS Publishers, New Delhi, 2016.

4. Sathya P and Devananda V, Textbook of Physiology, First edition, CBS Publishers and Distributors Pvt Ltd, New Delhi, 2013

5. Boron WF and Boulais EL, Medical Physiology, IIedition,SaundersElsevier, 2009

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Understand the Structure and Functions of the various organ systems of the body.
K2	CO2	Compare the digestive and excretory systems and infer the mechanisms of digestion and excretion in human beings.
K3	CO3	Relate the Structure with Functions of the tissues and organs.
K4	CO4	Comprehend the Mechanism of Action of Organs.
K4	CO5	Discuss the role of hormones and functions of the human reproductive system

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	S	S	S	S	S	S	S	M	S
CO2	S	S	M	S	S	S	S	S	S	S	M	S
CO3	S	S	S	S	S	S	S	S	S	S	S	S
CO4	S	S	M	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks
Moderately Correlating (M) - 2 marks
Weakly Correlating (W) - 1 Mark
No Correlation (N) - 0 mark

Course Code	U21HSE313	TRADITIONAL INDIAN TEXTILES	L	T	P	C
ELECTIVE-I			4	-	-	3
Cognitive Level		K2:Under Stand K3: Apply K4: Analysis K6: Create				
Learning Objectives		The course aims to 1. study the traditional textile arts in their historical perspective, the impact of modernization, and their contemporary status 2. create awareness about the khadi, handloom, and handicraft sectors and measures undertaken by organizations for their sustenance 3.impart knowledge of fundamentals of textile storage and conservation.				

Unit I: Textile crafts

Study of Textile Crafts of India: concepts, objectives, and features. Woven Textiles- Banaras, Brocades, Jamdanis and Bluchers of Bengal, Kani Shawls of Kashmir, Chanderi. Role of textile crafts in economic development.

Unit II: Embroidered textiles

Embroidered Textiles-Kanthas of Bengal, Kasuti of Karnataka, Phulkari of Punjab, Chikankari of Uttar Pradesh, Kashida of Kashmir, Gujarat embroideries - colours, motifs, and materials used.

Unit III: Printed textiles

Printed Textiles -concepts, features, and significance.Painted and Printed textiles – Kalamkaris of Andhra Pradesh, Dabu printing of Rajasthan, Ajarakh prints of Gujarat, Kalamkari and Block printing

Unit IV: Dyeing

Dyed textiles –Bandhnis of Rajasthan and Gujarat, Ikats- Patola of Gujarat, Bandhas of Orissa, Kalamkari, and Block printing.Importance of dyeing in the textile industry, various dyeing units, and its essential features.

Unit V Traditional and modern textiles

Status of Traditional Textiles in Modern India - Evolution and socio-economic significance of Khadi, Handloom and Handicraft sector - Conservation of Textiles - Factors affecting the deterioration of textiles - Care and storage of textiles.

References:

1. PremalathaMullick Textile Designing, Kalyani Publishers, New Delhi, 2007
2. Shailaja. D. Naik Traditional embroideries of India, APH publications, New Delhi, 2012
3. Carl Kohler, A History of Costume, Dover Publications, INC, New York, 2012
3. Sankar K. Roy, Textile traditions of northeast India, Indira Gandhi RashtriyaManavSangrahalaya, Bhopal and orient publishers, New Delhi, 2008

4. Ritu Kumar Costumes and Textiles of Royal India, Antique collectors club, 2008
5. ParulBhatnagar, Traditional Indian Textiles, Abhishek publications, Chandigarh, 2004
6. John Gillow, Nicholas Barnard, Indian Textiles, Thames & Hudson, London, 2008

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Explain the history, construction, and design of selected traditional woven fabrics
K3	CO2	Recognize and identify embroidered fabrics of different states in terms of construction and designs
K6	CO3	Provide an insight into the evolution and socio-economic significance of khadi, handloom and handicraft sectors
K4	CO4	Analyze the textile arts in their historical perspective, the impact of modernization, and their contemporary status
K2	CO5	Classify conservation techniques and recognize signs of deterioration of textiles

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	M	S	S	S	S	S	S	S	S
CO2	S	S	M	M	S	S	S	S	S	S	S	S
CO3	S	S	M	M	S	S	S	S	S	S	M	S
CO4	S	S	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	M	S	S	S	S	S	S	S	S

Strongly Correlating (S)	-	3 Marks
Moderately Correlating (M)	-	2 marks
Weakly Correlating (W)	-	1 Mark
No Correlation (N)	-	0 mark

Course Code	U21HSE421	Interior design and decoration	L	T	P	C
ELECTIVE-II			3	-	-	3
Cognitive Level		K2: Understand K3: Apply K6: Create				
Learning Objectives		The course aims to 1. enable the students to learn the basic concepts of interior decoration. 2. enable the students to enrich their knowledge ininterior designing and decoration				

Unit I House planning

House plan:Floor plan- low-income plan-medium income plan-high income plan-double

Storied plan.House plan: objectives, concepts, features, and importance of house planning. Factors consider during house plan.

Unit II Interior design

Interior Designing: concepts, features, principles, and advantages. Clearance spaces- Living room-dining room-Living cum Dining room- bedroom –Kitchen lay out-bath room - Definition- front yard and backyard designing.

Unit III Environment

Interior environment design and style: Size of the room, placement of doors and windows. Elements and principles of design and its application.Special considerations in interior environment design and style.

Unit IV Soft furnishings

Soft furnishings: Linen Room: Linen uniform Beddings, Beds – Layout plan activities of the linen room, different jobs that can be given a contract. Linen storage and control –Table linen, bed linen, Bedding, Bed Making, and Turning down. Laundry methods, fabric stain removal. Carpet and Floor –carpet covering – Maintenance, cleaning, and removal.Productive flooring and finishes.

Unit V Care and cleaning

Care and cleaning: Cleaning Equipment – Types, selection procedure, purchasing methods, care, cleaning, and maintenance of equipment. Cleaning agents-types characteristics, suitability of cleaning agents, and uses. Cleaning Guest Rooms, public Area – Rules, of furniture. Procedures and principles. Daily, periodic, and spring cleaning, list of standard room supplies (bathroom included). Furniture – selection, Types, upholstery material. Care and cleaning of furniture.

REFERENCES

1. Gekl, J. Cities for people, UnitedStates: Island press, 2010
2. Kohli, U.K., Housing Finance Agencies in India, New Delhi: Deep and Deep Publications, 2007
3. Oei, L and Kegel, D. E, The Elements of Design: Rediscovering Colors, Textures,4 Forms, And Shapes, Thames and Hudson, 2002
4. Piorrowski.C.M, Professional Practice for Interior Designers, New Jersey, USA: John Wiley and Sons,INC, 2008
5. Shah,M.G., Kale,C.M and PatkiS.Y, Building drawing:With an Integrated Approach to Build Environment, New Delhi: Tata McGraw Hill Education, 2002
6. Sharma, G. and Khanna, G, Advance Interior Designing incorporating Vastu and Feng-shui, India Publishers, Delhi, 2009

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Comprehend the concept of design applicable to interior spaces.
K3	CO2	Proficiency in presentation drawings to be used in the design profession.
K6	CO3	Ability to prepare interior plans.
K2	CO4	Understand the application of materials and finishes to create aesthetic and sustainable interiors.
K3	CO5	develop proficiency in the presentation of design drawings for creating aesthetic and sustainable interior and exterior spaces.

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	M	S	S	S	S	S	S	S	S
CO2	S	S	S	M	S	S	S	S	S	S	S	S
CO3	S	S	S	M	S	S	S	S	S	S	S	S
CO4	S	S	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	M	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks

Moderately Correlating (M) - 2 marks

Weakly Correlating (W) - 1 Mark

No Correlation (N) - 0 mark

Course Code	U21HSE422	FOOD HYGIENE AND SANITATION	L	T	P	C
ELECTIVE-II			3	-	-	3
Cognitive Level		K1: Recall K2: Understand K5: Evaluate K6: Create				
Learning Objectives		The course aims to 1.study the Introduction to sanitation and public health related to the foodservice industry.				

Unit I: Food hygiene

Food hygiene:Importance of food safety in the food processing industry, Risk classification, Microbial contamination (including cross-contamination/indirect contamination) Chemical contamination, Physical contamination, Allergen contamination. Sanitation Overview Sanitary Regulations: Definition, Types of Hygiene and sanitation.

Unit II: Personal hygiene

Personal hygiene:General principle of food hygiene and food handling habits, Importance of worker hygiene, health status, illness and injuries, Personal cleanliness and behavior, visitors, hygiene verification, Handwashing procedure. Personal hygiene of the food handler, Program of Good Health For Food handlers, Roots of Contamination, safety measures for food service personnel. • Care maintenance of Protective Clothing.

Unit III: Insect and pest control

Insect and pest control:Importance of Pest Control in the food industry, Pest

Classification (insects, rodents, and birds), Problems caused by pests, Prevention and effective control measures, Integrated pest management system, and tools. Food Storage Sanitation; Food Transport Sanitation, Pest Control, Packaging Sanitation,Waste Product Disposal.

Unit IV: Cleaning and sanitation

Cleaning and sanitation:Importance of cleaning technology, general cleaning and sanitary considerations, sanitation principle and the requirements for a food sanitation program, Cleaning agents: different types of cleaning agents, Sanitizing agents, Equipment and systems, Evaluation of sanitation efficacy.

Unit V Water supply and Infrastructure

Water supply and Infrastructure: Sanitary aspects of building, Plant layout and design, Water in the food industry, water sources, water uses, Water quality, Purification and disinfection of water, water treatments, water quality standards, Drinking water specifications, Pollution Control, Waterborne diseases, airborne diseases preventing measure for diseases

References

1. Bryan, F.L. Hazard Analysis Critical Control Point Evaluations A Guide to Identifying Hazards and Assessing Risks Associated with Food Preparation and Storage. World Health Organisation, Geneva, 2000.

2. Frazier. W., Food Microbiology, McGraw-Hill co Ltd, New Delhi.2015

3. Adams M, R and Moss M, O., Food Microbiology, New Age International (P) Ltd., New Delhi, 2015.

4. Vijaya Ramesh, Food Microbiology, MJP Publications, 2007.

5. David, A. Shapton, and Naroh F. Shapton Principles and Practices for the Safe Processing of Foods, Heineman Ltd., Oxford, 2011.

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K1	CO1	Classify the common kinds of physical/chemical contamination and simple measures to prevent food poisoning.
K2	CO2	Explain how high standards of personal hygiene for food handlers can be achieved.
K1	CO3	Define integrates practices for economic control of pests
K6	CO4	Design food hygiene and sanitation measures to control the spread of microorganisms.
K5	CO5	Criteria to fulfil water safety and environmental requirements.

Mapping of COs with POs& PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	M	S	S	S	S
CO2	S	S	S	S	S	S	S	S	S	S	S	S
CO3	M	S	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	M	S	S
CO5	S	S	M	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks
Moderately Correlating (M) - 2 marks
Weakly Correlating (W) - 1 Mark
No Correlation (N) - 0 mark

Course Code	U21HSE423	DEVELOPMENT COMMUNICATION	L	T	P	C
ELECTIVE-II			3	-	-	3
Cognitive Level		K3: Apply K4: Analysis K5: Evaluate				
Learning Objectives		The course aims to 1. Understand the concept of development communication in the context of social change and India's development initiative. 2. To build an understanding of the concept, scope, and theories of development journalism				

Unit I Development of communication

Development Communication Development communication -Definition, concept and genesis, characteristics, philosophy & approaches to development communication.roles of development communication, goals of Development Communication, Difference between communication for development and development communication

Unit II Advertisement

Advertisement: Advertising concept, types (audio, visual and Audio Visual and role of advertisements, Analysis of advertisement in media -print, audio, and video. Designing advertisements for media - print, audio, and video, Audience segmentation and its importance in advertising, laws, standards& regulations and ethics, designing advertisement - focus and process media ethics, reduce consumer course to regulate advertisement.

Unit III Image and graphics

Image and Graphics: Introduction to Digital Image, type, and properties of graphics, Colour's theory: models and modes, Fundamental digital image and file formats. Basics Concept making and Implement on Computer, Generating Ideas, Basics About Various Software's in Industry for still image manipulating, knowledge about pixels, measuring units in diff image manipulating software's.

Unit IV Behavioural aspects

Behavioural change communication: Advocacy Meaning, purpose and types of Advocacy Tools, techniques and approaches of advocacy Elements of an advocacy strategy Advocacy Planning Cycle - planning advocacy campaigns for different Stakeholders Relationship between advocacy, programme communication, and social mobilization

Unit V Broadcast

Writing for broadcast and web: Writing for eyes and ears. Characteristics of web writing, technical writing, blogs, online journalism for development cause. Freedom of Expression, Restrictions on publications, ethics, and responsibility, defamation, libel, Citizen Journalism.

References

1. Rantanen, T. The Media and Globalization, New Delhi: Sage Publications, 2005

2. Singhal, A. & Rogers, E. India's Communication Revolution from Bullock Carts to Cyber Marts. New Delhi: Sage Publications, 2001.

3.Reddy, A. Adivi, and A. Reddy. *Extension education*.Sree Lakshmi Press, 1987.
4.Dubey, V. K. *Extension education and communication*. New Age International, 2008.

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K4	CO1	Explain the methods of development and communication
K4	CO2	Identify the pros and cons of the advertisements
K3	CO3	Apply the images and graphics in communication.
K5	CO4	Assess the importance of various behavioural aspects in communication
K3	CO5	Apply the knowledge and synthesize new solutions on broadcast roles in communication

Mapping of COs with POs& PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	S	S	S	M	S	S	S
CO3	M	S	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	M	S	S

Strongly Correlating (S) -3 Marks Moderately Correlating (M) -2 marks

Weakly Correlating (W) -1 Mark No Correlation (N) -0 mark

Course Code	U21HSE531	ENTREPRENEURSHIP DEVELOPMENT	L	T	P	C
ELECTIVE-III			3	-	-	3
Cognitive Level		K1: Recall K2: Understand K6: Create				
Learning Objectives		The course aims to • Understand the process and procedures for taking upentrepreneurial programmes. • Develop an aptitude for Entrepreneurship development. • Prepare a draft proposal for funding				

Unit I Entrepreneurship

Entrepreneurship – meaning, importance, types – the role of entrepreneurs in economic development, need, the transition from income generation to self-employment, and Entrepreneurship. Qualities of a good entrepreneur.Problems of entrepreneurs, qualities of an entrepreneur – entrepreneur as a career.

Unit II Factors influencing entrepreneurial development

Factors influencing entrepreneurial development – Economic, legal, social and psychological factors. How to start a business – production, selection – a form of ownership plant location – land, building, water, and power – raw materials – machinery – manpower – other infra – nutrition structural facilities – Licensing, registration, and local bye-laws.

Unit IIIAgencies supporting Entrepreneurial Development Programme

Agencies supporting Entrepreneurial Development Programme Institutional Arrangement for Entrepreneurship development – D.I.C., TIIC,S.I.D.C.O, N.S.I.C., S.I.S.I – Institutional Finance to Entrepreneurs – T.I.I.C., S.I.D.B.I.

Commercial Banks – Incentives to small-scale industries.

Unit IV Project proposal

Project proposal – Proposal format and contentsteps in its preparation, Feasibility testing, SWOT analysis. Project report – Meaning and Importance – Project Identification – Contents of a project report – (as per requirements of Financial Feasibility and Economic Feasibility – Break-Even Analysis.

Unit V Entrepreneurship in food product development

Entrepreneurship developments in food product developments, functions, significance.Case histories of successful entrepreneurs – Entrepreneurship development in India – Women Entrepreneurship in India -Sickness in small scale industries and their remedial measures.

Text books

1. Chaiwallah S.A. Sales Management, Himalayan Publishing House New Delhi, 1999.
2. Dr.N.Rajan Nair, Sajith R. Nair Marketing, Sutanchand Sons, New Delhi, 2002

References

1. Vasant Desai, Project Management and entrepreneurship, Himalaya Publishing House, New Delhi, 2000
2. David H. Moll, Entrepreneurship, prentice Hall of India, New Delhi 1999.
3. Frank Jerkins, Advertising, prentice Hall of India, New Delhi, 2000.

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K1	CO1	To define entrepreneur and entrepreneurship.
K2	CO2	Understand the concepts of an entrepreneur, entrepreneurship, and entrepreneurial the ecosystem in the context of India.
K6	CO3	Appreciate the role of entrepreneurial motivation and creativity in innovation.
K6	CO4	Appreciate the role of entrepreneurial motivation and creativity in innovation.
K2	CO5	Gain insight into the setting up of an enterprise and its management.

Mapping of COs with POs& PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	M	S	M	S	S	S	M	S	S
CO2	S	S	S	M	S	S	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) -3 Marks Moderately Correlating (M) - 2 marks

Weakly Correlating (W) -1 Mark No Correlation (N) - 0 mark

Course Code	U21HSE532	FOOD SERVICE MANAGEMENT	L	T	P	C
ELECTIVE-III			3	-	-	3
Cognitive Level		K2: Understand K4: Analysis K5: Evaluate				
Learning Objectives		The course aims to 1. Understand the principles and functions of catering institutions 2. Know the cost accounting procedures adopted in food service institutions 3. Gain knowledge about laws governing foodservice establishments.				

Unit I Foodservice management: overview

Foodservice systems: Definition, objective, functions: Planning, organizing, directing, controlling, coordinating, and evaluating. types of service – English, French, American, room service and mobile, buffet. Growth of foodservice industry – factors affecting the growth of foodservice industry.

Unit II types of equipment and layout

Equipments used in Foodservice industries-Classification of equipment's electrical and non-electrical equipment for food storage, preparation, serving, dishwashing, and laundering. Food plant -Types of Kitchen, Layout of different food service establishments, drainage, Waterlines, lighting, and ventilation.

Unit III Food safety

Food safety: definition, principles, the importance of food safety in foodservice institutes, sanitation and hygiene in food service institution- kitchen, distribution, and Storage. Waste disposal, Pest control, and other safety measures.

Unit IV Tools of management and personnel management

Tools-The Organization Chart, Job Description, and specification, Time schedule, Work schedule, Job Analysis, Personnel Management: Selection, training, supervision of personnel. Labour policy and legislation, Employee facilities and benefits, welfare schemes, and laws governing food service institutions.

Unit V Financial management

Financial Management: Buying and accounting procedures in foodservice institutions, budget and its types, inventory control, methods of cost control, Cost accounting/analysis-Cost concepts- types of cost-fixed cost, semi-fixed cost, variable cost.Cost accounting and bookkeeping, maintenance of the account, balance sheet, food costing.

References

1. Sethi, Mohini. Institutional food management. New Age International, 2008.
2. Cousins, John, Dennis Lillicrap, and Suzanne Weekes. *Food and beverage service*. Hachette UK, 2014.
3. Vijay Dhawan, Food and Beverage Service, 1st Edition, Frank Bros & Co., 2000 Braun, Verlagshans.of Spa Design, 2009.
4. Aggarwal D.K, Housekeeping Management, AMAN Publications, Newdelhi, 2006.
5. Dr. Singh.R. K, Modern Trends in Hospitality industry, AMAN Publications, New Delhi, 2006.
6. Puckett, Ruby Parker. *Foodservice manual for health care institutions*. Vol. 150. John Wiley & Sons, 2012.

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Discuss the scope of foodservice management principles and functions.
K4	CO2	Compare the electrical and non-electrical equipments in foodservice establishments.
K4	CO3	Analyze the cost account methods and their importance.
K2	CO4	Explain the functions of personnel management organization
K5	CO5	Evaluate the kind of kitchen layout.

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	M	S	S	S	S	S	M	S	S
CO2	S	S	S	M	S	S	S	S	S	M	S	S
CO3	S	S	S	M	S	S	S	S	S	S	S	S
CO4	S	S	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S)	-	3 Marks
Moderately Correlating (M)	-	2 marks
Weakly Correlating (W)	-	1 Mark
No Correlation (N)	-	0 mark

Course Code	U21HSE533	Basics of Design	L	T	P	C
ELECTIVE-III			3	-	-	3
Cognitive Level		K2: Understand K3: Apply K4: Analysis				
Learning Objectives		The course aims to 1.Impart knowledge about functions and theories of clothing. 2.Understand the basics of fashion and the fashion industry. 3.Develop sensitivity towards the selection of garments and garment design.				

Unit I Design and Elements

Design, structural Design, Decorative Design, - Ornamental Design. Elements of design; Line – Vertical line, horizontal line, diagonal line, curved line, broken lines, V-neck line – shape, texture and colour.

Unit IIPrinciples of Design

Proportion or scale – Balance: Symmetrical, Asymmetrical and radial – Emphasis: Plain background, decoration, contrast colour – Rhythm: Repetition, alteration, progression, continuous line movement – Harmony: line shape colour texture and idea.

Unit III Colour

Definition, Elements of colour, Hue, value and intensity, classification of colour: primary, secondary, tertiary, Colour theory, Prang and Munsell colour chart and colour schemes, important colour qualities and selection of colour for various occasion and seasons.

Unit IV

Textile Design - Definition, Art of designing - Motif – modification of shapes and sizes, placement of motif, Source of designs and design ideas.

Unit V

Design Process in apparels - silhouette, proportion, understanding fabric; placement of motif and design modification with reference: Basic bodices, sleeves, collars, skirts, panel skirts, pleated skirts, trousers, Basic Proto-types, Embellishment.

Text books

1. Kathryn McKelvey and Janine Munslow Fashion Design: Process, Innovation and Practice, Blackwell Science Ltd., Blackwell Publishing Company, UK 2005

2. Jenny Davis A Complete Guide to Fashion Designing, , First Edition, AbhishekPublications, Chandigarh 2006

3. Mahadevan, M.G. Textile colouring, First Edition, Abhishek Publication Chandigarh 2008

Reference books

1.PremlataMullick Text book of Textile Designing, Kalyani Publishers, Ludhiana 2006

2.Parachure, J. WFundamentals of Designing for Textiles and other end use, Woodhead publishing, India, New Delhi 2009

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Understand the fundamentals of design and elements
K2	CO2	Acquire knowledge on principles of design
K4	CO3	Analyze the basics of colour theory
K4	CO4	Classify and illustrate various components of textile design
K3	CO5	Apply the knowledge of design process and apparels

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	M	S	S	S	S	S	M	S	S
CO2	S	S	S	M	S	S	S	S	S	M	S	S
CO3	S	S	S	M	S	S	S	S	S	S	S	S
CO4	S	S	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks

Moderately Correlating (M) - 2 marks

Weakly Correlating (W) - 1 Mark

No Correlation (N) - 0 mark

Course Code	U21HSE641	GENDER AND DEVELOPMENT	L	T	P	C
ELECTIVE-IV			3	-	-	3
Cognitive Level		K2: Understand K3: Apply K4: Analysis				
Learning Objectives		The course aims to 1. develop concern for women's issues and problems and 2. have a basic idea of the efforts in India for women's uplift.				

Unit IGender and Development:

Concept of gender, gender roles, gender budgeting, gender auditing, gender mainstreaming, gender analysis matrix, shift from welfare to development and empowerment, gender in development, gender and development, National and International efforts for gender empowerment.

Unit II Status of Women in India

Status of Women in India:Status – Meaning, Status of Women as per latest census report – Gender gaps and their implications, Sex ratio, Life expectation at birth, Health, Nutrition and Mortality, age at marriage, fertility, literacy, employment.

Unit III Violence against women

Violence against women: concepts, different types of violence, dowry, divorce, female feticide and infanticide, sexual discrimination, sexual exploitation, obscene advertisements, and projects in the mass media. Efforts for the elimination of all forms of discrimination.

Unit IV Policies for Women's development

Policies for Women's development: objectives of women development policies, National Policy for Women's empowerment, Policy perspective, mainstreaming, a gender perspective in the development process. Economic, Social, Legal, and political empowerment of Women.

Unit V Women and Law

Women and law: concept of law in women's development, importance of law in women's development, popular women welfare laws, marriage, dowry, divorce, property, employment and adoption, political participation, legal literacy for Women, family Counselling center and cybercrime.

References

1. Presser, Harriet, and Gita Sen. *Women's empowerment and demographic processes: Moving beyond Cairo*. Oxford University Press, 2000.
2. Sawyer, Roger. *We are but women: women in Ireland's history*. Routledge, 2002.
3. Forster, Christine, and Jaya Sagade. *Women's Human Rights in India*. Routledge India, 2019.
4. Pandit, Harshida. *Women of India: An Annotated Bibliography*. Vol. 26. Routledge, 2017.

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	trace the significance of gender development in national development
K3	CO2	report the violence against women at family and workplace.
K2	CO3	get familiarize with legislation and policies for women
K4	CO4	Analyze the status of women in society.
K3	CO5	Identify the laws available for the welfare of women.

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	M	S	S	S	S	S	S	M	M
CO2	S	S	S	S	S	M	S	S	S	S	M	S
CO3	S	S	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	M	S

Strongly Correlating (S) -3 MarksModerately Correlating (M) -2 marks

Weakly Correlating (W) -1 Mark No Correlation (N) - 0 mark

Course Code	U21HSE642	RURAL PROGRAMPLANNING	L	T	P	C
ELECTIVE-IV			3	-	-	3
Cognitive Level		K2: Understand K3: Apply K5: Evaluate				
Learning Objectives		The course aims to Expose the students to know the fundamentals of PLA Understanding the participatory Techniques and getting hands-on experience in the field settings.				

Unit I Concepts

Participation: Meaning and definitions of participation, Types, Factors influencing participation, Process of

participation, Dimensions of participation. Disadvantages of the traditional method of a planner,

The top-down approach and bottom-up approach

Unit II Local-level planning

Local-level planning: Meaning and definition of local and micro-level planning, Participatory learning action in micro-level planning, Four components of micro-level plans, Stages of Micro-level plans: Tactical planning stage and action planning stage.

Unit III PRA roles

PRA Participatory

Meaning and definition of PRA, Principles of PRA, Do's and Don'ts and advantages of

PRA, Attitude BehaviourChange (ABC).

Unit IV Mapping and diagram

Mapping and Diagram

Meaning, types of participatory maps, Procedure for drawing maps - applications - advantages and limitations of maps. Transects - Meaning – types –procedures – applications – merits and limitations.Flow diagram, meaning, types, applications, merits, and limitations of flow diagrams.

Unit-V Time related methods

Time-Related methods Ranking Exercise

Meaning, types, procedure, applications, merits, and limitations of time-related methods such as timeline, trend analysis, seasonal calendars, and daily schedule. Wealth or well-being ranking, pair-wise ranking, matrix ranking, matrix ranking and scoring, direct ranking, and decision-making matrix

References:

1. Thomas William, A.J. Christopher "Rural Development concept and Recent approaches", RAWAT publication, 2015.

2. Amitav Mukherjee, Participatory Rural Appraisal", Concept publishing company, New Delhi, 2004.

3.Somesh Kumar (2003), Methods for Community Participation, New Delhi, Vistara Publications2003.

4. Narayanaswamy. N, Participatory Rural Appraisal: Principles, Methods, and Applications, New Delhi, Sage Publications, 2009.

5. Adhikari, Participatory planning and project management in Extension Science, Agrotech publisher Academy, 2006.

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Gain knowledge on people participation
K3	CO2	Acquire information on local and micro-level planning
K2	CO3	Know the basics of PRA
K5	CO4	Train the community to do the exercise
K3	CO5	Acquiring the skills to mobilize and involving the people in local participation

Mapping of COs with POs& PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	S	S	S	S
CO2	S	S	S	M	S	S	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) -3 Marks Moderately Correlating (M) - 2 marks

Weakly Correlating (W) -1 Mark No Correlation (N) -0 mark

Course Code	U21HSE643	Bakery and confectionery	L	T	P	C
ELECTIVE-IV			3	-	-	3
Cognitive Level		K2: Understand K3: Apply K4: Analysis K6: Create				
Learning Objectives		Course aims to 1. Understand the fundamentals of baking and learn the technologies behind bakery products. 2. Learn the current status, growth rate, the economic importance of baking and confectionery in India.				

Unit I Introduction of bakery

Introduction of bakery–definition, principles, types of baked and confectionery products. Major and minor equipment – required to start a small bakery unit. Baking Industry: scope in the Indian economy. History of Baking- present trends, Bakery terms. Nutritional facts of bakery products, Standards, and regulations.

Unit II Ingredients of bakery

Major and minor ingredients in baking Major ingredients – flour, fat, sugar and leavening agent – types, role in bakery Minor ingredients – milk, water, salt – types, role in baker.

Bakery Products: Ingredients & processes for bread, biscuits, cookies & crackers, cakes & pastries; doughnuts; rusks; other baked products. Staling and losses in baking.

Unit III Principles of baking

Principles involved in the yeast products preparation, methods – straight dough method, salt delayed method, no dough time method, sponge and dough method, ferment and dough method. Modified bakery products and breakfast cereals: High fiber, low sugar, low fat, and gluten-free bakery products for people with special requirements. Production and quality of breakfast cereals.

Unit IVConfectionery Products

Confectionery Products: Characteristics and processing of raw material; Technology of manufacturing of Hard-boiled candies, toffees, fruit drops, chocolates, and other confectioneries: ingredients, processes, product quality parameters, defects, and corrective measures.

Unit V Equipment in bakery and confectionery

Equipment used in Bakery and Confectionery Industry: Working on various equipment like Mixers, proofing chambers, dough dividers, moulder and sheeter, baking ovens, cooling chamber, sealing and packaging machines, Rolling and cutting machine of bakery and confectionery unit.

Text Books:

1. Dubey, S.C (2007) Basic Baking 5 th edition. ChanakyaMudrakPvt. Ltd. New Delhi.

2. Raina,Basic Food Preparation-A complete Manual. 3 rd. edition, Orient Longman Pvt. Ltd. USA, 2003.

Reference Books

1.Hui, YiuHin, Harold Corke, Ingrid De Leyn, Wai-Kit Nip, and Nanna A. Cross, eds. *Bakery products: science and technology*. John Wiley & Sons, 2008.

2. Kaur, Kulvinder. *In the Bakery*.Routledge, 2019.

3. Khetarpaul, Neelam. *Bakery Science and cereal technology*.Daya Books, 2005.

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Understand the bakery science and its application on processing.
K3	CO2	Identify the basic ingredients to prepare bakery and confectionery products.
K4	CO3	Assess various methods in the preparation of modified bakery products.
K4	CO4	Choose the appropriate bakery equipment based on the specific needs.
K6	CO5	Check faults and provide remedies for bakery products.

Mapping of COs with POs& PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	M	S	S	S	S	S	S	S	S
CO2	S	S	S	S	S	S	S	S	S	S	S	S
CO3	S	S	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks

Moderately Correlating (M) - 2 marks

Weakly Correlating (W) - 1 Mark

No Correlation (N) - 0 marks

NON-MAJOR ELECTIVE

Course Code	U21HSN311	Basics of human nutrition	L	T	P	C
NME-I			2	-	-	2
Cognitive Level		K2: Understand K3: Apply K5: Evaluate				
Learning Objectives		Course aims to 1. understand the major nutrients relevant to human health. 2. gain knowledge on dietary sources, intake levels, physiological role, and requirement of major nutrients on the human body. .				

Unit I Introduction to nutrition

Introduction to nutrition: Definition of nutrition- food, health, nutritional status,

malnutrition, over nutrition, undernutrition, functions of food, balanced diet, food pyramid, ICMR Basic five food groups.

Unit II Macronutrients

Macronutrients: carbohydrates- classification, functions, food sources.

Dietary fibre - Functions, food sources & deficiencies. Lipids and fats- definition, classification, functions, Deficiency, sources-Proteins, Definition, classification, functions, deficiency, sources.

Unit III Micronutrients

Micronutrients: vitamins-, definition, classification &functions of vitamins

Nomenclature, functions, deficiency& sources of vitamins A, D, E, K Nomenclature, functions, deficiency& sources of vitamins B1, B2, B3, folic acid, B6, B12.

Unit IV Minerals

Macrominerals and micro minerals:definition, classification, functions, deficiency sources of calcium, Iron, Zinc, phosphorus, iodine, fluorine, sodium, recommended dietary intake, food sources.

Unit V Water

Water: Distribution of water and electrolytes, functions, requirements, sources, water balance, water depletion, water excess. Water: dehydration, causes, symptoms, preventive measures, oedema- causes, and preventive measures.

References

1. Srilakshmi B, Dietetics, sixth edition, New age Publishing Press, New Delhi, 2011
2. Park, K.: Park's Textbook of Preventive and Social Medicine, 18th Edition, M/s. Banarasi das Bhanot, Jabalpur, 2000.

3. Swaminathan, M. Essentials of Food and Nutrition, Vols. I and II. Ganesh & Co. 2000.
4. Stacy N, William's Basic Nutrition and Diet Therapy, 12th edition, Elsevier publications, UK, 2005.
5. Mahan LK, Stump SE, and Raymond JL, Krause's Food and Nutrition Care Process, 13th Edition, Elsevier Saunders, Missouri, 2012
6. Barasi, Mary. *Human nutrition: a health perspective*. CRC Press, 2003.
7. Roday S, Food Science, and Nutrition, Oxford university press, New Delhi, 2007

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Identify the functions and deficiencies of minerals.
K2	CO2	Explain the structure and components of nutrients.
K3	CO3	Outline the water distribution in the human body
K4	CO4	Analyze the different quality aspects of macronutrients and discuss on specific functions of macronutrients in the human body
K5	CO5	Identify the functions and deficiencies of minerals.

Mapping of COs with POs& PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	S	S	S	M
CO2	S	S	S	S	S	S	S	S	S	S	S	S
CO3	S	S	M	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks Moderately Correlating (M) - 2 marks

Weakly Correlating (W) -1 Mark No Correlation (N) - 0 mark

Course Code	U21HSN312	Basics of fashion concepts	L	T	P	C
NME-I			2	-	-	2
Cognitive Level		K2: Understand K3: Apply K4: Analysis K5: Evaluate				
Learning Objectives		**The course aims to** • To impart knowledge about fashion design concepts • To acquaint students with the Current scenario of the Fashion Industry				

Unit I Fashion concepts

Meaning of Fashion -Need for clothing and Fashion perspectives - Fashion terminologies . Fabric terms, Accessory Terms, Common Sewing Terms, and Industry Language. Fashion evolution- haute couture, pretaporter.

Unit II Fashion movement

Fashion Movement - Meaning, features of the fashion movement, theories, and principles-trickle up, trickle-down and trickle across. Fashion - cycle, Fashion forecasting, fashion change – social and psychological reasons.

Unit III Substance of fashion industry

The substance of Fashion Industry - Soft goods chain-textile, apparel & retail segment - Apparel Categories, Designing process - World fashion design centers, Influential designers in India and abroad.

Unit IV Fashion business

Fashion Business Trends - Consumer Groups, Consumer Buying Consumer market, Importance of demographics and psychographics& Niche Marketing. Fashion enterprise-fashion information services.Fashion websites.

Unit V Carrier in fashion

A career in Fashion Industry - Career planning process, Training, and experience needed a career in textile, apparel, retail & fashion promotion, Entrepreneurship in fashion, boutique management.

References

1. Kathryn McKelvey and Janine Munslow Fashion Design: Process, Innovation, and Practice, Blackwell Science Ltd., Blackwell Publishing Company, UK. (2005),

2. Jenny Davis A Complete Guide to Fashion Designing, First Edition, Abhishek Publications, Chandigarh. (2006),

3. Mahadevan, M.G. Textile colouring, First Edition, Abhishek Publication Chandigarh. (2008)

4. PremlataMullick Textbook of Textile Designing, Kalyani Publishers, Ludhiana. (2006)

5. Parachure, J. W Fundamentals of Designing for Textiles and other end-use, Woodhead publishing, India, New Delhi. (2009).

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Basics of fashion
K2	CO2	Theories and principles of fashion
K3	CO3	Textile industry
K4	CO4	Fashion business trends
K5	CO5	Carrier in the fashion industry

Mapping of COs with POs& PSOs:

CO/PO	PO1	PO2	PO 3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	S	S	S	S	S	S	S	S	M
CO2	S	S	S	S	S	S	S	S	S	S	S	S
CO3	S	S	M	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 MarksModerately Correlating (M) -2 marks
Weakly Correlating (W) -1 MarkNo Correlation (N) - 0 mark

Course Code	U21HSN421	FIBRE TO FABRIC	L	T	P	C
NME-II			2	-	-	2
Cognitive Level		K 2:Understanding K3:Applying K4: Analysis				
Learning Objectives		The course aims to 1.gain knowledge on the various textile fibers, their manufacture, spinning, and weaving operations. 2.understand the basic and functional finishes applied on fabrics and the qualities imparted. 3.developthe skill to choose appropriate dyes and printing techniques for a given fabric.				

UNIT –I Classification and manufacturing process of textile fibers

Classification of textile fibers blends and mixtures.The manufacturing process of:

1. Natural fibers Cotton, Linen, Wool Silk, and Asbestos

2. Man-made fibers Rayon, Nylon, Polyester, Acrylic and Glass

UNIT –II Fibre identification, properties, and spinning

1. Identification of textile fibers

2.Physical properties of fibers

3. Yarn making Spinning

4.Types of yam simple, complex, and novelty.

UNIT –IIIFabric manufacturing techniques

1. Weaving basic plain, twill, satin; Fancy weaves Pile, Dobby and

Jacquard.

2. Non-woven Knitting, felting, and bonding

UNIT –IVFabric finishing

1. Basic singeing, scouring, bleaching, mercerizing, sizing, calendaring,tendering.

2.Functional waterproofing, water repellency, fire proofing, mothproofing, sanforising, crease recovery.

UNIT –VDyeing and printing

1. Classification of dyes, application to different fibers, stages of dyeing.

2. Printing: Hand: Resist, stencil, screen, and block.

3. Machine: Rotary Screen Printing, Roller Printing.

REFERENCES:

1. H.V.S Murthy,WPI,2016, Introduction to Textile Fibers
2. Subramanian Senthilkannan Muthu,2020, Textile Science and clothing technology Springer publications
3. Kadolph S J,2013,Textiles: Pearson New International Edition, Pearson Education Ltd.
4. Vatsala, R,2003,Textbook of Textiles and Clothing, Indian Council of Agriculture Research
5. Anbuman. I, (2007)"Knitting Fundamentals, Machines, Structures, and Developments".
6. D.B Ajgaonkar., 2008 "Knitting Technology", Universal Publication Corporation, Mumbai,

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Classify the textile fibers and describe the manufacturing process of natural, man-made, and minor textile fibers.
K2	CO2	Identify the fiber content of the fabric.
K2	CO3	Illustrate and give examples of yarns and weaves.
K3	CO4	demonstrate the basic and functional finishes based on the end-use of the material
K4	CO5	Construct the hand and machine printing techniques.

Mapping of COs with POs& PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	S	M	S	S	S	S	S	S	S	S
CO2	S	S	S	M	S	S	S	S	S	S	M	S
CO3	S	S	M	M	S	S	S	S	S	S	S	S
CO4	S	S	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	M	S	S	S	S	S	M	S	S

Strongly Correlating (S) - 3 Marks

Moderately Correlating (M) - 2 marks

Weakly Correlating (W) - 1 Mark

No Correlation (N) - 0 mark

Course Code	U21HSN422	FOOD PRESERVATION CONCEPTS	L	T	P	C
NME-II			2	-	-	2
Cognitive Level		K 2:Understanding K3:Applying K5: Evaluating K 6: Creating				
Learning Objectives		The course aims to 1) To study the basics of various food preservation technologies and the criteria needed to be taken for the appropriate processing of foods. 2)To contribute proper utilization of food free from contamination increased shelf life with prevention of wastage.				

Unit I Food preservation

Introduction to Food Preservation: Definition and scope of Food preservation Technology, Principles of food preservation, perishable, non-perishable food, causes of food spoilage: Microbial, Physical, Chemical contamination, causes of food contamination, sources of microorganisms.

Unit II Food preservation methods

Food preservation by low temperature: Introduction to Refrigeration, cold storage, and freezing, Principle of the freezing, freezing curve, Changes occurring during freezing, Types of freezing - slow freezing, quick freezing. Introduction to thawing, changes during thawing, and its effect on food.

Unit III Methods of preservation

Food preservation by high-temperature Thermal processing methods of foods: Cooking methods blanching methods, pasteurization methods and sterilization of foods, canning in food preservation, bottling methods, and spoilages in canned foods.

Unit IV Food preservation by drying and dehydration

Food preservation by drying and dehydration-Definition of drying and dehydration, Drying curve and Factors affecting rate of drying, Different methods of drying and driers used in the food industry, drying foods, dehydrated foods, availability of drying foods in the market,

Unit V Food preservatives

Food preservation by irradiation and preservatives: Definition, Methods of Irradiation, Uses and safety aspects of radiation in food processing. Preservatives: natural preservatives-salt, sugar, honey, oil, tamarind, chemical preservatives: class II Preservatives,

Text Books:

1. Sivasankar, B. Food Processing, and preservation 2nd edition, prentice Hall, Pvt, Ltd.(2013),

References:

1. Subbulakshmi, Shobha A et.al., Food Processing, and Preservation, New Age International Publishers. (2006),

2. Srilakshmi Food Science, New Age International Publishers.(2008),

3. Sudesh and NeelamFoodPreservation, Published by Agrotech.(2009),

4. Brennan JG and GrandisonAS Food processing handbook. 2nd Edition, John Wiley. (2012),

5.ManoranjanKalia Food Quality Management Second Edition, Aggrotech Publishing Academy, Udaipur. (2014),

6. Dr.AnjuSingh Hand book of food preservation, Published by Agrotech.(2017),

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K6	CO1	Design and develop the unit operations required to produce a given

		food product.
K2	CO2	Classify the various types of food spoilage and prevent using suitable processing methods.
K2	CO3	Outline the principles and concepts of processing techniques and their effects on product quality.
K5	CO4	Evaluate the novel technologies in food preservation.
K3	CO5	Utilize the possible, recent preservation methods in the food processing sector.

Mapping of COs with POs& PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	**S**	S	**S**	**S**	**S**	M	**S**	S	**S**	**S**	S
CO2	S	**S**	M	**S**	**S**	**S**	S	**S**	S	**M**	**S**	S
CO3	S	**S**	S	**S**	**S**	**S**	S	**S**	S	**M**	**S**	S
CO4	S	**S**	M	**S**	**S**	**S**	S	**S**	S	**S**	**S**	M
CO5	S	**S**	S	**S**	**S**	**S**	M	**S**	S	**S**	**S**	S

Strongly Correlating (S) - 3 Marks

Moderately Correlating (M) - 2 marks

Weakly Correlating (W) - 1 Mark

No Correlation (N) - 0 mark

Course Code	U21HSS53	HOUSEKEEPING	L	T	P	C
SBE-III			2	-	-	2
Cognitive Level		K2: Understand K3: Apply K6: Create				
Learning Objectives		The course aims to 1. understand the basic principles of housekeeping in Food Service Institutions 2. gain experience in the selection, use, and care of housekeeping tools and equipment.				

SKILL-BASED ELECTIVES

Unit I Housekeeping

Role of housekeeping in the hospitality industry, Organizational chart of housekeeping department Planning, organization & communication of housekeeping activities, Co-ordination with other housekeeping departments, Roles and responsibilities of personnel in the housekeeping department.

Unit II Cleaning agents

Cleaning agents - selection and use for different surfaces,cleaning equipment - selection, care and maintenance,cleaning techniques - Daily, weekly, yearly; procedure for cleaning of the guest room and public area fire prevention and control. Accident prevention, security measures. First –aid and pest control Types of common pests and effective methods of control pests.

Unit III Linen room

Linen room –Linen types, storing, stocktaking, and distribution of linen. Inventory control,

condemnation, Procedure & costing consideration.Features of linen room and its management.

Unit IV Furniture

Furniture selection: objectives, features, the importance of furniture selection and its types,

flower arrangement – principles, preservation of flower and plant materials, window

treatment, bed making, carpets.

Unit V Service

Special service - Telephone answering, guestroom inspection, guest loan items, lost and found. Role of housekeeping in home and food service institutions, features of special service, factors to improve service.

REFERENCES

1. Sudhir Andrews, Food and Beverage Service Training Manual, Tata McGraw Hill

Publishing Company Ltd New Delhi, 1999.

2. Lilli Crap, D R and Cousins J A Food and Beverage Service,4th Edition, Hodder and Stoughton, 1994.

3. Vijay Dhawan,Food and Beverage Service, 1st Edition, Frank Bros & Co., 2000

Braun, Verlagshans.of Spa Design 1st ed, 2009.

4.Arora, R. K, Professional Housekeeping. A. P. H. Publishing Corporation, New

Delhi, 2010.

5.George, J. B, Housekeeping Operations, Design and Management, Mumbai: Jaico Publications, 2008.

6.Negi, J et al, Housekeeping Operation and Management – Procedures and Techniques, New Delhi: Kanishka Publication, 2011.

7.Schneider, Madelin, Tucker, Georgina and Scoviak, Mary (1998). The Professional

Housekeeper.John Wiley & Sons, Inc., New York

Course outcomes

On successful completion of the course, the students will be able to gain knowledge about

K2	CO1	Appreciate the need for maintenance of facilities and services.
K2	CO2	Understanding operations management in cleaning and safety systems.
K6	CO3	Develop competence for professional practice in housekeeping
K3	CO4	Ability to manage the resources of the housekeeping department effectively
K2	CO5	Ability to explain the safety and security needs of hospitality operations.

Mapping of COs with POs& PSOs:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	S	M	M	S	S	S	S	S	M	S	S
CO2	S	S	S	S	S	S	S	S	S	M	S	S
CO3	S	S	S	M	S	S	S	S	S	S	S	S
CO4	S	S	S	M	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S	S	S

Strongly Correlating (S) - 3 Marks
Moderately Correlating (M) - 2 marks

Weakly Correlating (W)	-	1 Mark
No Correlation (N)	-	0 mark

Course Code	U21HSS64	FOOD FERMENTATION	L	T	P	C
SBE-VI			2	-	-	2
Cognitive Level		K2: Understand K3: Apply K5: Evaluate K6: Create				
Learning Objectives		This course aims to Provide the concepts of fermentation techniques Importance and benefits of fermented foods				

UnitI Basics of fermentation

Fermentation, types of fermentation, Fermentation Pathways for Industrial Products: Biochemical pathways of metabolic reactions for utilization of carbon sources and formation of different metabolites by microorganisms; Strain Development -Various techniques of modifying the strains for increased production of industrial products.

Unit II Fermented foods

Fermentative Production: a) Foods: Processes for preparing fermented products including Yogurt (curd) and other Traditional Indian Products like idli, dosa, dhokla, shrikhand, etc., Soya based products like soya sauce, natto, etc., Cocoa, Cheese, etc.; fermented foods in the market and its needs.

Unit III Beverages

Beverages: concepts of fermentation in beverage processing, types of fermented beverages, alcoholic beverages based on fruit juices (wines), cereals (whisky, beer, vodka,etc,), sugar cane (rum), etc. Process description, quality of raw materials, fermentation process controls,etc.b) Industrial chemicals.

Unit IV Fermented production

Fermentative Production of different products: Organic acids like (Citric Acid, Lactic Acid), Amino Acids (Glutamic acid, Lysine), Antibiotics (Erythromycin, Penicillin),

Polysaccharides (Dextran, Xanthan), etc.; steroids transformation; process descriptions and key controls for optimal production.

Unit V Advantages of fermentation

Advantages of fermentation: health benefits, gastrointestinal diseases and fermented foods, the role of fermented foods in nutrient absorption. Processed fermented foods in the market. Prebiotics: role of prebiotics in health, probiotics: role of probiotics in health.

References

1.M.N. Ahmed Food Science and Nutrition, FirstEdition,(2005),
2.Norman N. Potter. JosephH.Hotchkis Food Science,Fifth Edition,(2007),
3.SunetraRoday Food Science and Nutrition, SecondEdition,(2012),
4.SumatiRajagopalMudambi Food Science,(2015),
5.M. Swaminathan Food and Nutrition, Second Edition,(2017),
6. Vogel, H.C. and C.L. Todaro, Fermentation and Biochemical Engineering Handbook: Principles, Process Design and Equipment, 2nd Edition, Standard Publishers., 2005.

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K6	CO1	Concept and types of fermentation
K2	CO2	Different types of fermented foods
K2	CO3	Alcoholic fermented foods
K5	CO4	Fermentation with acids and alkalis
K3	CO5	Advantages of fermented foods

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	**S**	S	**S**	**S**	**S**	M	**S**	S	**S**	**S**	S
CO2	S	**S**	M	**S**	**S**	**S**	S	**S**	S	**M**	**S**	S
CO3	S	**S**	S	**S**	**S**	**S**	S	**S**	S	**M**	**S**	S
CO4	S	**S**	M	**S**	**S**	**S**	S	**S**	S	**S**	**S**	M
CO5	S	**S**	S	**S**	**S**	**S**	M	**S**	S	**S**	**S**	S

Strongly Correlating (S) -3 MarksModerately Correlating (M) - 2 marks

Weakly Correlating (W) -1 MarkNo Correlation (N) -0 mark

VALUE-ADDED COURSE

Course Code	U21HSV51	FOOD BIOTECHNOLOGY	L	T	P	C
			2	-	-	2
Cognitive Level		The course aims to 1) Explain the methods that humans have developed to use biotechnology to produce foods and food ingredients 2) Apply the biotechnological tools and techniques				
Learning Objectives		This course aims to Provide the concepts of fermentation techniques Importance and benefits of fermented foods				

UnitIIntroduction to biotechnology:

Scope of biotechnology, Concept of Gene Cloning-Restriction enzymes, Modifying enzymes, enzymes and its application in food biotechnology. Vectors- Properties of good vector, Introduction of Genes, Selection of recombinants.

UnitIIGenetic Engineering:

Genetically modified foods-Definition, examples of genetically modified foods, advantages, disadvantages, and safety aspects of foods produced by genetic engineering, Application of genetic engineering in food biotechnology. Rules and regulations for genetically modified foods

UnitIII Food fermentation:

Food fermentation: the concept of microbial fermentation; fermentation process: dual and multiple fermentation, continuous fermentation and batch fermentation; factors controlling fermentation, fermented food products: dairy fermented foods, cereal-based food fermentation,

UnitIV Enzymes in food processing industries

Principles of enzyme immobilization: concept and importance of enzyme application.

Types of immobilization techniques and their importance; Immobilized enzymes in food processing. Enzymes application advantages and their harmful effects on health

Unit-VBiotechnology for Food Production

History, developments, the current status of transgenic crops -Crop improvement and enhanced agronomic performance- Food products with enhanced shelf-life, processing and functional quality- Nutritional enhancement-macro and micronutrients.

References

Textbook:

1 Satyanarayana, U, Biotechnology, Books and Allied (P) Ltd., Kolkata.(2007),

References:

1. Dubey, R.C Text Book of Biotechnology, S. Chand and Co. Ltd, NewDelhi. (2001),

2. Israel Goldberg Functional foods, Pharma foods and Nutraceuticals, Culinary and Hospitality Industry Publication Services.(2001),

3. Robert Easy Wildman Handbook of Nutraceuticals and functional foods, Culinary and Hospitality Industry Publication Services.(2001)

COURSE OUTCOMES

On successful completion of the course, the students will be able to gain knowledge about

K4	CO1	Explain the methods that humans have developed to use biotechnology to produce foods and foodingredients.
K4	CO2	Identify the pros and cons of the use of biotechnology to produce foods including ecological, social, and economic impacts
K5	CO3	Apply the biotechnological tools and techniques
K5	CO4	Assess the importance of various fermentation methods to design various fermented foods and food products
K6	CO5	Apply the knowledge and synthesize new solutions and ways of thinking in food industries

Mapping of COs with POs& PSOs:

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	S	**S**	S	**S**	**S**	**S**	S	**S**	S	**S**	**S**	S
CO2	S	**S**	S	**S**	**S**	**S**	S	**S**	M	**S**	**S**	S
CO3	M	**S**	S	**S**	**S**	**S**	S	**S**	S	**S**	**S**	S
CO4	S	**S**	S	**S**	**S**	**S**	S	**S**	S	**S**	**S**	S
CO5	S	**S**	S	**S**	**S**	**S**	S	**S**	S	**M**	**S**	S

Strongly Correlating (S) - 3 Marks

Moderately Correlating (M) - 2 marks

Weakly Correlating (W) - 1 Mark

No Correlation (N) - 0 mark