SYLLABUS

BSc - HOME SCIENCE

(3 YEAR DEGREE PROGRAM)

CHOICE BASED CREDIT SYSTEM (CBCS)

ACCORDING TO NEP 2020

(Effective from 2025-26)

MAA SHAKUMBHARI UNIVERSITY, SAHARANPUR

DEPARTMENT OF HOME SCIENCE

FACULTY OF SCIENCE

Members of the Board of Studies:

S.No.	Name	Signature
1.	Prof. Garima Jain ,Dean,Science Faculty	
2.	Prof. MamtaShyam,Convener	
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PRELUDE

The objective of any program at a higher education institution is to prepare students for society at large. MAA SHAKUMBARI UNIVERSITY designs all its programs in the best interest of its students. In this endeavor, it introduces a new vision for undergraduate courses, adopting a Learning Outcome-based Curriculum Framework (LOCF) for all undergraduate programs. The LOCF approach aims to provide a focused, outcome-based syllabus at the under graduate level with an agenda to structure the teaching learning experiences in a more student-centric manner.The UG programs will equip students with both academic knowledge and employability skills. The new curriculum for B.Sc. Home Science will enable students to acquire the necessary knowledge, skills, and attitude in various areas of Home Science. It adopts an ecological approach, engaging students through teaching, research, and extension. This will prepare them for opportunities in employment and research organizations, food and textile industries, education, child development, green buildings, strategic planning, and communication technologies . They are prepared to take higher education in their specialization.

B.Sc. - HOME SCIENCE

Home Science is an interdisciplinary field of study that provides scientific and systematic knowledge about various aspects of family and community living. As a discipline, Home Science integrates components from the sciences, social sciences and technology to facilitate the study and applies this knowledge to enhance the quality of human life. It is an interdisciplinary field which prepares the students to take up professional roles in multiple career fields. Adopting a rights-based approach which is so important for a developing nation like India, the field of Home Science has contributed immensely in shaping lives of children, women and communities at large.

Home Science has contributed a great deal towards national development by training students to take up leadership roles in extension and community outreach programs. The students are encouraged to develop a scientific temper, familiarizing them with the use of innovative technologies for linking community towards judicious and sustainable use of resources for societal development.

The B.Sc. Home Science course is a 3-year Choice Based Credit System curriculum course which is multidisciplinary in nature and imparts knowledge of Social Sciences, Biological and Physical Sciences in addition to all the five areas of Home Science namely: Food and Nutrition , Human Development and Family Studies ,Textile and Clothing , Family Resource Management ,Communication and Extension. The CBCS system allows students the flexibility of selecting the subjects of their choice.

The programme includes Core/Major Courses and Minor elective courses. The Major courses are all compulsory courses. Elective courses can be taken from interdisciplinary fields based in student's interest and abilities. Compulsory co-curricular courses are mandatory for all UG programs according to NEP guidelines. To enhance the skills of students Vocational courses will be offered according to the student's choice as well as availability in campus. In the B.Sc. Home Science also, the students are exposed to all the five areas of Home Science in the all six semesters .

In contemporary times, Home Scientists can promote capacity building of individuals and communities for social and economic development especially towards women empowerment. They train youth and women from various strata

of society for fostering entrepreneurship. Many home scientists have exceptionally done well in different fields at national and global level. Our students are now being transformed from job seekers to job creators. They gain and provide employment in research organizations, food and textile industries, dietetic practice, education and child development domains, accreditation of green buildings, strategic planning and communication technologies. At the completion of the course, the students can either seek jobs directly or can opt for a Master's degree in the five streams of Home Science, Social Work, Mass Communication, Development Studies, Journalism, Human Resource Management, PG diploma in Dietetics, Fashion Designing, Interior Designing, Counseling, Special Education, Early Childhood Development, Gender Studies, Disability Studies and Entrepreneurship Development etc.

Applicability:

This syllabus shall apply from the session 2025-26.

Minimum Eligibility for Admission:

Any student who has cleared 10+2 with minimum 45% from any stream shall be eligible for admission in the course.

Programme Learning Outcomes:

Programme outcomes for B.Sc. Home Science course are as follows:

PO1.To understand and appreciate the role of interdisciplinary sciences in the development and wellbeing of individuals, families and communities.

PO2.To unable students with knowledge, skills, attitudes and values to do community work in all areas of Home Science.

PO3. To understand the sciences and technologies that enhance the quality of life of people.

PO4. To acquire professional and entrepreneurial skills for economic empowerment of self in particular and community in general.

PO5. To develop professional skills in food, nutrition, textiles, housing, product-making, communication technologies and human development.

PO6. To take science from the laboratory to the people.

Learning Outcome Based Approach to Curriculum Planning Nature and Extent of the Programme in B.Sc. Home Science:

The degree is awarded on the basis of demonstrated achievement of outcomes of knowledge, skill and community interventions and academic standards expected from Home Science. Learning outcomes specify what graduates completing a particular programme of study are expected to know, understand and be able to do at the end of their program of study. This approach allows for flexibility and innovation in program design and syllabi development, teaching learning process, student assessment at different levels and periodic program review.

Aims of Bachelor Degree Programme in B.Sc. Home Science:

The aims of the B.Sc. Home Science is to:

a) Enable students with knowledge, skills, attitudes and values to do community work in all areas of Home Science.

b) Ensure global competitiveness and excellence in theory and research.

c) Prepare the students for master's program in their respective specialization.

d) Train the students to take science from lab to community to improve quality of life of people.

Graduate Attributes in B.Sc. Home Science:

Some of the characteristics attributes of B.Sc. Home Science include:

*Disciplinary Knowledge

*Communication Skills

* Research related skills

* Cooperation/ team work

* Self-directed learning

* Multicultural competence

* Moral and ethical awareness/ reasoning

* Leadership qualities

* Lifelong learning

Qualification Descriptors for B.Sc. Home Science:

Following descriptors indicate the expectations from B.Sc Home Science:

* Demonstrate systematic, extensive and coherent knowledge in one of the five disciplines of Home Science namely Food and Nutrition, Human Development and Childhood Studies, Development Communication and Extension, Resource Management and Design Application, and Fabric and Apparel Science.

* Ensure basic understanding of all five areas to be able to work in national development programs with multi-disciplinary acumen.

* Demonstrate skill in profession, community outreach, policy and research in their specialization area.

* Demonstrate community and laboratory-based data collection, analysis and interpretation.

*Enhance communication skills for research findings and critique of life processes in community education.

* Demonstrate subject-related skills for employment opportunities.

SEMESTER-WISE TITLES OF THE PAPERS IN B.SC. (HOME SCIENCE)

YEAR	SEMESTER	COURSE CODE	PAPER TITLE	THEORY or PRACTICAL	CREDITS
CERTIFICATE IN HOME SCIENCE					
I Year	I	0122801	Introduction to Food science and Human Physiology	Theory	4
		0122802	Introduction to Human Development I and Textiles	Theory	4
		0122880	Practical 1	Practical	4
	II	0222801	Introduction to Resource Management	Theory	4
		0222802	Introduction to Extension Education	Theory	4
		0222880	Practical 2	Practical	4
DIPLOMA IN HOME SCIENCE					
II Year	III	0322801	Nutritional Biochemistry and Food Microbiology	Theory	4
		0322802	Human Development II and Laundry Science	Theory	4
		0322880	Practical 3	Practical	4
	IV	0422801	Elementary Clothing Construction and Methods of Extension Education	Theory	4
		0422802	Research Methodology	Theory	4
		0422880	Practical 4	Practical	4
		0422865	Research Project I	Project	3
DEGREE IN HOME SCIENCE					
III Year	V	0522801	Community & Therapeutic Nutrition	Theory	4
		0522802	Family Housing and Interior Designing	Theory	4
		0522803	Advanced Clothing Construction	Theory	4
		0522880	Practical 5	Practical	4
		0522865	Research Project II	Project	4
	VI	0622801	Textile Designing	Theory	4
		0622802	Food Processing and Preservation	Theory	4
		0622803	Entrepreneurship & Advertising	Theory	4
		0622880	Practical 6	Practical	4
		0622865	Research Project III	Project	4

COURSE STRUCTURE – B.Sc.HOME SCIENCE

Year	Sem	Major Paper	Minor	Vocational/Skill	Co-Curricular	Research Project
I	I	Introduction to Food science and Human Physiology **(4 Credits)**	Other Faculty (6Credits)	1 (3Credits)	First Aid and Basic Health (2 Credits)	----------
		Introduction to Human Development I and Textiles **(4 Credits)**				
		Practical 1 **(4 Credits)**				
	II	Introduction to Resource Management **(4 Credits)**		1 (3Credits)	Human Values and Enviornment Studies (2 Credits)	----------
		Introduction to Extension Education **(4 Credits)**				
		Practical 2 **(4 Credits)**				
AFTER SUCCESSFUL COMPLETION OF SEMESTER II (40 CREDITS) , A STUDENT HAS EXIT OPTION WITH CERTIFICATE IN HOME SCIENCE						
II	III	Nutritional Biochemistry and Food Microbiology **(4 Credits)**	Other Faculty (6Credits)	1 (3Credits)	Physical Education and Yoga (2 Credits)	----------
		Human Development II and Laundry Science **(4 Credits)**				
		Practical 3 **(4 Credits)**				
	IV	Elementary Clothing Construction and Methods of Extension Education **(4 Credits)**		----------	Social Responsibility and Community Engagement (2 Credits)	1 (3Credits)
		Research Methodology **(4 Credits)**				
		Practical 4 **(4 Credits)**				
		Research Project 1 **(3Credits)**				
AFTER SUCCESSFUL COMPLETION OF SEMESTER IV (80 CREDITS) , A STUDENT HAS EXIT OPTION WITH DIPLOMA IN HOME SCIENCE						

Year	Sem	Major Paper	Minor	Vocational/Skill	Co-Curricular	Research Project
III	V	Community & Therapeutic Nutrition **(4 Credits)**				
		Family Housing and Interior Designing **(4 Credits)**				**1 (4Credits)**
		Advanced Clothing Construction **(4 Credits)**				
		Practical 5 **(4 Credits)**				
		Research Project 2 **(4 Credits)**				
	VI	Textile Designing **(4 Credits)**				
		Food Processing and Preservation **(4 Credits)**				**1 (4Credits)**
		Entrepreneurship & Advertising **(4 Credits)**				
		Practical 6 **(4 Credits)**				
		Research Project 3 **(4 Credits)**				

AFTER SUCCESSFUL COMPLETION OF SEMESTER VI (120 CREDITS) , A STUDENT IS AWARDED BACHELOR OF SCIENCE DEGREE IN HOME SCIENCE.

Maximum marks in all the papers will be 100, and it will split as External Assessment of 75 marks and Internal Assessment of 25 marks.

Suggested Continuous Internal Evaluation Methods (25 Marks):

A)File work / Seminar/ Assignment: 10 Marks (on any topic of the syllabus for that particular course).

B)Class performance/ Participation: 5 Marks.

C)Tests : 10 marks.

Important Note:

I. It is mandatory that the appointment of examiner should be from any field of home science only.

II. For examination purposes, the university will appoint three examiners. In case of refusal of first examiner , the second examiner will be contacted, and if the second examiner also declines ,the third examiner will be approached.

CERTIFICATE IN HOME SCIENCE (NEP)

Programme/Class: Certificate in Home Science (NEP)	Year: 1	Semester: I
Course Code 0122801	Introduction to Food science and Human Physiology	Credits 4

Course Outcome :

1 ToUnderstand the relationship between food, nutrition and health.
2 ToUnderstand the nutritional contribution of and effect of cooking on different food groups.
3 To Understand ways of reducing nutrient losses during different methods of cooking and methods of enhancement of nutritional quality of foods.
4 ToFamiliarize students with specific terminology related to the human body.
5 To Enable the students to learn the structure and functions of organs.
6 ToPrepare the students to understand the physiology-based course.

No. of Lectures: 60	Max. Marks: 25+75 Min. passing Marks: 33	Major

Section A (Food Science)

Units	Topic	No. of Lectures
I	**Basic Concepts in Food Science:** (a) Basic terms used in study of food and nutrition. (b) Understanding relationship between food, nutrition and health . (c) Functions of food-Physiological, psychological and social.	10
II	**Basic Food Groups : composition, nutritive value and their sources:** a) Cereals. b) Pulses. c) Vegetables and Fruits. d) Milk and milk Products. e)Meat, fish ,Poultry and Eggs. f)Nuts and oils. g)Spices and condiments. h) Sugar and Jaggery.	10
III	**Methods of Cooking and Enhancing the Nutritional Quality of Foods**: a) Dry, moist, frying and microwave cooking. b) Advantages, disadvantages and the effect of various methods of cooking on foods. c) Preventing losses of nutrient during cooking. d) Improving nutritional quality of diets by Supplementation,	10

	Germination, Fermentation, Fortification and Genetic Modification of foods.	
SECTION – B (Human Physiology)		
IV	**Cells & Reproductive System:** a) Cell as a basic unit of the body and function. b) Tissues—types, structure and function. **Reproductive System** a)Structure of sex organs. b)Menstrual cycle. c)Pregnancy ,delivery , lactation and menopause.	**10**
V	a) Major organs of digestive system and their function. b)Anatomy and Function of major organs of respiratory system. c) Anatomy and Functions of organs of excretory system. d) Composition of Blood ,Blood Groups and Circulatory system.	**10**
VI	a)Types of Sensory organs and their functions . b) Types of muscles and their functions c) Skeletal system and bone formation process.	**10**

REFERENCES:

*Rekhi T and Yadav H (2014). Fundamentals of Food and Nutrition.New Delhi: Elite Publishing House Pvt Ltd., Chapter 1

*Srilakshmi B (2014). Food Science, 6th Edition. Delhi: New AgeInternational Ltd., Chapters 2, 3, 5, 6, 7, 8, 10, 11.

*Dolloff P.B. and Resnick M.R.1972. Patterns of life : Human Growth and Development, Charles E Merrill Publishing Co.Ohio.

*Bee H. 1985. The Developing Child, Harper and Row Publishers . New York. Elkind D, 1978, Development of the Child, John Wily and Sons

* Hawkes G.R. and Pease D. 1962. Behaviour and Development from 5-12, Harper International * Ambron 1978. Child Development, Holt Rinchart and Winston

* Berke L.E. 1995. Child Development, Allyn and Bacon

*Hurlock E. B. 1978. Child Development, McGraw Hill Publishing Co.

Programme/Class: Certificate in Home Science (NEP)	Year: 1	Semester: 1
Course code: 0122802	Course Title: Introduction To Human Development and Textiles	Credits 4

Course Outcome:

1.To provide an overview of Infancy and infant development as a first stage in the life span development process

2. To be able to Form a meaningful and practical understanding of infancy& Childhood, with special reference to Indian context.

3. To understand basic terminology and concepts of textiles.

4. To describe physical and chemical properties of natural and synthetic fibers.

5. To understand the process of yarn manufacturing.

6. To understand the impact of finishing on fabrics performance and aesthetics.

Units	MAX.MARKS :25+75 MINIMUM PASSING MARKS :33	MAJOR
SECTION –A (Human Development)		
I	**Meaning , determinants and principles of Human development** a) Meaning and Scope of Human Development, Contribution of allied fields and their importance, Stages of human Development. b) Principles of growth and development . c) Determinants of Development: i) Heredity Vs Environment. ii) Maturation Vs Learning.	8
II	**Prenatal development and Care of the neonate** a) Menstrual Cycle , Fertilization. b) Stages of Prenatal development, factors affecting prenatal development. c) Antenatal Care: i) Signs and Symptoms of Pregnancy. ii) Discomforts of pregnancy. iii) Prenatal diagnostic tests. iv) Calculation of expected Date of delivery . v) Labour and its stages. vi) Types of birth. **Infancy (0-2 yrs)** (a) Developmental tasks and characteristics. i) Physical and motor development . ii) Sensory and perceptual development. iii) Cognitive development . iv) Early language development.	10

III	**Childhood Period :** a) Developmental tasks and characteristics of early childhood period (2-6 yrs) and late childhood period (7-11 years). b) Development during early and late childhood. i) Physical and motor development . ii) Social emotional development. iii) Cognitive development. iv) language development.	**10**
SECTION –B (Textiles)		
IV	**History, Classification of Textile fibers and their general properties.** a) Natural cellulosic fibers- cotton, flax and jute. b) Natural protein fibers – silk and wool. c) Synthetic fibers – Rayon, Acrylic, Nylon and Polyester. **Manufacturing process, properties and uses of common fibers** a) Importance of textiles in day to day life. b) Factors affecting selection of fabric for various end uses.	**12**
V	**Study of Yarns** **Definition of types of Yarns** i) Simple yarns, Single ply, cord, crepe staple, filament, balanced unbalanced, types of twist and effects of twist on fabric performance. ii) Complex yarns: Slub, flock/flack, Bouncle/loop, ratine, loop knot, grandelle chenille, Methods of spinning.	**8**
VI	**Fabric Construction** a) Study on Hand loom – parts and their uses. b) Basic weaves used in fabric construction and Classification of weaves. i) Plain weaves and variations. ii) Twill weaves and variations. iii) Floating weaves. c) Other Methods of fabric construction netting, knotting, felting, braiding and bonding.	**12**

REFERENCES:

Monaster G.J. (1977). Adolescent Development Life Tasks. Mc.GrawHil

*Ambron S.R. 1978. Child Development (IInd Edition)Holt, Renehart and Winston.

*PapaliaD.E.Olds S.W.1975. A Childs World- impact through Adolescence, Mcgraw Hill Co.

*Boeknek G. 1980. Human Development . Brook and Cole Publishing Company

* Perkins V.H.1975. Human Development, Wadword Publishing Company California.

* Manju Patni ' Family Clothing' Star Publication, Agra , 3rd edition 1993.

*Susheela Dantyagi 'Fundamentals of textiles and their care' Orient Longman Limited, New Delhi.

*Manju Patni and PrabhaRastogi, 'Fibre Science and Clothing' Star Publication, Agra

*Alka Agarwal and Manju Patni , 'Fibre Science and Clothing' Star Publication, Agra

*Neerja Yadav, 'Textiles and Clothing' Sahitya Publications, Agra.

*Marjory L.Joseph' Introductory Textile Science' Holt, Rinehart and Winston, NY

*Isabel B. Wingate and June F. Mohler. 'Textile Fabrics and Their Selection.

Programme/Class: Certificate in Home Science (NEP)	Year: I	Semester : I
Course Code 0122880	PRACTICAL I	Credits - 4

Course Outcome:

1. To Enable the students to learn the structure and functions of organs.
2. To Prepare the students to understand the physiology-based course.
3. ToUnderstand the nutritional contribution of and effect of cooking on different food groups.
4. To Understand ways of reducing nutrient losses during different methods of cooking and methods of enhancement of nutritional quality of foods.
5. To understand the various weaves and their application to create fabrics .
6. To identify various fabrics.

List of Practicals Max. Marks : 100

	I Basic food preparation: a) Rice and pulse preparation. b) Vegetable preparation. c)Suji and wheat flour preparation. d) Milk preparation e) Bakery preparation f) Beverages g) Egg, fish and meat preparations h) Standardization of weights and measures of various food items. **II**:a) Prepare Charts and Poster on Human Physiology .(Each student should make minimum two Poster or Chart.) b) Microscopic examination of prepared slides of different human body system as well as tissue of different body organs. **III :a)** Assessment of the anthropometric parameters & immunization Schedule of a child. b) Preparation of Teaching aids for early childhood. c) Preparation of a toy for infants. d)Planning and organization of competitive games for late childhood. **IV:** a)Identification of textile fabrics by visual, burning, microscopic and chemical tests. b) Yarn identification- Single, ply, cord, Novelty yarns and Collection and study of 15 samples of yarns. c) Thread Count and Balance. d) Weaves- Identification , design, interpretation on graph and Collection of different weaves- basic and decorative. f) Fabric analysis of light, medium & heavy weight fabrics for various end uses. g) Collection of five fabric samples made with different techniques of fabric construction.	**120 hours**

Programme/Class: Certificate in Home Science (NEP)	Year: 1	Semester: II
Course code 0222801	CourseTitle INTRODUCTION TO RESOURCE MANAGEMENT	Credits: 4

Course Outcome :

1.To understand resource management and explain the importance of resource management in various contexts.

2.To understand the principles of sustainability in resource management.

3.To apply methods for optimizing resource use and minimizing waste.

4.To evaluate the benefits and challenges of adopting new technologies in resources.

Total No. of Lectures: 60	Max. Marks: 25+75 Min. Passing Marks: 33	Major
Units	**Topic**	**No. ofLectures**
I	**Resource Management:** a).Definition, Philosophy and Concepts of resource Management. b).**The Management process:** planning, organizing, controlling and Evaluation.	10
II	.**Family Life Cycle:** a) The Family life cycle and its stages. b) Qualities and responsibilities of a good home maker. c) Motivation in home management- values, goals and standard.	10
III	**Decision Making:** a) Importance and classification of decisions. b) Decision making process. c) Conflicts during decision-making.	10
IV	**Resources:** a) Classification and characteristics of resources. b) Time Management- Time demand in different stages of the family life cycle.	10
V	**Energy Management:** Energy demands in different stages of family life cycle. **Fatigue :** a)Types of fatigue. b) Measures to overcome fatigue.	10

VI	**Work Simplification**: a) Definition of work simplification and its importance. b) Techniques of work simplification. c) Mundel's classes of change.	10

REFERENCES:

*Goel, S. (Ed.). (2016). Management of Resources for Sustainable Development. NewDelhi: Blackswan Publications.

*Leithead and Lind:Heat stress and heat disorder Home & Interior

* Anna hung Rutt Home management

Programme/Class: Certificate in Home Science (NEP)	Year: 1	Semester: II
Course code 0222802	CourseTitle INTRODUCTION TO EXTENSION EDUCATION	Credits: 4

Course outcomes:

1.To understand extension education and identify the key stake holders and partners involved in extension education.

2.To develop and deliver educational programs and materials tailored to specific community needs.

3.To design, implement, and evaluate extension education programs.

4.To develop critical thinking skills to solve complex problems in extension contexts.

Total No. of Lectures: 60	Max. Marks: 25+75 Min. Passing Marks: 33	Major
Units	**Topic**	**No. of lecture**
I	**Introduction of Extension education & Communication** a). Concept of Education: formal, informal, and Extension Education. b). Objectives of Extension Education. c). Function and Scope of Extension Education. d). Principles of Extension Education. e). Process of extension education. f). Philosophy of extension education. g). Qualities of an Extension worker.	12
II	**Communication:** a). Meaning, Elements & characteristics of Communication b). Commandments of good communication. c). Seven C, s of Communication. d). Objective of communication. e). Self-confidence for effective communication.	12
III	**Communication Media and Information technology** a). Folk Media- meaning, Importance and Types. b). Electronic media- types and advantage . c). Importance, advantage and disadvantage of Radio. d).Telecommunication (meaning and use in communication only)- Television, Telephone, mobiles, video conferencing, E-mail, Fax. e). Information technology and its use in education, factor effecting selection of technology. f).Advantages and disadvantages of mechanization of communication.	12

IV	**Communication for Extension:** a). Formal and informal communication their types, advantages and disadvantages. b). Effective writing- objectives, essentials and media of written communication. c). Art of listening in communication- good listening, principle and guidelines for effective listening. d). Effective speaking- principles, guidelines and styles and media for oral communication.	**12**
V	**Communication of Innovation:** a). Concept of Innovation. b). Characteristics of Innovation . c). Adoption Process . d). Factors affecting the adoption of Innovation . e). Adopters categories.	**12**

REFERENCES:

*Kumar, A. (2016). Dynamics of Human Communication. New Delhi:Orient Black Swan. ISBN: 9788125063254

*Anand, S. & Kumar, A. (2016). Dynamics of Human Communication.New Delhi: Orient Black Swan. ISBN: 9788125063254; Chapter 12, 13, 5

* Barker, L &Gaut, D. (1996) Communication. Pearson Education,7 thedition, USA.; Chapter 8, 9, 11, 12

* Anoop Singh Sandhu, "Extension program Planning"

* O. P. Dhama& O.P. Bhatnagar, "Education & Communication for Development" Oxford IBH Publishing Co. Pvt. Ltd, New Delhi.

* Directorate of Extension Education, "Extension Education in community Development"

* Dr. A. Adivi Reddy, "Extension Education"

* Uham Kumar Singh, "Extension Education" G. L. Ray, "Extension and Management Communication" Naya Prakash.

* S. K. Waghmare, "Teaching Extension Education"

Programme/ClassCerificate in Home Science (NEP)	Year I	Semester II
Course Code 0222880	Course Title Practical 2	Credits: 4

Course Outcome:

1.To understand extension education and identify the key stake holders and partners involved in extension education.
2.To develop and deliver educational materials tailored to specific community needs.
3.To understand time management for different work situations.
4.To understand the principles of sustainability in resource management.
5.To apply methods for optimizing resource use and minimizing waste.

List Of Practicals Max. Marks : 100

	I Preparation of Chart / Graph of: 1.Family life cycle. 2.Qualities of a Home-maker. 3.Responsibilities of a Home-maker. 4.Classification of Resources. 5.Various work curve. 6.Tecniques of Work –simplification. **II. Preparation of audiovisual Aids:** 1. Charts. 2. Posters. 3.Graphs. 4.Leaflet. 5. Pamphlet. 6.Folders. 7.Flannel Graphs. 8.Slides. 9.Flim strips. 10. Models. 11.Puppets	**120 hours**

DIPLOMA IN HOME SCIENCE

Programme/Class Diploma in Home Science (NEP)	Year: II	Semester: III
Course Code 0322801	Course Title Nutritional Biochemistry & Food Microbiology	Credits: 4

Course Outcome:
1.To understand the principles of biochemistry
2.To obtain an insight into the chemistry of major nutrients and physiologically important compounds.
3.To develop capability to apply the knowledge in the field of human nutrition and dietetics.
4. To understand the basic concepts and scope of food microbiology.
5.To classify different types of microorganisms found in food.
6.To identify common pathogens and the diseases they cause.
7.To explain the mechanisms and consequences of food spoilage.

Total no. of Lecture : 60	Max. Marks: 25+75 Min. passing Marks: 33	Major
Units	**Topic**	**No. of Lectures**
SECTION A : NUTRITIONAL BIOCHEMISTRY		
I	Introduction to biochemistry and interrelationship between biochemistry and other biological science. 2. 1.**Carbohydrates:** a)Introduction, classification , structure , general properties of monosaccharide. b)Digestion and absorption of carbohydrates in human body c) Metabolism- Glycolysis and Kreb's Cycle. **2.Lipids:** a)Composition, classification , general properties. b)Analysis of fats and oil acid value, iodine value, saponification value, acetyl number, c)Hydrogenation and rancidity, d)Digestion and absorption of lipids in human body **3. Lipid metabolism:**Elemental knowledge of different sterols eg cholesterol, phytosterol and ergosterol.	14
II	**Proteins:** a) Definition, composition, classification, general properties- solubility, amphoteric nature, colloidal nature of proteins, denaturation of protein b)Classification of amino acids including essential amino acid and non essential amino acids c) Digestion and absorption of proteins d) Protein metabolism – Brief idea of Deamination ,	10

	Transamination, Decarboxylation, Transmethylation.	
III	**A) Vitamins:** a)Definition, classification, absorption, storage, functions and excretion of Vitamin A, D,E,K, Thiamine, Riboflavin, Niacin, Ascorbic Acid. **B)Minerals:** A brief idea of Calcium ,Phosphorus, Iron, Iodine, Sodium, Chlorine, Potassium, their storage, absorption, function and excretion.	**10**
	SECTION B : FOOD MICROBIOLOGY	
IV	Brief history of food microbiology and introduction to important micro organisms in food. a) Nutritional requirements of micro organisms. b)Types of media used, methods of isolation. c)Fundamentals of control of micro organisms in foods:a)Use of high and low temperature. b)Dehydration. c)Freezing. d)Irradiation e)Preservation. f)Sterilization. g)Disinfection.	**10**
V	**Food Spoilage :** Contamination and microorganism in the spoilage of different kinds of food and their preservation : a)Cereals & cereal products. b)Vegetables & fruits. c)Fish & meat products. d)Egg & poultry. e)Milk and milk products. f)Canned food.	**8**
VI	**Public health hazards due to** a) Contaminated foods b) Microbes used in food c) Biotechnology d)Fermented foods.	**8**

REFERENCES :

*Lehninger A L, Nelson DL and Cox M M (2009). Principles of Biochemistry, 6th Ed. CBS Publishers and Distributors.

*Murray R.K. Granner D K, Mayes P A and Rodwell V W (2009). Harper's Biochemistry,28th Ed, lange Medical Book.

*Satyanarayana U and Chakrapani U (2010). Biochemistry. Books and Allied (P) Ltd., Kolkata.

*Sharma S (1993). Practical Biochemistry. (1st Ed) Published by Jaipur : Classic Publishing House.

*Srilakshmi. Food Science. New Age International Publishers, New Delhi.

*Sari Edelstein, 2014, Food Science-An ecological approach, Jones & Bartlett Learning

Programme/ Class: Diploma in Home Science (NEP)	Year: II	Semester: III
Course Code 0322802	Course Title Human Development & Laundry Science& Finishing of Fabrics	Credits: 4

Course Outcome:

1. T understand the stages of adulthood and old age
2. To become aware about different aspects of adulthood and old age
3. To understand the problems and their adjustment during adulthood and old age.
4. To understand principles of laundering.
5. To understand properties of soaps and detergents.
6. To know techniques of blues and stiffing agents.
7. To gain knowledge about stains and their removal properties.

Total no. of Lecture : 60	Max. Marks: 25+75 Min. passing Marks: 33	Major
Units	**Topic**	**No. of Lectures**
SECTION –A	**HUMAN DEVELOPMENT**	
I	**Puberty and Adolescence(10 to 19 years) :** a) Development Tasks and characteristics. b) Physical development : Puberty , growth spurts, primary and secondary sexual characteristics, secular trends. c) Identity : Definition, Identity status, Factors influencing identity development d) Social relationships and heterosexual relationship, Importance. e) Adolescent's Emotions : Meaning, Causes, expression, characteristics of emotional maturity. f) Problems- Drug and Alcohol abuse, STD,HIV AIDS, Teenage pregnancy.	12
II	**Young Adulthood (20 to 35 years):** a) Definition of an adult, its characteristics, Development task of a young adult. (b) Responsibilities and adjustment- educational, occupational, marital and parenthood Choosing a Career-Stages, factors affecting selection for career. **Middle Adulthood (35 to 55 years):** a) Characteristics , Development tasks, physical changes. b) Reproductive ChangesMenopauses, Climetric syndrome and associated health risks. c) Stress in middle age infamily, workplace, occupation and coping strategies. d) Preparation for retirement – physical,social,financial	12

	and occupational.	
III	**Late adulthood (55-65 years) and Old Age (65 years onwards)**: a) Characteristics, developmental tasks, physiological changes and health problems, cognitive, memory and personality changes. b) Retirement- effect of retirement (emotional, economic, self and family), changes in relationship with family. c) Issues : Old age homes, elderly abuse, loneliness and post parental status. d) National Policies and legal provisions for elderly.	**12**
SECTION –B	**LAUNDRY SCIENCE & FINISHING OF FABRICS**	
IV	**Introduction**: a) Principles of laundering and their application on laundry equipment. b) Water- Hard and soft water, techniques of removal of hardness caused by hard water. **Soaps and Detergents**: Kind and composition, manufacturing, functioning and properties of laundry Soaps and Detergents.	**10**
V	**Blues:** Types, composition, uses and action of blues. **Stiffening agents:** composition, sources, preparation and application of various stiffening agents. **Bleaches**:Classification and their uses. **Stains:** -Definition, classification, identification, general precautions observed during stain removal, home and lab method for removing stains (blood, wax, chewing gum, chocolate, coffee, egg, fruit grass, ice- cream, medicine, ink pen, ball pen, ink, iron, rust, mildew, lipstick, oil, preparation, paints).	**10**
VI	**Dry cleaning:** Definition, principles, dry cleaning agents and their uses, comparison with wet cleaning, advantages and disadvantages.	**4**

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* Ambron S.R. 1978. Child Development (IInd Edition)Holt, Renehart and Winston.

*PapaliaD.E.Olds S.W.1975. A Childs World- impact through Adolescence, Mcgraw Hill Co. *Boeknek G. 1980. Human Development . Brook and Cole Publishing Company

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*Manju Patni ' Family Clothing' Star Publication, Agra , 3rd edition 1993.

*Susheela Dantyagi 'Fundamentals of textiles and their care' Orient Longman Limited, New Delhi.

*Manju Patni and PrabhaRastogi, 'Fibre Science and Clothing' Star Publication, Agra

* Alka Agarwal and Manju Patni , 'Fibre Science and Clothing' Star Publication, Agra

* Neerja Yadav, 'Textiles and Clothing' Sahitya Publications, Agra.

*Marjory L.Joseph' Introductory Textile Science' Holt, Rinehart and Winston, NY

* Isabel B. Wingate and June F. Mohler. 'Textile Fabrics and Their Selection.

Programme/ Class: Diploma in Home Science (NEP)	Year II	Semester III
Course Code 0322880	Course Title Practical 3	Credits 4

Course Outcome:

1.To understand the stages of adulthood and old age
2. To become aware about different aspects of adulthood and old age
3. To understand the problems and their adjustment during adulthood and old age.
4.To understand principles of laundering.
5.To understand properties of soaps and detergents.
6.To know techniques of blues and stiffing agents.
7.To gain knowledge about stains and their removal properties.

List of Practicals	Max. Marks: 100
I.Identification of Laundry equipments **II.**Laundry of different fabrics. **III.** Making Soap and Detergent. **IV.**.Application of blues on fabric. **V.** Different Stain removal from various fabric. Like: blood, wax, chewing gum, chocolate, coffee, egg, fruit, grass, ice-cream, ink, rust, mildew, lipstick, oil and paints etc. **VI.**Drycleaning of delicate fabrics. **VII.** Bleaching of fabrics **VIII.**Starching of fabrics **IX.**Ironing of fabrics.	**120 hours**

Programme/ Class: Diploma in Home Science (NEP)	Year II	Semester IV
Course Code O422801	Course Title Elementary Clothing Construction & Methods of Extension	Credits 4

Course Outcome:

1.To understand the basic techniques in clothing construction.
2.To choose appropriate fabrics for specific garments based on properties and end use.
3.To integrate creativity in designing and constructing unique garments.
4.To explore sustainable practices in fabrics selection and garment production.
5.To understand extension education principles.
6.To understand and identify educational objectives of extension education.
7.To formulate clear and measurable educational objectives.
8.To develop various educational materials including print, audio-visual aids and digital resources.

Total no. of Lectures:60	Max. Marks: 25+75 Min. passing Marks: 33	Major
Units	**Topic**	**No.of Lectures**
SECTION A	**INTRODUCTION TO CLOTHING CONSTRUCTION**	
I	**1.Sewing machine and its parts** a)Common defects and how to remedy them. b)Selection of clothing material. c) Factors influencing selection of fabrics budget, age, season, occupation, figure , fashion etc. **2.Selection of linen:** towel, bedsheet , table covers and curtains.	12
II	**Principles of clothing Construction** a)Principles of drafting and making paper pattern . b) Taking body measurement for different types of garments. c)Preparation of fabric for garment making . d) Layout of patterns , cutting and stitching.	8
III	**Basic seams and seams finishes** a) Fullness – gathers , pleats ,darts and tucks etc. b) Placket opening and its variations . c)Fasteners and pockets d) Finishing of neck lines – various techniques including collars.	10
SECTION B	**METHODS OF EXTENSION EDUCATION**	
IV	**Rural Sociology** a)Meaning & characteristics of rural sociology. b) Interrelationship between rural sociology and extension . c)Rural and Urban community differences .	10

	Social stratification a)Function, Dysfunction, Basis for stratification and types b)Value and Value System: Characteristics, Types, classification and functions.	
V	**Teaching and Learning Process** a) Concept of Learning, Elements & Principles involved in Learning. b) Learning experiences , Types of learning. c) Adult learning- meaning, assumption, characteristics and conditions . **Concept, Definition, Factor Effecting Teaching** Steps in Extension Teaching foraffective Training. a) Training- definition, Concept of co training, and features. b) Difference between education and training. c)Importance and features of training. d) Process of training. e) Types and approach to training. f) Elements of good training.	10
VI	**Teaching Methods** a) Selection of Appropriate teaching Method. b)Importance and scope of Teaching Methods. c) Classification of teaching Methods in Home Science Extension. d) Advantage and Limitations of thesemethods. e) Factors affecting the Use and Selection of Teaching method f) Relative Effectiveness of teaching methods.	10

REFERENCES:

*Manju Patni ' Family Clothing' Star Publication, Agra , 3rd edition 1993.

*Susheela Dantyagi 'Fundamentals of textiles and their care' Orient Longman Limited, New Delhi.

*Manju Patni and PrabhaRastogi, 'Fibre Science and Clothing' Star Publication, Agra

* Alka Agarwal and Manju Patni , 'Fibre Science and Clothing' Star Publication, Agra

* Neerja Yadav, 'Textiles and Clothing' Sahitya Publications, Agra.

*Marjory L.Joseph' Introductory Textile Science' Holt, Rinehart and Winston, NY

* Isabel B. Wingate and June F. Mohler. 'Textile Fabrics and Their Selection.

*Anoop Singh Sandhu, "Extension program planning"

* O.P. Dhama& O.P. Bhatnagar, "Education & Communication for Development" Oxford IBH Publishing Co. Pvt. Ltd, New Delhi.

*Directorate of Extension Education, "Extension Education in community Development"

* Dr. A. Adivi Reddy, "Extension Education"

* Udham Kumar Singh, "Extension Education"

* G. L. Ray, "Extension and Management Communication" Naya Prakash.

*S. K. Waghmare, "Teaching Extension Education"

Programme/Class Diploma in Home cience (NEP)	Year II	Semester IV
Course Code 0422802	Course Title Research Methodology	Credits 4

Course Outcome:

1. To compare and contrast quantitative and qualitative research approaches.
2. To identify appropriate sampling methods, measurement scales and tools of data collection and appropriate uses of each.
3. To demonstrate knowledge of the key steps of a research process in both experimental and observational research.

Total No. of Lectures: 60	Max. Marks: 25+75 Min. Passing Marks: 33	Major
Units	**Topic**	**No of Lectures**
I	**Research- Meaning, purpose and approaches** a) Exploration, Description, Explanation. b) Scientific method and research . c) Quantitative and Qualitative approaches. d) Research Designs -Experimental and Observational.	8
II	**Conceptualization and Measurement** a) Variables, concepts and measurement. b) Levels of measurement. c) Units of analysis.	7
III	**Sampling & Tools** a) Role of sampling in research. b) Types of sampling.	15
IV	**Research Tools and Techniques** a) Validity and reliability. b) Data Gathering Instruments – Inquiry form, interview, observation, Sociometric techniques & Projective techniques c) Scales & scaling techniques.	15
V	**The Research Process** a) Defining the problem, research questions, objectives, hypotheses. b) Review of related literature and originality in writing. c) Planning the research. d) References writing.	15

REFERENCES:

*Kumar, R. (2005) Research Methodology: A Step by Step Guide for Beginners. Sage Publications, New Delhi.

*Ramamurthy, G.C., (2011), Research Methodology, Dreamtech Press India Private Limited, New Delhi.

Programme/Class Diploma in Home Science (NEP)	Year: 2	Semester: IV
Course Code 0422880	Course Title Practical 4	Credits 4

Course Outcome

1. To understand the basic techniques in clothing construction.
2. To choose appropriate fabrics for specific garments based on properties and end use.
3. To integrate creativity in designing and constructing unique garments.
4. To explore sustainable practices in fabrics selection and garment production.
5. To understand extension education and identify the key stake holders and partners involved in extension education.
6. To develop and deliver educational materials tailored to specific community needs.

List of Practicals	Max. Marks: 100
1. Sewing techniques: a) Basic seams and seams finishes, fullness: gathers, pleats, darts, tucks etc. b)Placket opening and its variations. c) Fasteners d) Finishing of necklines: various techniques including collars. **II. Garment construction** a) Drafting b)Cutting c) Stitching of simple garments like bib, baby's panty, sun-suit/rompers ,A-line dress, simple frock with yoke. **III.Developing skills in puppet as folk media**a) Preparation of puppets b) Prepare script for puppet play on any social issue c)Present puppet shows or Street Play. **IV. Preparation of Questionnaire.**	**120 hours**

Programme/Class Diploma in Home science (NEP)	Year II	Semester IV
Course Code 0422865	Course Title Research Project I	Credits 3

Course Outcomes:

1. To learn to communicate with community around.
2. To become sensitive to the needs of the community of her residing area.
3. To be able to try some intervention plan for the problems faced in that community.
4. To be able to improve her communicative and presentative abilities.

Total No. of Lectures: 45	Max. Marks: 100 Min. Passing Marks: 33	Project
Units	Topic	No of Lectures
I	**The candidate will select any one area of the following :** a) Any health Services b) Market c) Nursery school d) Fitness center e) School f) Mentally challenged institution g) Bank h) Village Panchayat i)Anganwadi	15
II	An intervention plan would be developed which would be based on problem identified in any area. Student has to collect the related information of her selected field.	10
III	The collected data has to be tabulated and analysed.	10
IV	A detailed report is to be prepared and submmited for evaluation.	10

REFERENCES:

*Kumar, R. (2005) Research Methodology: A Step by Step Guide for Beginners. Sage Publications, New Delhi.

*Ramamurthy, G.C., (2011), Research Methodology, Dreamtech Press India Private Limited, New Delhi.

DEGREE IN HOME SCIENCE

Programme/Class Degree in Home Science (NEP)	Year III	Semester V
Course Code 0522801	Course Title COMMUNITY&THERAPEUTIC NUTRITION	Credits 4

Course Outcome:

1. To understand the basic concepts of meal planning.
2. To understand nutrition during pregnancy & lactation.
3. To promote strategies and maintain healthy eating habits.
4. To analyze the nutrition for adults and elderly.
5. To understand principles of Diet Therapy .
6. To be able to modify the normal diet for therapeutic purposes.
7. To understand dietary management in some common disorders /diseases.

Total no. of Lectures:60	Max. Marks: 25+75 Min. Passing Marks: 33	Major
Units	**Topic**	**No of Lectures**
I	**Basic concepts meal planning** a) Food groups and concept of balanced diet. b) Food exchange list & Concept of Dietary Reference Intakes c) Factors effecting meal planning and food related behaviour. d) Dietary guidelines& RDA for Indians and food pyramid. **Nutrition during pregnancy & lactation** Physiological changes, nutritional concerns and healthy food choices.	10
II	**Nutrition during Infancy and childhood** Growth and development, growth reference/ standards, RDA, nutritional guidelines, nutritional concerns and healthy food choices. a)Infants Planning for safe and nutritious complementary and indigenous foods: low and High income groups. b) Preschool children. c) School children . d) Adolescents.	10
III	**Nutrition for adults and elderly** a) Adult nutrition- Planning for diets for healthy living for men and women of LIG, MIG and HIG. b) Geriatric nutrition - Ageing and nutritional needs, recommended dietary allowances, special considerations in	8

	planning meals for the geriatric group, special care of old people.	
IV	**Concept and scope of community nutrition** a) Understanding the concept of public nutrition. b) Assessment of nutritional status: methods and application.**Direct methods:** a)Anthropometry. b)Biochemical and clinical examination. **Indirect methods :** a)Dietary surveys. b)Vital statistics. **Common nutritional deficiencies** Etiology, prevalence, clinical features, prevention and management of nutritional deficiencies . a)PEM . b) Micronutrient deficiencies such as Vitamin A deficiency, Nutritional Anemias, Iodine Deficiency Disorders, Fluorosis.	12
V	**Nutrition Education & Interventions** a) Objectives, principles and scope of nutrition and health education and promotion. b)Behaviour change communication - concept, objectives and approaches. **National Nutrition Policy** a) Objectives, target groups and intervention strategies of ICDS &Mid Day Meal Programme (MDMP). b) National programmes for prevention of Anaemia, Vitamin A deficiency, Iodine Deficiency Disorders. c) Sustainable Development Goals-Introduction, and relevance to nutritional problems in India.	10
VI	**Therapeutic Nutrition** a)Diet Therapy (modifications of the normal diet). b)Basic concepts of diet therapy . c)Stomach disorders- Gastritis and Ulcers. d)Small and Large Intestines disordersDiarrhoea, Constipation, Lactose intolerance, Steatorrhea and Celiac disease. e)Overweight and Obesity . f) Underweight. g)Cardio-vascular Disorders Hypertension , Hyperlipidemia, Atherosclerosis. h) Introduction to Myocardial Infarction and Congestive Heart Failure. i) Diabetic Mellitus- Type 1 and Type 2.	10

REFERENCES:

* Khanna K, Gupta S, Seth R, Passi SJ, Mahna R, Puri S (2013).

*Textbook of Nutrition and Dietetics. Phoenix Publishing House Pvt. Ltd.

* Wardlaw GM, Hampi JS, DiSilvestro RA (2004). Perspectives in Nutrition, 6th edition. McGraw Hill.

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*Bamji MS, Krishnaswamy K and Brahmam GNV (Eds) (2009). Textbook of Human Nutrition, 3ld edition. Oxford and IBH Publishing Co. Pvt. Ltd. New Delhi.

* Park K (2009). Park's Textbook of Prevention and Social Medicine, 20th Edition. M/s BanarasidasBhanot Publishers, Jabalpur, India.

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Programme/Class: Degree in Home Science (NEP)	Year III	Semester V
Course Code 0522802	Course Title FAMILY HOUSING & INTERIOR DESIGNING	Credits 4

Course Outcome:

1. To understand various structural components of a building.
2. To critically evaluate the different types of plans on the basis of principles of planning.
3. To gain skill in preparing house plans.
4. To identify different types of building materials and their characteristics.
5. To comprehend building byelaws and their applications in designing residential units.
6. To understand Networking with professionals in the field of construction industry and design.
7. To appreciate the importance of green building in context of sustainability.
8. To understand elements and principles of arts and designs.
9. To develop an understanding to the application of art principles in design.
10. To develop skill in creating designs and making art objects.

Total No. of Lectures: 60	Max. Marks: 25+75 Min. Passing Marks: 33	Major
Units	**Topic**	**No of Lectures**
I	**1.Structural components of a building.** a)Critically evaluate the different types of plans on the basis of principles of planning. b) Identify different types of building materials and their characteristics. **2. Housing Legislation and Schemes** a) Building Codes. b) Byelaws . c) NBO (National building organization) . d) Government housing schemes.	10
II	**Innovations and new materials** a) Conventional/green building materials, concept of prefabrication and modular construction. b) Foundation: different types of foundations. c) Damp-proofing and water-proofing methods. d) Types of Flooring. e) Types of Roofs. f) Doors and Windows- types, purpose of lintels and arches. g) Types of Staircase. h) Types of Partitions and Panelling. i) Types of plans : Site plan, Floor plan, Cross section plan, Elevation and Perspective plan.	12
	Interior Environment and Services:	

III	a) Heating Ventilation and Air Conditioning (HVAC). b) Lighting: types of lighting systems, energy efficient lighting systems, user specific lighting for specific areas. c) Water and Plumbing systems: water supply system, waste water disposal &water harvesting. d) Insulation: sound and thermal : materials used and types of insulation . e) Safety systems: fire protection : materials and systems used . f) Security systems and automated building systems. .	12
IV	**Interior design** a) Meaning, factor affecting interior design . b). Interior design : Traditional and modern overview c). Design : Objectives, Types , Elements and Principles of design. **Colour Theory:** a) Colour System- Prang colour system and Munsellcolour system. b) Dimensions of colours : Hue, Value and Chroma. c) Colour Wheel: Primary, Binary, Intermediate, Tertiary and quarternarycolour. d) Warm and Cool colour and their effect. d) Colour Schemes: Similar and contrasting colour schemes, planning of colour schemes for different areas in the house.	10
V	**I Furnishings:** a) Classification of furnishings: Curtain, Draperies, Upholstery, Carpet . b) Factors influencing the selection of furnishings for the home-family needs and preference, availability, climatic condition, income, home maker taste etc.	8
VI	**Window treatment** **Light** : natural and artificial light, lighting in various rooms and for different activity centers . **Flower arrangement**. Types of Flower arrangement using elements and principles of art and design.	8

REFERENCES:

*Goel, S., Seetharaman, P. &Kakkar, A. (2015). Interior space designing: A practical manual. New Delhi: Elite Publishing HousePvt. Ltd. (2nd Ed).

*Kumar, Sushil, 2010, Building Construction, Standard publisher.Rao, M.P. (2016). Interior Design: Principles and Practice.

*Art in everyday-Goldstein and Goldstein

* Home furnishing- A.H.Rull•GrahPrabandh- Sharma and Verma

* Interior Architecture – J.Rosemary Riggs

* Colours in your home- Tersa Eve Legh

* Colour Forecasting- Tracy Dianne

Programme/Class: Degree in Home Science (NEP)	Year III	Semester V
Course Code 0522803	Course Title ADVANCED CLOTHING CONSTRUCTION	Credits 4

Course Outcome:

1. To understand the drafting and pattern making techniques.
2. To have knowledge about principles of good design.
3. To understand the importance of clothing.
4. To analyze fashion cycle and trends.

Total no. of Lectures:60	Max. Marks: 25+75 Min. Passing Marks: 33	Major
Units	Topic	No of Lectures
I	**Clothing and its importance** a) Biological, psychological and sociological aspects of clothing. b) Influence of need and environment on clothing behavior.	15
II	**Drafting for adult garments** a)Making paper patterns for different garments. b) Placing and cutting patterns in relation to fabric c) Principles of good design.	15
III	Renovation & removal of defects in garments.	8
IV	Fitting Problems & their remedies.	7
V	**Fashion**: a) Fashion Cycle. b)Role of Fashion Designers. c)Current Fashion trends.	15

REFERENCES:

*Manju Patni ' Family Clothing' Star Publication, Agra , 3rd edition 1993.

*Susheela Dantyagi 'Fundamentals of textiles and their care' Orient Longman Limited, New Delhi.

*Manju Patni and PrabhaRastogi, 'Fibre Science and Clothing' Star Publication, Agra

* Alka Agarwal and Manju Patni , 'Fibre Science and Clothing' Star Publication, Agra

* Neerja Yadav, 'Textiles and Clothing' Sahitya Publications, Agra.

*Marjory L.Joseph' Introductory Textile Science' Holt, Rinehart and Winston, NY

* Isabel B. Wingate and June F. Mohler. 'Textile Fabrics and Their Selection.

Programme/Class: Degree in Home Science (NEP)	Year: 2	Semester: V
Course Code 0522880	Course Title Practical 5	Credits 4

Course Outcome:

1. To understand the basic techniques in clothing construction.
2. To understand principles of Diet Therapy.
3. To be able to plan diet for various purposes.
4. To gain skill in preparing house plans.

List of Practicals Max. Marks: 100

	I. Planning , calculation, preparation, service and evaluation of diets for the patients suffering from the following diseases/disorders a) Therapeutic Diets : i) Normal diet with a 3-day cycle menu. ii) Soft Diet. iii) Liquid diets- Clear and full fluid. b) Diets in fevers: acute and chronic c) Diets in GI Tract disorders; i) Diarrhea. ii) Constipation. d) Diet in Infective Hepatitis. **II.Construction of following clothing:** i. Children: a) Pleated A- line frock. b) Yoked frock with sleeves. c) Night suit (Bushirt&Pyjama). ii. Women: a) Plain blouse. b) Anarkali kurta. **III, Making different floor plans for various Income levels.** **IV. Techniques of Floor Decoration:** a) Rangoli . b) Alpna. **V. Making of colour wheel &colour schemes.** **VI. Flower arrangements.**	**120 hours**

Programme/Class Diploma in Home science (NEP)	Year II	Semester V
Course Code 0522865	Course Title Research Project II	Credits 4

Course Outcomes:

1. To learn to communicate with community around.
2. To become sensitive to the needs of the community of her residing area.
3. To be able to try some intervention plan for the problems faced in that community.
4. To be able to improve her communicative and presentative abilities.

Total No. of Lectures: 45	Max. Marks: 100 Min. Passing Marks: 33	Project
Units	**Topic**	**No of Lectures**
I	**The candidate will select any one area of the following :** a) Any health Services b) Market c) Nursery school d) Fitness center e) School f) Mentally challenged institution g) Bank h) Village Panchayat i) Anganwadi	15
II	An intervention plan would be developed which would be based on problem identified in any area. Student has to collect the the related information of her selected field.	15
III	The collected data has to be tabulated and analysed.	15
IV	A detailed report is to be prepared and submitted for evaluation.	15

REFERENCES:

*Kumar, R. (2005) Research Methodology: A Step by Step Guide for Beginners. Sage Publications, New Delhi.

*Ramamurthy, G.C., (2011), Research Methodology, Dreamtech Press India Private Limited, New Delhi.

Programme/Class: Degree in Home Science (NEP)	Year III	Semester VI
Course Code 0622801	Course Title TEXTILE DESIGNING	Credits 4

Course Outcome:

1. To understand the elements and principles of design.
2. To gain knowledge about dyes.
3. To know the methods of printing and their application.
4. To gain knowledge about traditional textiles of India.

Total no. of Lectures:60	Max. Marks: 25+75 Min. Passing Marks: 33	Major
Units	Topic	No of Lectures
I	**Textile Designing:** a)History of textile design. b). Classification of textile design. c) Elements and principles of design in relation towoven and printed textiles. d) Methods of getting design of textile and their comparison. e) Preparation of fabric before dyeing and printing. f) Industrial level processing(singeing, desizing, scouring, bleaching, kier boiling, mercerizing). g)Cottage level processing (desizing, bleaching, carbonizing).	20
II	**Dyes** a)Classification of dyes. b) Mode of action and application on yarn and fabric. c) Styles of dyeing :(direct, resist, discharge).	10
III	**Printing** a) Methods of printing. b) Hand printing : block, stencil, screen, spray. c) Machine printing.	10
IV	**Traditional Textiles of India** a) Chanderi of Madhya-Pradesh. b)Brocade of Uttar Pradesh (Banaras) and Andhra-Pradesh (Hyderabad) . c)Patola of Gujrat, Orissa and Andhra Pradesh. d)Chambarumal of Himachal Pradesh, e)Balucheri of Bengal. f)Muslin of Dacca.	10

	e)Kosa silk of Chattisgarh.	
V	**Traditional Embroideries of India:** a) Kashmiri b) Phulkari c) Chikankari d) Kantha e) Gujrati f)Kasuti	**10**

REFERENCES:

*Manju Patni ' Family Clothing' Star Publication, Agra , 3rd edition 1993.

*Susheela Dantyagi 'Fundamentals of textiles and their care' Orient Longman Limited, New Delhi.

*Manju Patni and PrabhaRastogi, 'Fibre Science and Clothing' Star Publication, Agra

* Alka Agarwal and Manju Patni , 'Fibre Science and Clothing' Star Publication, Agra

* Neerja Yadav, 'Textiles and Clothing' Sahitya Publications, Agra.

*Marjory L.Joseph' Introductory Textile Science' Holt, Rinehart and Winston, NY

* Isabel B. Wingate and June F. Mohler. 'Textile Fabrics and Their Selection.

Programme/Class: Degree in Home Science (NEP)	Year III	Semester VI
Course Code 0622802	Course Title **FOOD PROCESSING & PRESERVATION**	Credits 4

Course Outcome:

1.To enable students to understand the basic chemistry, science of food and techniques involved in food processing.

2. To impart knowledge of sensory evaluation of food.

3.To understand the role of microorganisms in food processing, preservation and spoilage.

I	**Food processing &its techniques** : a)Non-thermal techniques - refrigeration, freezing, additives, filtration, osmosis, irradiation. b) Thermal processing techniques: Blanching, dehydration, canning, pasteurization, concentration.	10
II	**Food spoilage:** a) Causes of food spoilage b) Classification of food on basis of their stability : i. Perishable food ii. Non Perishable food iii. Semi Perishable food c) Role of microorganisms in spoilage and preservation of food. i.Important food spoilage micro-organisms (psychotrophic, thermophilic, osmophilic microbes). ii. spoilage in specific food groups (raw meat, fruits & vegetables, milk and milk products). d) Role of microorganisms in food fermentation.	15
III	**Food Fermentation and its types:** a) Lactic Acid Fermentation. b) Alcohol Fermentation. c) Acetic Acid Fermentation. d) Alkali Fermentation.	10
IV	**Food laws and standards:** a) Definition. b) Reasons for food laws existence. c) Indian standards. d) Compulsory standards. e) Prevention of Food Adultration Act,1954. f) Fruit Product Order 1955.	15

	g) Meat products Control Order 1973. h) Milk and Milk Products Order 1992. i) Codex Alimentarius and Standards by WHO Oct 2016.	
V	**Sensory science :** a) Physiological basis of sensory evaluation. b) Subjective and objective methods of sensory evaluation.	**10**

REFERENCES:

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*Mathur P. (2018). Food Safety and Quality Control. Orient BlackSwan Pvt. Ltd., Hyderabad.

*Suri S and Malhotra A (2014). Food Science, Nutrition and Safety. Delhi: Pearson India Ltd.,New Delhi. *Potter NN and Hotchkiss H J (1996). Food Science, Fifth Edition.CBS Publication, New Delhi.

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Programme/Class: Degree in Home Science (NEP)	Year III	Semester VI
Course Code 0622803	Course Title ENTREPRENEURSHIP & ADVERTISING	Credits 4

Course Outcome:

1. To identify business opportunities
2. To develop effective marketing strategies.
3. To manage entrepreneurial ventures.
4. To gain comprehensive understanding of advertising concept.
5. To be able to analyze and select appropriate media platform for advertising campaigns.
6. To be able to understand the consumer behavior.
7. To understand the scope and relationship between PR, Marketing, Publicity, Advertising and Corporate Communications.

Total no. of Lectures:60	Max. Marks: 25+75 Min. Passing Marks: 33	Major
Units	**Topic**	**No of Lectures**
I	**ENTREPRENEURSHIP & ADVERTISING** a) Concept of Entrepreneurship. b)Theories of Entrepreneurship. c) Classification and types of Entrepreneurship. Entrepreneurial traits and competencies. d) Entrepreneurial orientation. e)Developing Entrepreneurship through training.	15
II	**Home maker as an Entrepreneur advantages and additional responsibilities:** a) Areas of entrepreneurship for a Home scientist, Day care Centre's, crèche, child guidance Centre's, nursery school, resources Centre's, Nutritional advisor, preservationunits, mobile food vans and hot lunch vans Designing and preparing children's garments, boutique. b)Arranging for finances Banks and Institutions. c) Determinants of pricing, common channels of distribution and its selection. d)Nature of selling.	12
III	**Entrepreneurship and Economic Development.**	8
	Definition and types of Advertising: a)Appeals in Advertising. b) History of Advertising . c) Advertising Theories and Models: AIDA model,	

IV	DAGMAR Model, Maslow's Hierarchy Model, communication theories applied to advertising. d) Ethical and legal aspects in advertising. e) Advertising agencies, their organizational structure and functions . f)Apex bodies in advertising. g) Role of Advertising in Marketing. h) Media Planning.	15
V	**Communication Research for advertising**: a)Approaches in advertising research. b) Campaign assessment research. c) Tools and techniques in advertising research and analysis.	10

REFERENCES:

*Bhatia, K.B.(1993). Elements of Electrical Gadgets.New Delhi: Arya Book Depot. Chapter 8 *Peet L.J. (1970). Household Equipment (6th ed) NewYork: John Wiley & Sons. Chapter 7,8,9. 13, 15,17,18,19

* Sharma S.P. (2003) Basic Radio and Television(2nded) .New Delhi: Tata McGraw Hill. Chapter 23, 24

*Sundar, P. 2013. Business and Community: The Story of CorporateSocial Responsibility in India, New Delhi, Sage Publications .Chapter -3-10,pg 23-320

Programme/Class: Degree in Home Science (NEP)	Year III	Semester VI
Course Code 0622880	Course Title PRACTICAL 6	Credits 4

Course Outcome:

1. To understand the elements and principles of design.
2. To gain knowledge about dyes.
3. To know the methods of printing and their application.
4. To gain knowledge about traditional textiles of India.
5. To enable students to understand techniques involved in food processing.
6. To impart knowledge of sensory evaluation of food.
7. To understand the role of microorganisms in food processing, preservation and spoilage.
8. To develop effective marketing strategies.
9. Gain insight into advertisements in different media.
10. Learn how to develop print and video advertisements.

Total no. of Lectures:60	Max. Marks: 100 Min. Passing Marks: 33	Major
List of Practicals		
	I.Preparation of samples of all traditional embroideries: a)Kashmiri. b)Phulkari. c)Chikankari. d)Kantha. e)Gujrati. f)Kasuti. **II. Preparation of samples using various dyeing techniques:** a)Tie & dye. b)Batik. **III. Methods of printing:** a)Block printing. b)Stencil printing. c)Screen printing. d)Spray printing. **IV. Identification of bacteria, yeast and mould from prepared slides.** **V. Preservation of food using non thermal techniques** a) Freezing (vegetables). b) Using additives. (squash,juice , Pickles etc). **VI. Preservation of food using thermal techniques:** a) Dehydration/Drying (chips, paparsetc). b) Concentration (Jam, jellies,murrabas,&marmladetc) . **VII. Sensory evaluation of given food samples using different sensory evaluation method:** **VIII. Analyzing advertisements in different media.**	**120 hours**

	IX. Developing print and video advertisements. **X. Preparing an article (utility /decorative).**	

Programme/Class Diploma in Home science (NEP)	**Year II**	**Semester IV**
Course Code 0622865	**Course Title** Research Project III	**Credits** 4

Course Outcomes:

1. To learn to communicate with community around.
2. To become sensitive to the needs of the community of her residing area.
3. To be able to try some intervention plan for the problems faced in that community.
4. To be able to improve her communicative and presentative abilities.

Total No. of Lectures: 45	**Max. Marks: 100** **Min. Passing Marks: 33**	**Project**
Units	**Topic**	**No of Lectures**
I	**The candidate will select any one area of the following :** a) Any health Services b) Market c) Nursery school d) Fitness center e) School f) Mentally challenged institution g) Bank h) Village Panchayat i) Anganwadi j) Dyeing and printing unit/textile unit/food processing unit k) youth center/NGO/crèche.	**15**
II	An intervention plan would be developed which would be based on problem identified in any area. Student has to collect the the related information of her selected field.	**15**
III	The collected data has to be tabulated and analysed.	**15**
IV	A detailed report is to be prepared and submitted for evaluation.	**15**

REFERENCES:

*Kumar, R. (2005) Research Methodology: A Step by Step Guide for Beginners. Sage Publications, New Delhi.

*Ramamurthy, G.C., (2011), Research Methodology, Dreamtech Press India Private Limited, New Delhi.

*Vinay k.Tyagi and Chetna ,Research Methodology, Star publication, Agra.