

**INSTITUTE OF HOME SCIENCE
BUNDELKHAND UNIVERSITY, JHANSI**

**B. Sc. HOME SCIENCE
ORDINANCE**

- A. There shall be B.Sc. Home Science course administered by the Institute of Home Science.
- B. The courses shall be run on regular basis.
- C. Subject to overall control of the Academic Council, the B.Sc. Home Science course in the Institute will be administered by a course committee consisting of HOD (Chairman) and all the members of the department.

This committee shall

- (a) Invite, scrutinize applications and make admissions to the B.Sc. course.
- (b) Design courses and prepare syllabus for the same.
- (c) Organize lectures, Seminars.
- (d) Arrange and conduct theory and practical examination, including seminars, tests. Viva-voice etc.

1. Courses offered by the Institute of Home Science

B.Sc. Home Science

2. Eligibility for admission

- (a) The minimum qualification for admission to B.Sc Home Science shall be -

B.Sc. Home Science- 10+2 Science/Arts

- (b) Those appearing for the final year of the qualifying examination shall also be eligible to apply, provided that they submit proof of having passed the final year examination, with minimum requirements, at the time of admission/personal interview, if qualified and called for.

3. Procedure for admission

Admission to eligible candidates will be strictly on merit, displayed decided by appropriate authorities of the University.

4. Normal Intake

The maximum intake for of BSc Home Science shall be thirty (60). However the University may modify the normal intake as per needs. Statutory reservation, as applicable, shall be applicable as per University/ State Government rules/norms.

B.Sc. Home Science- 60

5. Medium of Instruction

Medium of instruction and examination shall be English and Hindi both.

6. Method of teaching

Method of teaching in the academic programme will consist of class lectures by the regular faculty of the department, faculty members from other departments of the University and visiting/guest faculty from other academic Institutions. Seminars, training in other Institutions, Project works shall be essential component of the curriculum. Audio-visual teaching methods, Educational tours to various Institutions shall be conducted.

7. Attendance.

Minimum attendance required to be eligible to appear in the examination for each paper shall be 75 % of all class lectures (Both Theory and Practical).

In case a student is short of attendance due to illness, participation in sports, extra curricular activities etc., the following rules shall apply-

- (a) Shortage of up to 10% attendance shall be condoned by the H.O.D on the specific recommendation of the class teacher.
- (b) A shortage of up to 25 % attendance can be condoned by the V.C. on the specific recommendations of the H.O.D.
- (c) Students who are unable to obtain the minimum attendance after considering all the above clauses will have to reregister for that particular paper in which they are short of the minimum required attendance as and when the paper is offered by the department.

8. Duration of the course.

The duration of the course for B.Sc. Home Science shall be three (3) academic years

9. (1) Examination.

B.Sc Home Science programme shall have the following scheme of examination.

Theory Examinations.

(a) Sessionals

The subject teacher at his/her discretion shall conduct sessional examinations. The examination shall preferably be conducted when at least half of the syllabus is covered by the teacher. The questions can be objective/ short answer type and will be set by the concerned teacher. The weight age of this examination will be 30% for BSc. The teacher may conduct a make up examination if necessary after consulting the H.O.D.

If a student does not appear in a sessional examination, a re-examination may be conducted by the subject teacher only after the payment of penalty fees as decided by the University for each sessional in which the students was absent. Penalty fees should be paid for being absent in a sessional examination due to any reason including illness. On payment of fees, the subject teacher may reconduct a sessional examination with the consent of Dean.

If a student is unable to pass a sessional examination, he/she will be considered as back in that paper.

(b) Year-end Examination.

The University shall conduct it normally after completion of the course content of the syllabus. The question paper will be set by examiners appointed by the Vice-Chancellor on the basis of the recommendation of the board of studies. The University shall decide the pattern of the question paper. The weight age of this examination will be 70%.

(c) Practical Examinations

A practical examination will be conducted in those papers, where it is given in the course structure. V.C. will appoint the examiners on the basis of the recommendations of the board of studies. The marks of the practical examination for B.Sc students will be distributed on the following basis.

(1) 30% based on the performance of the students in the practical experiments conducted in the department laboratory under the faculty In charge of the concerned practical. The students will have to submit a practical record to the faculty In charge.

(2) 70% based on the year end/semester end practical examination and the viva-voice conducted by the examiners. The examiners include the Department faculty member In charge of the practical course and an external examiner appointed by the Vice-chancellor. 30 marks will be for the experiments performed by the students in presence of the examiners and 20 marks will be for the viva-voice.

(2) Maximum marks

Maximum marks for each paper in B.Sc will be 100 for each theory paper and 50 for each practical or mentioned in course curriculum.

(3) Minimum passing marks

B.Sc. Home Science - 33% for both Theory & Practical

(4) Results and Divisions for theory, seminars and practical

(a) Third Division

B. Sc. 33% or more but less than 45%

(b) Second Division

B. Sc. 45% or more but less than 60%

(c) First Division.

60% or more but less than 75%

(d) Distinction.

75% or above.

9(5) Promotions to the next year:

A student shall be promoted to the next year only if he/she passes 50% of the total number of theory papers in the year. Those who are unable to pass 50% of the theory papers shall be considered as fail.

9 (6) Back paper Examination.

The students will have to clear theory, sessional as well as the practical papers separately. In case a student fails to clear a particular paper in a semester or year he/she shall be permitted to clear the 40% for both theory, sessional and practical by taking a back paper examination which shall be conducted along with the Annual examination in which that particular paper is offered in case of the B.Sc.(Home Science) students as in the mean time, the student will be given provisional admission in the next year. If student fails in sessional examination and did not submit the fees of sessional examination will be considered failed. A student will have clear his/her back paper with in three chances including special back paper. A student will have to clear all the papers by the end of the 2nd year in order to be eligible for the award of the relevant degree by the university.

Ex-Student

In case a student fails in the examination as per relevant provision he/she may be allowed to subsequent examination as an ex-student, without attending classes. He/she shall be appear & clear all papers, practical, examination etc. as per provision of the syllabus in that year.

9 (7) Special Back paper Examination.

The University may also hold a special back paper examination after the declaration of final year result of (B.Sc. Home Science) and only for those students who were in Final year shall give the special back paper of any year. If a student fails to clear a special back paper he/she may be given another chance only with the regular (junior) students, where the student has to appear in an ordinary back paper

examination. The fees of the above examination shall be decided as per the university norms decided time to time.

9(8) Improvement Examinations

If a candidate has availed the chance of appearing in the back paper, he/she would not be improving his/her percentage.

For Improvement of percentage in semester/annual examination, a candidate can take one paper from each academic year / semester. The improvement of percentage can be done only at academic year.

Amendment:

Any ordinance, fee structure and eligibility are subject to amendment from time to time as may be by appropriate body of the University.

9(9) Final award of divisions-

The students will be declared passed in a particular division after considering the average of marks obtained in all theory and practical.

10. Discipline.

The students of the department are expected to maintain proper discipline with in the Institute as well as with in the University campus. Mutual consultation, carrying any hand written, printed material or books etc in the examination hall during any sessional or end semester/year examination will be considered an unfair practice. The examiners on duty may take back the answer sheets provided to any such student and expel the student from the examination hall and report the matter to the H.O.D.

The H.O.D. may recommend disciplinary procedures against such students including fine, suspension, debarring from appearing in any future examination for a time period up to 3 years or expulsion of the student from the University to the Vice Chancellor.

Students who want to go home or visit any other Institution/University/ Industry etc on valid reasons must submit an application to the H.O.D. and should take permission from the H.O.D. to leave the campus for the specific time period.

11. Confidential file of students.

The H.O.D. may maintain a confidential personnel file of students and keep a record of reports, feed backs etc about the activities and behaviour of students in the campus as well as in places or Institutions where they undergo training, attend seminars/conferences etc. The H.O.D. may check these files and use his discretionary powers while giving recommendations/permissions etc to students for training, project work etc. or for issuing the conduct and character certificate to students.

13. Course programme- The course programme of B.Sc. (Home Science) is given below-

B.Sc. (Home Science) Revised syllabus

B.Sc. H.Sc. (Ist Year)

w.e.f. 2008-09

Compulsory Courses

Course Code	Course Title	Final Exam	Sessional Practical	
BHS-101	Introduction to Home Science	75	25	50
BHS-102	Human Physiology	75	25	
BHS-103	Childhood Development	75	25	50
BHS 104	Core Module Syllabus for Environmental Studies	50(Marks not to be added in the total marks)		
Elective Courses (Arts Group)				
BHS-105	Introductory Sciences	75	25	
Elective Courses (Science Group)				
BHS-106	Introductory Arts	75	25	
			Total = 500	

B.Sc. H.Sc. (IInd year)

w.e.f. 2009-10

BHS-107	Food Science Preparation and Preservation	75	25	50
BHS-108	Textiles	75	25	50
BHS-109	Management of Family Resource and Household Equipments	75	25	50
BHS-110	Development and studies in Adolescence and Adulthood	75	25	50
BHS-111	Extension Education and Community Development	75	25	50
BHS-112	Nutritional Biochemistry	75	25	50
			Total = 900	

B.Sc. H.Sc. (IIIrd Year)

w.e.f. 2010-11

BHS-113	Nutrition and Dietetics	75	25	50
BHS-114	Clothing Construction	75	25	50
BHS-115	Housing, Furnishing & Maintenance	75	25	50
BHS-116	Communication, Diffusion & Adoption of Homestead Technology	75	25	50
BHS-117	Entrepreneurship Development	75	25	50
BHS-118	Applied & Community Nutrition	75	25	50
			Total = 900	

Grand Total = 2300

B.Sc. (Home Science) Revised syllabus

B.Sc. H.Sc. (Ist Year)

w.e.f. 2008-09

Compulsory Courses

Course Code	Course Title	Final Exam	Sessional	Practical
BHS-101	Introduction to Home Science	75	25	50
BHS-102	Human Physiology	75	25	
BHS-103	Childhood Development	75	25	50
BHS 104	Core Module Syllabus for Environmental Studies	50(Marks not to be added in the total marks)		

Elective Courses (Arts Group)

BHS-105	Introductory Sciences	75	25	
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Elective Courses (Science Group)

BHS-106	Introductory Arts	75	25	
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Total = 500

B.Sc. H.Sc. (IInd year)

w.e.f. 2009-10

BHS-107	Food Science Preparation and Preservation	75	25	50
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B.Sc. H.Sc. (IIIrd Year)

w.e.f. 2010-11

BHS-113	Nutrition and Dietetics	75	25	50
BHS-114	Clothing Construction	75	25	50
BHS-115	Housing, Furnishing & Maintenance	75	25	50
BHS-116	Communication, Diffusion & Adoption of Homestead Technology	75	25	50
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Total = 900

Grand Total = 2300

BHS-101 INTRODUCTION TO HOME SCIENCE

Final Exams:75
Sessional Exams:25
Practical : 50

Unit I- Introduction

Meaning & Scope of Home Science. Home Science in India.

Unit II Food & Nutrition

Food groups and the nutrients contributed by each group to the diet composition and nutritive value of cereals , pulses dairying products , meat , fish and poultry , vegetables ,fruits ,fats and oils ,sugar and jaggery Type of nutrition- Malnutrition, undernutrition, over nutrition
Balanced diet- principles of meal planning according to RDA.Food processing methods- Soaking, Sprouting, grinding, boiling, steaming etc.Effect of processing and cooking methods on composition and nutritive value of foods

Practical

Weighing and measuring of food items-Preparation of recipes using cereals and cereal products, pre-treatment and processing of pulses germination, fermentation, preparation of recipes

Unit III Home Management

Definition, scope and significance of family resources management. Family, its type, stage of family life cycle, concepts of management: values, goals, standards and resources management process, planning, organizing, controlling and evaluation, energy management, decision making process, work simplification techniques.

Unit IV Clothing and textiles

Introduction to textile fiber, its classification, terminology used in textile processing, Weaving, Finishes, Stain removal methods, Sewing machine – its parts and accessories

Practical

Demonstration on laundry equipments, washing, finishing and storage of textile articles.

Unit V Child Development

Meaning, Scope & importance. Various stages of child development, prenatal development, Physical, Motor, Emotional, Personality, Cognitive, Social, Speech development of child.

Unit VI Extension education

Meaning of extension education and its relationship with other sciences and subject matter areas of Home Science. Extension education as a discipline with special reference to home science. Extension education and its contribution towards development of rural families / household .Historical development of community development and extension education programmes in India, Philosophy , principles , objectives and selected concepts of Extension education , selected rural development programmes of govt. , voluntary organizations and state universities for women , youth and children with special reference to role of home science extension in community building for upliftment for rural families

Reference:-

Chandra A.A. Shah and U. Joshi (1989): Fundamentals of Teaching Home Science, New Delhi: Sterling Publishers House.

Devadas, Rajammal P. (1980): Text-book of Home Science, NCERT, New Delhi.

BHS-102 HUMAN PHYSIOLOGY

Final Exams:75
Sessional Exams:25

Unit I

Introduction -Definition of Physiology, structure of the cell and function of its component parts.

Unit II

Blood –Blood composition, function and blood group.

Unit III

Digestive system –Anatomy and physiology of the alimentary canal, liver, pancreas and gall bladder, digestion and absorption of carbohydrates, protein and fats.

Reproductive system–Physiology and anatomy of male, female, sexual organs, spermatogenesis, menstrual cycle.

Unit IV

Excretory system –structure and function of kidney, mechanism of formation of urine by the kidney .Endocrinology –Elementary study of different endocrinal glands of the body, their hormones and action.

Unit V

Cardiovascular system –Structure and anatomy of heart, circulation of blood to heart (Pulmonary circulation), cardiac cycle.

Respiratory system-Structure and Anatomy of Respiratory organ, mechanism of respiration, artificial respiration.

Unit VI

Nervous system-Structure and function of brain and spinal cord reflex action (Elementary study).

Special Sense –Structure and function of eye, ear and skin.

Reference:-

Guyton, A.C. Hall, J.E. (1996): Text book of Medical Physiology, 9th ed. Prism Books (Pvt.)Ltd., Bangalore.

Winwood (1988): Sear's Anatomy and Physiology for nurses, London, Edward Arnold.

Wilson (1989): Anatomy and Physiology in Health and Illness, Edinburgh, Churchill Livingstone

BHS-103 CHILDHOOD DEVELOPMENT

Final Exams: 75
Sessional Exams: 25
Practical: 50

Unit I Prenatal Development

Stages, Factors influencing prenatal development, Birth Process and complications

Unit II Infancy

0-2 years—The baby at birth ; size, activity, sensations and sensitivity and needs. Classification of infant states, and methods of handling infants. Physical and motor development during first two years and emotional development. Development of understanding and language. Cognitive development. Piaget's theory of cognitive development ; the sensory motor stage. Effects of maternal and social deprivation.

Unit III Preschool years

3-6 years—Physical and motor development Adaptive behavior cognitive and language development. Piaget's theory of cognitive development the preoperational stage. Social development Socialization at home and outside home - Play and its value.

Unit IV School Years

6-12 years -Physical growth and development of motor skills. Language and cognitive development. Piaget's theory of cognitive development: Concrete Operational stage. Imagination and creativity. Social development at home—Peer, groups and friendship roll of parents. Teachers and community in personality development and adjustment.

PRACTICAL

Interviewing mothers of infants to conduct a survey of feeding and weaning practices.
Taking heights and weights of Infants and pre-school children.
Observation of Infants and children for stages of language development and speech analysis.
Observing play preferences and other social activities in children.
Planning and conducting recreational activities for young children.
Rhymes, songs and stories Creative activities play activities.
Visit to Bal Bhawan and other institutions of child welfare
Preparing a report of these visits.

Reference:-

Gordon, I.J. (1975): Human Development. New York: Harper & Row Unit I pp. 2-21
Harris, A. C. (1986): Child Development. St. Paul: West Pub. Unit I, pp.5-17

BHS-104 CORE MODULE SYLLABUS FOR ENVIRONMENTAL STUDIES

Final Exams: 50

- Unit1: The multidisciplinary nature of environmental studies (2 lectures)
Definition. Scope and importance
Need for public awareness
- Unit 2: Natural Resources: Renewable and non-renewable resources: (8 lectures)
- . Natural resources and associated problems.
 - a. Forest resources: Use and over – exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal people.
 - b. Water resources: Use and over utilization of surface and ground water. Floods, drought, conflicts over water, dams benefits and problems.
 - c. Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
 - d. Food resources: World food problems, changes caused by agriculture and over grazing effects of modern agriculture, fertilizer, pesticide problems water logging, salinity, case studies
 - e. Energy resources: Growing energy needs renewable and non-renewable energy sources, Use of alternate energy sources, case studies.
 - f. Land resources: Land as a resource, land degradation, man induced landslides, soil erosion and desertification.
 - . Role of an individual in conservation of natural resources.
 - . Equitable use of resources for sustainable lifestyles.
- Unit 3: Ecosystems
- . Concept of an ecosystem
 - . Structure and function of an ecosystem.
 - . Procedures, consumers and decomposers.
 - . Energy flow in the ecosystem.
 - . Ecological succession.
 - . Food chains, food webs and ecological pyramids.
 - . Introduction types characteristic features, structure and function of the following ecosystem:-
 - a) Forest ecosystem
 - b) Grassland ecosystem
 - c) Desert ecosystem
 - d) Aquatic ecosystem (ponds, streams, lakes, rivers.oceans, estuaries).
- Unit 4: Biodiversity and its conservation
- . Introduction- Definition: genetic, species and ecosystem diversity.
 - . Biogeographically classification of India.
 - . Value of biodiversity: consumptive use, productive use, social ethical, aesthetic and option values.
 - . Biodiversity at global, National and local levels.
 - . India as a mega-diversity nation.
 - . Hot spots of biodiversity.
 - . Threats to biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts.
 - . Endangered and endemic species of India
 - . Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

Unit 5: Environmental Population

(8 lectures)

- . Definition, Causes, effects and control measures of:-
 - a. Air pollution
 - b. Water pollution
 - c. Soil pollution
 - d. Marine pollution
 - e. Noise pollution
 - f. Thermal pollution
 - g. Nuclear hazards
- . Solid waste Management: Causes, effects and control measures of urban and industrial Wastes.
- . Role of an individual in prevention of pollution
- . Pollution case studies.
- . Disaster management: floods, earthquake, cyclone and landslides.

Unit 6: Social Issues and the Environment

(8 lectures)

- . From Unsustainable to Sustainable development
- . Urban problems related to energy
- . Water conservation, rain water harvesting, watershed management
- . Resettlement and rehabilitation of people; its problems and concerns. Case studies
- . Environmental ethics: Issues and possible solutions.
- . Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
- . Wasteland reclamation.
- . Consumerism and waste products.
- . Environment Protection Act.
- . Air (Prevention and control of Pollution) Act.
- . Water (prevention and control of pollution) Act.
- . Wildlife Protection Act.
- . Forest Conservation Act.
- . Issues involved in enforcement of environmental legislation.
- . Public awareness.

Unit 7 : Human Population and the Environment

(7 lectures)

- . Population growth, variation among nations.
- . Population explosion –Family welfare Programme.
- . Environment and human health.
- . Human Rights.
- . Value Education.
- . HIV/ AIDS.
- . Women and Child welfare.
- . Role of Information Technology in Environment and human health.
- . Case studies.

Unit 8 : Field work

(6 lectures)

- . Visit to a local area to documents environmental assets – river / forest /grassland / hill/ Mountain
- . Visit to a local polluted site- Urban / Rural / Industrial / Agricultural.
- . Study of common plants, insects, birds.
- . Study of simple ecosystems – pond, river, hill slopes etc.

(Field work Equal to 5 lecture hours.)

BHS-105 INTRODUCTORY SCIENCES

Final Exams: 75
Sessional Exams: 25

UNIT-I (CHEMISTRY)

Introduction to chemistry Electrolysis, electrolytes, non-electrolytes, laws of electrolysis and application of electrolytes. Catalysis, Types of catalysts, characteristics. Colloidal state of matter,. Radioactivity, Gases: oxygen, ozone, nitrogen, hydrogen, carbon dioxide Water: Desalination of water, hard and soft water, hardness and their removal, methods of purification of water for drinking purposes in city. Elementary idea of oxidation & reduction.

UNIT-II (PHYSICS)

Units and Measurement: Conversion of Units. Force and Moments: Definition Principles of Moments, Equilibrium of Forces, Center of Gravity, Friction, Fluid Pressure, Barometers, Forces in fluids, Pascal's Law, Archimedes Principle and Application to Lactometer and Hydrometer Motion, Speed, Velocity and Acceleration , Mass and Weight, Simple Pendulum, Terminal Velocity in Free Fall, Work Power and Energy, Momentum, Energy, Energy Interchanges, Heat and Temperature: Thermometers, Thermal Expansion of Solids, Liquids and Gases, Heat energy and Heat Capacity. Change of State: Latent Heat, Heat Transfer. Light: Formation of Image by Concave and Convex Lenses. Characteristics of Wave Motion: Frequency, Wavelength, Velocity and Amplitude, Electromagnetic Spectrum.

UNIT-III (BIOLOGY)

General idea of microbes (bacteria, virus), classification of Living thing, Origin of life & evolution Plant physiology – structure of a typical plant cell, difference between animals and plant cell, significance of transpiration, photosynthesis and respiration, factors affecting the same. General introduction ecology, food chain, biomass pyramids, Green house effect, Global warming.

BHS-106 INTRODUCTORY ARTS

Final Exams: 75

Sessional Exams: 25

UNIT-I (SOCIOLOGY)

Sociology and rural sociology- Meaning, nature, importance and scope, relationship of rural sociology with other social science and Home Science. Understanding basic sociological concepts. Society, community, association institutions, social groups, rural social structure, family, caste, class, kinship, Characteristics of rural and tribal society. Rural urban differences, problems of rural society, Culture –Meaning, importance, cultural components, norms, customs, folkways. Social change-meaning and importance, social control, Elements of social system

UNIT-II (ECONOMICS)

Definitions and scope of Economics. Importance of studying Economics.

National Income, Concepts of utility consumption and demand.

Classifications and characteristics of wants, Consumption and utility, Laws of consumption- Engel's Law of family budgets, Law of Diminishing Marginal utility. Consumer' surplus

Law of Demand, Elasticity of Demand, Land – Law of Diminishing Returns.

Capital – classification of capital formation.

UNIT-III (PSYCHOLOGY)

Meaning scope and nature relationship with other disciplines, Division of psychology, development experimental, comparative, clinical, social, abnormal education etc.

Method of psychology: experimental, observation, introspection method, differential method, and clinical and psycho- Physical method.

Learning Motivation and perception, Motivation- Needs and Drives

Perception-Characteristics.

Intelligence: Definition, Nature and assessment of intelligence.

Personality – Definition and types of the Personality

B.Sc. Home Science
IInd Year

BHS-107: FOOD SCIENCE

Final Exams: 75
Sessional Exams: 25
Practical : 50

UNIT-I

Composition, Structure, nutritive contribution, quality and preparation of Cereals ,Pulses, Fruits & Vegetables, Milk and Milk Products, Meat, fish and Poultry, Eggs, Fats, oils and oilseeds , Sugars, Tea, coffee, cocoa and chocolate, Condiments, spices, herbs, colorings and flavorings agents

UNIT-II Selection of food.

- (i) Economical
- (ii) Quality
- (iii) Sociocultural
- (iv) Availability

UNIT-III Food preparation

- (a) Basic Terminology -
- (b) Methods of cooking
- (c) Effect of cooking, processing and storage - Chemical. Physiochemical and microbiological.

UNIT-IV Methods of improving Nutritional quality of foods:

- (a) Germination
- (b) Fermentation
- (c) Supplementation
- (d) Fortification.

UNIT-V Food preservation:

- (a) Causes of food spoilage.
- (b) Principles of preservation
- (c) Food additives
- (d) Methods - home and commercial

UNIT-VI Food Hygiene:

- (a) Food borne diseases - causes and prevention
- (b) Food poisoning - microbial and chemical.

Practical

I. Weights, measures. Equivalents

II. Food preparation

- (a) Beverages - tea, coffee, fruit and milk.
- (b) Vegetables—methods of retaining colour and texture—curries dry vegetables cutlets and baked.
- (c) Cereals - Starch cookery, rice-boiled and variations, flour mixture-batters and dough. Samosas and mathries, Italian Pastas.
- (d) Pulses— dal vadas, sprouts and stuffing.
- (e) Milk—Puddings, chaina , Panir and Khoya preparations.
- (f) Meat—curries, kabab and stews.
- (g) Fish—steamed, fried, baked and curried.

- (i) Egg—Hard and Soft, cooked poached scrambled, omelete - plain and fried. Custards - soft, steamed and baked.
- (j) Soups—Plain, cream of tomato and Veg. Soup
- (k) Nuts—Peanut chikki, til laddoo.
- (l) Baked products - Cakes, biscuits ,apple pie and patties.
- (m) Frozen desserts - Souffles and ice creams.

III Demonstration of table setting.

References

Introductory Foods : Hughes and Bennion

Food Science . B . Srilaxmi

Principles of Food Preparation : Gladys C Peckham

Experimental study of foods Griswold

BHS-108 : TEXTILES

Final Exams:75
Sessional Exams:25
Practical :50

- I. A. Introduction to Textiles.
B. Fibre Theory.
C. Classification of Textiles
- II. Textile Fibres: Manufacture, Properties and their importance to the consumer
 - A. *Natural* : Cotton, Linen, Silk and wool.
 - B. *Man-made* : Rayon, Nylon, Dacron , Asbestos
- III. Yarn construction and the effect of the type of yarn on the finished fabric.
 - A. (i) Mechanical Spinning.
(ii) Chemical Spinning.
 - B. Classification of Yarns
 - (i) Simple
 - (ii) Novelty
- IV. Fabric construction and guide's in selection:
 - A. Felting
 - B. Braiding
 - C. Bonding
 - D. Knotting
 - E. Knitting
 - F. Weaving.
- V. Fabric Finish
 - A. Basic — Bleaching, sizing and dressing, singeing, tentering, beetling, mercerizing and calendering.
 - B. Texturising — Embossing, moiring. Schreinerer, napping flocking, acid and basic finishers.
 - C. Functional — Anti - static, absorbent, bacteriostats, moth - proofing, Shrinkage control, flame retardant, water repellent and water proofing, soil and stain resistant, crease resistance wash and wear and permanent press.
 - D. Finishing- with colour—dyeing.
- VI. Applied Design — Block printing; Batik and tie dyeing, Spray printing, Screen printing,
- VII. Consumer Problems—Study of fabrics in relation to price and quality .Labeling fabrics.
- VIII. Factors in selection, use and care of fabrics.

PRACTICAL

- I. Care of Textile fabrics.
 - A. Supplies: cleaning agents, blues and stiffening agents.
 - B. Equipment Rubbing board, suction washer, washing machine, ironing board etc. -
- II. Family Wash:
 - A. Stain removal, Simple home methods and use of chemical stain removers.
 - B. Principles and methods of laundering, their application to various fabrics
 - C. Processes in finishing ironing, pressing and steam pressing.
 - D. Washing of Cotton, Wool, Silk and man - made fabrics.

III. Fabric study

- A. Fabric (i) Identification: Microscopic, Physical and Chemical tests.
(ii) Reaction to acids alkalis, salts etc.
(iii) Absorbency of indigenous and commercial dyes.

B. Fabric

- (i) Thread counts and balance (ii) Yarn slippage (iii) Weave.

C. Launder ability:

- (1) Dimensional Stability,
(ii) Colour fastness.
(iii) Cleaning efficiency of detergents.
(iv) Stiffening agents.
Blues Whitening agents.

IV. Dry cleaning with special -reference to spotting and cleaning..

Dyeing of fabrics using commercial dyes(Applied design: tie dyeing , batik, block printing ,screen printing etc.)

Reference:-

- Corbman, B.P. (1985): Textile Fibre to Fabric, Mc Graw Hill, New York
Hollen, N. and Saddler, J.: Textiles Latest Ddn., Mac Millan & C., New York.
Joseph, M.L. (1976); Introductory Textile, Holt Ripenhart of Winston, New York.

BHS-109 MANAGEMENT OF FAMILY RESOURCES AND HOUSEHOLD EQUIPMENTS

Final Exams: 75
Sessional Exams: 25
Practical : 50

PART—I

- I.** Meaning, characteristics, concepts and components of management -differences among families - culture bias.
- II.** The family - structure and composition, stages, needs and wants, problems of large families - need for small family norms - effects on resources and management.
- III.** Classification of resources - human and material - knowledge, skills, abilities, interest, attitudes, energy, time and money.
- IV.** Resource Management - objectives, Principles of use, factors affecting the use, sound distribution, meeting needs of family members, economy and efficiency
- V.** Management principles and processes.
 - (a) Motivation forces - values, goals and standards.
 - (b) Decision - making, Criteria for choice - complexities and techniques.
 - (c) Planning, co-ordinating.
Organising, guiding directing, supervision and evaluation.
- VI.** Time and energy management - organisation of work in relation to time and efficiency.
- VII.** Work in the home - body mechanics -
postures, motions and movements involved in work.
Fatigue and efforts - causes, types, effects on work and prevention.
- VIII.** Concept of energy cost in work - Oxygen consumption as a measure of energy expenditure.
- IX.** Work simplification - methods, study of organisation of work centres - in the kitchen, work space, storage and equipment.
- X.** Relationship of equipment design to functionality.
- XI.** (a) Quality features in selection of equipment.
(b) Preparation of buying guides.

PART - II

(Household Equipment)

- I.** Mechanical appliance - vacuum cleaners, washing machines, gas meters.
cream separators, coffee percolator.
- II.** Heating appliances—Temperature control in household equipment - iron, toaster, refrigerator, gas and electric oven, gas and electrical cooking ranges; solar cooker, pressure cookers, air conditioners central heating and refrigerators - water heaters.
- III.** Electric appliances and electrical services—
 - (1) Household wiring, fuse, electric meter, room and stair case lighting, lighting fixtures, incandescent lamp, and florescent lighting.
 - (ii) Motorized equipment - fan, mixers, grinders, blenders.
 - (iii) Electric Bell, telephone, Radio-Elementary principles of TN. Tape Recorder.

PRACTICAL

1. Study of
 - (a) Telephone Circuit.

- (b) Electric Bell 'Circuit.
- 2. Staircase lighting - room lighting—cost of consumption.
- 3. Repair of Heater and Iron.
- 4. Comparative study of design and functional features in household equipment
 - (a) Utensils- for cooking, serving and washing (4 experiments).
 - (b) Accessory equipment—kettles, irons, toasters, knives mixers and grinders. (5 experiments).

Reference:-

Ruth E. Deacon, Francille M. Rirebaugh (1975): Family Resource Management – Principle and Application, Roy Houghten Mifflin Company (Unit I, II, IV-VII)

Irma, H. Gross, Elizabeth Grandall, Marjoris m. Knoll (1973): Management for Families for Modern Families, Perntice Hall, Inc, Englewood Cliffs, New Jersey (Unit I-VIII).

BHS-110 DEVELOPMENT IN MIDDLE CHILDHOOD AND ADOLESCENCE

Final Exams: 75
Sessional Exams: 25
Practical : 50

Adolescence

13-18 years - Physical changes, motor development, sex differences, Early and late maturity. Psychological aspects of adolescent growth and development. Cognitive development Growth of intellect, abilities and aptitude. Piaget's Theory of cognitive development : Formal operational stage; measurement of :mental development. Social - development ; role of home, peers, school Development of moral values and social norms Identity, alienation Problems of adjustment.

Adulthood

Stages, changes in interests, social mobility sex role adjustments vocational Adjustments, adjustments to parenthood and single hood, adjustments to Physical changes, mental changes.

Old age

Adjustments to changed family patterns, adjustments, physical single hood, Loss of a spouse, approaching retirement, physical changes, motor changes, remarriage.

Exceptional children

Meaning and definition of children with special needs. Characteristics and Identification of children with special need: sensory, visual, audio etc. children with behavioral deviation, emotional disturbances, social mal adjustment and delinquent special education for children with special need, Welfare programme for meeting the needs for exceptional children.

PRACTICAL

1. Survey of research methods used in study of children and adolescents.
Techniques - Tests - Intelligence Tests
Projective Tests: TAT Word Association Aptitude— Differential Aptitude test.
2. Case study of an adolescent.
3. Survey of recreational interests of children
4. Visits to selected children's institutions.
5. Observation
 - (i) Parent child interaction outside home.
 - (ii) Children's interaction with other children and adults.

Reference:

Rice, F.P. (1995). Human Development. New Jersey: Prentice Hall.
Berk, L.E. (1995). Child Development. London: Allyn & Bacon.
Cole, M.& Cole, S. (1993). The development of children. (2nd ed.) New York: Scientific American Books Freeman & Co.

BHS-111 Extension Education

Final Exams:75
Sessional Exams:25
Practical :50

- I. Extension Education:
 - (a) Meaning, principles, scope, Philosophy and objectives of extension education.
 - (b) Basic elements of Extension.
 - (c) Historical basis of Extension.
 - (d) India's need for Home Science Extension Education.
2. Methods of extension teaching
 - (a) Approaches in extension education and methods of teaching
 - (b) Characteristics of teaching- learning process.
- 3 Classification of methods and media and their comparative value in adoption of improved home practices, Programme planning, adult learning, Child development programmes in India

Practical

Preparation and use of teaching material leaflets, folders and flash cards ,flannel graph etc.

Conducting demonstration

Organizing and participation in group discussion with village women

Organizing exhibition

Visits to institutions and field as demonstration center

Reference:-

1. Rogers, Alan (1989): Teaching Adults in Extension. Education for Development, Westwood Row, Tilehurst, READING RG 31 6 LT. England, Woodnabs,
2. Reddy A. (1987): Extension Education, Bapatia, India, sree Lakshmi Press.
3. McGivney, Veronica and Murray Frances (1991): adult Education in Development: Methods and Approaches from Changing societies, Leicester, U.K., National Institute of adult and Continuing Education.

BHS-112 NUTRITIONAL BIOCHEMISTRY

Final Exams:75
Sessional Exams:25
Practical :50

1. Sources, function, Structure and general properties of physiologically important compounds:- (a) Carbohydrates - glucose, fructose, galactose, sucrose, maltose, lactose, starch glycogen.
(b) Lipids - fatty acids, triglycerides, phospholipids, sterols.
(c) Proteins—amino acids proteins.
2. Digestion and absorption of Carbohydrates, fats, proteins.
3. Metabolism of -
 - (a) Carbohydrates - glycolysis, citric acid, cycle, synthesis breakdown of glycogen, gluconeogenesis, Blood sugar and its regulation.
 - (b) Lipids - oxidation of fatty acids, fatty liver, ketosis.
© Proteins—general reactions of amino acid metabolism, urea cycle.
4. Chemistry and physiological functions of fat –soluble and water soluble vitamins
5. Enzymes –Classification , elementary treatment of enzymes kinetics, including factors which affects rates of enzymes – catalyzed reactions.
6. Sources, function and general properties of minerals
7. Water and electrolytes balance.

Practical

1. Qualitative analysis of mono, di and polysaccharides.
2. Estimation of total and reducing sugars.
3. Estimation lactose in milk.
4. Estimation of total fat content of foods, saponification value. Iodine value.
5. Reactions of proteins.
6. Estimation of total N of food by Kjeldahl's method.
7. Ascorbic acid estimation in foods.
8. Estimation of Calcium in foods.
9. Measuring pH in different solution

Reference:-

Oser, B.L. (1965): 14th Ed., Hawk's physiological chemistry, McGraw-Hill Book Co.

B.Sc.Home Science
IIIrd Year

BHS-113 NUTRITION AND DIETETICS

Final Exams:75
Sessional Exams:25
Practical :50

1. Definition of health and nutrition, dimension and indications of positive health.
2. Requirements and recommended dietary allowances, of nutrients under normal and physiological stress conditions.
3. Energy Metabolism
 - (a) Unit of energy
 - (b) Energy value of foods
 - (c) Factors affecting energy metabolism-B M.R., Specific Dynamic Action, Activity, Age, Climate and physiological conditions.
 - (d) Methods of assessment.
4. Evaluation of protein quality: PER, NPR, B V. NPU, and Chemical score
5. Role of dietary fiber
6. Importance of meal planning- Factors affecting meal planning
 - (a) Nutritional
 - (b) Sociological
 - (c) Religious
 - (d) Geographical
 - (e) Economic
 - (f) Availability of time and material resources.
7. Diet type and requirement in various socio economics and activity levels
 - (a) Infancy
 - (b) 1-6 years
 - (c) 7-12 years
 - (d) 13-18 years
 - (e) Adulthood
 - (f) Pregnancy and lactation
 - (g) Old age.
8. Nutrition and Infection
 - (a) Immunity
 - (b) Interaction between nutrition and infection
9. Nutrition in common diseases—
 - (a) Fevers—Typhoid and Tuberculosis
 - (b) Diarrhoea and constipation
 - (c) Infective hepatitis
 - (d) Obesity
 - (e) Diabetes
 - (f) Atherosclerosis and hypertension

PRACTICAL

1. Dietary calculations using —
 - (1) Nutritive value tables
 - (2) Food exchange lists

2. To determine portion sizes of raw and cooked foods and calculations of important nutrients.
3. Planning, calculation and preparation of diets for different sector economic groups
 - (a) Infant, with special reference to weaning foods.
 - (b) Children—
 - (i) 1 - 3 years
 - (ii) 4 - 6 years
 - (iii) 7-12 years
 - (c) Adolescents—boys and girls
 - (d) Adults—Men and women engaged in sedentary, moderate and heavy work.
Pregnant and lactating women.
4. Planning, calculation and preparation of the following
 - (a) Snacks for young children emphasizing calories, vitamin A and iron content.
 - (b) Packed lunch for school going children.
Picnic lunch for the family.
5. Planning calculation and preparation of the following
 - (a) Fluid diet
 - (b) Bland diet
 - (c) Low residue and high fibre diets.
 - (d) Low calories high Protein diet.
 - (e) High protein, high carbohydrate fat restricted diet.
 - (f) Sodium restricted diet.
 - (g) Diabetic diet

Reference

1. Normal and Therapeutic - Robinson, Corinne H. Nutrition.
2. Human Nutrition and Dietetics — Davidson, Passmore Brock and Truswell.
3. Nutritive value of Indian Foods — Gopalan, Rama Sastri and Balasubramaniari

BHS-114 CLOTHING CONSTRUCTION

Final Exams: 75
Sessional Exams: 25
Practical : 50

I. General principles for clothing construction:

Study of body measurements in relation to height and age.

Importance of drafting and making patterns.

Placing and cutting of paper-pattern in relation to texture and design of fabric.

Calculating the amount of material required for different garments.

II. Common fitting problems and how to remedy fitting defects.

III. Study of:

(a) Colour - in relation to season, occasion, size figure, and complexion.

(b) Texture and line in relation to figure and size.

(c) Fashion.

IV. Intelligent buying ready-made garments:

(a) Appearance - size, design, line and colour.

(b) Fabric - durability, serviceability.

(c) Workmanship—cutting, sewing, finishing and fitting.

(c) Cost.

V. Indian embroideries

PRACTICAL

I. Taking body measurements for different types of garments.

II. Drafting the basic blocks; adaptations, different sleeves and collars, selection of suitable materials, and stitching of following garments with appropriate techniques and decorations.

A. Children Garments : (a) Baby Diaper (b) Bib (c) Jhabla (d) Baby suit

B. Ladies Garments : (a) Sari-peticoat (b) Sari-blouse (c) Salwar and Kamiz or Churidar

III. Mending

(a) Patches plain and printed.

(b) Darning—thin place ledge tear, knife-cut and hole.

IV Practical on Indian Embroideries

Reference:-

Bane, A. (1974): Tailoring, McGraw Hill Publication, New Delhi.

Readers Digest (1982): Complete Guide to Sewing, Association Inc., New York, New Delhi

BHS-115 HOUSING, FURNISHINGS AND MAINTENANCE

Final Exams:75
Sessional Exams:25
Practical :50

PART— I

- I. *Housing—Family housing concepts.*
 - (a) Role of housing in national economy.
 - (b) Specific needs of families, protective, social, economic, educative, affection, and status-determining.
 - (c) Adequate housing—providing for ample sponsor family activities, work areas storage, equipment, convenience, comfort, sanitation and safety.
- II. Problems in housing present conditions in India.
 - (a) Social and economic factors.
 - (b) Technical factors—land, labour and material.
- III. Principles of planning—site selection, orientation, aspect, prospect, grouping, roominess flexibility, lighting, ventilation and sanitation. Desirable construction features and housing standards—foundation, walls, doors, windows fittings and finishes. Conventional and modern building materials features for cost economy, cheaper. Substitutes —plastic, particleboards, metal alloys.
- IV. Home Furnishings:
 - (a) Elements and principles of art, design—structural and decorative.
 - (b) Colour—qualities and use in solving decorative problems.
 - (c) Furniture and furnishings—quality, material, design and arrangement.
 - (d) Simple decorations for rooms accessories and flower arrangement..

PART—II

1. *Household Utensils*
 - A. *Base materials in the 'structure and component parts: —*
 - (i) Metals: (for cooking utensils)
Cast iron, aluminum, stainless steel, copper and its alloys.(for serving utensils and cutlery)
Stainless steel, silver, anodizedaluminium — alloys. Characteristics, suitability, safeguards and maintenance.
 - (ii) *Plastics:* Thermoplastics, acrylics, nylon, polyethylene, polystyrene.
Thermo sets : Phenolics, urea formaldehyde plastics, melarmnes.
Characteristics, cleaning and care. of the above
 - (iii) Ceramics.
 - B *Materials used for finishes*
 - (i) Mechanical finishes : Polishing and buffing materials
 - (ii) Applied finishes—Nickel and chromium plating. Copper cladding on stainless steel. Tinning of Copper and brassware. Galvanizing and tinplating iron. Enamels—Porcelain and synthetic reflon coating
Care and maintenance of the above finishes.
- II. Basic structural building materials - cement and concrete Cast stone , Bricks, terracotta.
- III. Finishing material used in the structure of home
 - A. For counter and floor coverings - Asphalt tile, Ceramic tiles, laminated plastics, linoleum, Vinyl tiles and wood. Cleaning and care of the above.
Insulating materials : Fibre glass, Mica, Mineral wool polystyrene foam.

IV. Composition and mode of. action of different types *of* the following:

- A. Scouring powders.
- B. Household cleaning and disinfectant fluids.
- C. Metal polishes.
- D. Wood polishes.
- E. Leather polishes.
- F. Paints, varnishes, lacquers.

Painting of walls, metal and wood surfaces in the home.

Household fuels - composition and optimal utilization of soft coke, charcoal wood, kerosene, liquefied petroleum gas, natural gas, coal gas, and gobar gas Calorific value, heat utilization. Efficiency and effective price of fuels.

PRACTICAL

- I. Preparation of House plans for families in different income groups, and needs
- II. Preparation of furnishing plans for homes
- III. Preparation of cleansing powders, polishes for metals and. wood
- IV. Making of alpana, rangoli , flower arrangement, painting , wall hanging, pot painting etc.

Reference

- 1. Anna H. Rutt kK(1961): Home Furnishing, John Wiley Eastern Private Ltd., New York. (Unit III).
- Deshpande, R.S. (1980): Modern Ideal Homes for India, (9th Edn.). Smt. L.s. Deshpande for Deshpande Publications Trust. (Unit II, III, VI,VII).
- Leach S. Del Mary k(1993): Techinques of Interior Design Rendering and presentation and New York , McGraw Hill.

BHS–116 Communication, Diffusion & Adoption of Homestead Technology

Final Exams:75
Sessional Exams:25
Practical : 50

1. Origin, meaning, definition, functions and problems of communication.
2. Communication: their function, limitations and selected classification.
3. Instructional media their functions, limitations and selected classification
4. Different types of Audio-Visual aids, their meaning, definition and advantages of communication.
5. Concepts, characteristics and principles of Diffusion, Role of Communication methods in diffusion
6. Homestead technologies, problems in Diffusion Home Science technologies

Practical

1. Visit and Survey of near by slum and rural areas to get acquainted with their social and cultural problem and other specific problem.
2. To select, plan, prepare and use different Audio-Visual aids. To develop ability to prepare and present individualized and group instructions.
3. To develop skill in preparation of tools for conducting base line survey of villages, practice in using teaching methods supplemented with communication media, materials for teaching rural women / adolescent girl / children.

Reference

1. Dhama O.P. Extension and Rural Welfare.
2. Directorate of Extension - Extension Education in C. D.
3. Government of India Publication - India.
4. Government of India Publication - Encyclopedia of Social Work in India Vol. 1-4
5. S.R. Maheshwari - Rural Developments in India.

BHS-117 Entrepreneurship Development

Final Exams:75
Sessional Exams:25
Practical : 50

Unit-1: Entrepreneurship

Definitions, need scope and characteristics of entrepreneurship, entrepreneurship development and employment promotion. Identification of opportunities in food enterprises.

Unit-2: Business environment for the entrepreneurs for food enterprises

Government of India's policy towards promotion of entrepreneurship. Exposure to demand based, resource based, service based, import substitute and export promotion industries.

Unit –3: Need, scope and approaches for project formulation

Market survey techniques, criteria for principles of product selection and development, choice of technology, quality control. Major steps involved in setting up a small scale Unit-Project identification, project formulation, resources mobilization. Institutions, financing procedure and financial incentives. Financial ratios and their significance. Books of accounts, financial statements, funds flow analysis.

Unit-4: Techno-economic feasibility of the project of food enterprise.

Unit-5: Critical path method – project evaluation review techniques as Planning tools for establishing SSI.

Unit-6: Plan lay out and process planning for the food product establishing the Unit

Unit-7: Creativity and innovation

Problem solving personnel management salaries, wages and incentives, performance appraisal, quality control.

Unit-8: Food marketing and sales Management

Marketing strategy, packaging, advertising, label intervention, pricing, after sales service.

Unit-9: Legislations

Licensing, registration, municipal laws, business ethics, income tax, labour law application, consumer complaint redressal.

Practical

Project planning, formulation and report preparation (individual/group exercise)

Reference –

Deshpande, V. (1984): Entrepreneurship of small scale food industries, concept, growth and Management, Deep and Deep publication- D-1/24, Rajouri Garden, New Delhi.

Meredith, G.G. Nelson, Re, et al. (1982): Practice of entrepreneurship, ILO., Geneva.

BHS-118 APPLIED & COMMUNITY NUTRITION

Final Exams:75

Sessional Exams:25

Practical : 50

I The Community

- (a) Concept of community
- (b) Structure of rural and urban communities, social and economic.
- (c) Inter 'and intra relationship between community members.
- (d) Concept and scope of community nutrition.

II. Factors affecting Food availability and intake

Agricultural production, population, economic regional, social, education, distribution, religions and industrialization.

III. Food Storage

- (a) Methods of storage of food grains.
- (b) Agents causing losses of food grains and prevention.
- (c) Fumigation of grains.

IV. Food adulteration

- (a) Meaning of Food adulteration and food laws. -
- (b) Common food adulterants and health hazards.
- (c) Agencies checking food adulteration.

V. Nutritional problems of the Community

Causes and incidence of nutritional problems in infancy, pre-school children, adolescents, pregnant and lactating mothers and old age.

VI. Nutritional Assessment and Methods of identification of Nutritional Problems:

- (a) Techniques of dietary surveys, imitations and interpretation of data
- (b) Anthropometrics biochemical and clinical techniques limitations and interpretation.

VII. Nutrition Education.

- (a) Meaning of nutrition education and its importance.
- (b) Organization of nutrition education programmes for the community problems encountered in organizing a programme and how to solve them.
- (c) Communication methods.
- (d) Communication aids
- (f) Evaluation and follow up

Practical

1. A brief nutritional survey in different communication.
 - (a) Nutritional anthropometrical wt., ht., MUAC of infants, children and adults.
 - (b) Diet survey.
 - (c) Clinical survey.
2. Developing cheap and nutrition recipe for infants, children, pregnant and nursing mother.
3. Development of weaning foods using indigenous items.
4. Development of suitable aids for nutrition education programme.

Reference:-

Agarwal, A.N. (1981): Indian Economy Problems of development and planning.

Jelliffe, D.B. (1968): child Health in the tropics.

Ghosh,S.(1989):You and your child.

SYLLABUS

B.Sc. (Home Science)

Bundelkhand University, Jhansi

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