

Avvaiyar Government College for Women, Karaikal
(Affiliated to Pondicherry University)

B.Sc HOME SCIENCE

REGULATIONS AND SYLLABUS FROM 2009-10 ONWARDS

Aim of the course

The degree of bachelor of Home Science aims to introduce the students to the requirements and fulfillment of family needs of food, clothing and shelter. The course aims at training the students as wise consumers, systematic home makers eligible for career opportunities as dietitians, diet consultants, food analysts, laboratory technicians, interior decorators, fashion makers, dress designers, pre-school and school teachers and successful entrepreneurs.

Eligibility for admission

Candidates for admission to B.Sc Home Science shall be required to have passed Higher Secondary Examination or equivalent (10+2) with Biology / Chemistry / Home Science / Home Science (vocational) as one of the subjects of study.

Duration of the course

The course shall be of three years duration spread over six semesters. The maximum duration to complete the course shall be five years.

Medium of instruction

The medium of instruction shall be English.

Passing minimum

Passing eligibility and classification for the award of the degree as existing for the other B.Sc degree course is applicable.

B.Sc Home Science – Course outline

Semester	Course Code	Title of the Course	Hours/week	Duration of Exam (hours)	Max. Marks
I		Tamil/French/Hindi - Paper I	6	3	100
		English – Paper I	6	3	100
	HSC101	Human Physiology - I	4	3	100
	HSC102	Food Science - I	4	3	100
	HSC151	Allied - Ecology and Environment	6	3	75
II		Tamil/French/Hindi - Paper II	6	3	100
		English – Paper II	6	3	100
	HSC103	Human Physiology - II	4	3	100
	HSC104	Food Science - II	4	3	100
	HSC152	Allied - Computer Basics	4	3	75
	HSC105	Practical – I Human Physiology including HSC101 & HSC103	2 each semester	3	50
	HSC106	Practical – II Food Science including HSC102 & HSC104	2 each semester	3	50
	HSC153	Allied Practical – I Computer Basics	2	3	50
III		Tamil/French/Hindi - Paper III	6	3	100
		English – Paper III	6	3	100
	HSC201	Human Nutrition	4	3	100
	HSC202	Dietetics – I	4	3	100
	HSC251	Allied – Nutritional Assessment & Surveillance	6	3	75
IV		Tamil/French/Hindi - Paper IV	6	3	100
		English – Paper IV	6	3	100
	HSC203	Nutritional Biochemistry	4	3	100
	HSC204	Dietetics – II	4	3	100
	HSC252	Allied – Microbiology	4	3	75
	HSC205	Practical – III Food Analysis	2 each semester	3	50
	HSC206	Practical – IV Dietetics including HSC202 & HSC204	2 each semester	3	50
	HSC253	Allied Practical – II Microbiology	2	3	50

Semester	Course Code	Title of the Course	Hours/week	Duration of Exam (hours)	Max. Marks
V	HSC301	Family Resource Management	6	3	100
	HSC302	Textiles	4	3	100
	HSC303	Human Development	6	3	100
	HSC304	Extension Education in Home Science	6	3	100
	HSC305	Entrepreneurship Development	6	3	100
VI	HSC306	Interior Decoration	4	3	100
	HSC307	Clothing and Construction	4	3	100
	HSC308	Family Dynamics	6	3	100
	HSC309	Programmes for Rural & Urban Development	6	3	100
	HSC310	Consumer Economics	6	3	100
	HSC311	Practical – V Interior Decoration	2	3	50
	HSC312	Practical – VI Textiles & Clothing and Construction	2 each semester	3	50
				Grand Total	3300

B.Sc. HOME SCIENCE

Semester I

Sl. No.	Course Code	Title of the Course	Hours/ week	Duration of Exam (hours)	Max. Marks
1.		Tamil/French/Hindi - Paper I	6	3	100
2.		English – Paper I	6	3	100
3.	HSC101	Human Physiology - I	4	3	100
4.	HSC102	Food Science - I	4	3	100
5.	HSC151	Allied - Ecology and Environment	6	3	75

UNIT – I**8 hours**

Cell – Structure and functions. Physiological properties of protoplasm. Levels of cellular organization. Organelles, tissues, organs and systems. Cell membrane transport. Tissues - Structure and functions of epithelial, connective, muscular and nervous tissue. Water and electrolyte balance - Distribution of water and electrolytes, requirements and sources, regulation of water balance, electrolyte balance, deficiency and excess.

UNIT – II**7 hours**

Accessory organs of digestion – Structure and functions – Teeth, Tongue, Salivary glands; Saliva – Composition and functions. Organs of Digestion – Oesophagus, Stomach, Small intestine and Large intestine – Structure and functions, Movements of the digestive system. Associated organs of digestion – Liver, Gall bladder, Pancreas (Digestive function) and Spleen. Disorders and Diseases – anorexia, Achlorhydria, Peptic ulcer, gastric ulcer and duodenal ulcer, gastritis, typhoid, jaundice.

UNIT- III**9 hours**

Blood – Formation, composition and functions, blood coagulation, blood groups and Rhesus factor, blood transfusion. Disorders – Anemia, Leukemia, hemophilia. Blood vessels – Types of Blood vessels. Disorders – Varicose veins, arteriosclerosis. Blood Pressure – Factors affecting blood pressure, hypertension, Pulse, Tachycardia and Bradycardia. Heart - Structure and functions, cardiac cycle, conduction system of the heart, ECG and its significance. Disorders – Angina pectoris, myocardial infarction. Lymphatic system – Lymph glands and its functions; Lymph - Composition and functions.

UNIT – IV**8 hours**

Organs of Excretion – Structure and functions of kidney, ureter, urinary bladder, urethra. Mechanism of urine formation, composition of urine, Micturition. Role of kidney in maintaining pH of blood. Acid-base balance. Disorders and Diseases – nocturnal enuresis, polyurea, diuresis, uremia, hematuria, nephritis.

UNIT – V**8 hours**

Upper respiratory passages – nasal cavities, pharynx, larynx and trachea. Lungs – Structure and functions, Lung capacity, Respiratory Quotient. Exchange and Transportation of respiratory gases. Role of haemoglobin and buffer systems. Disturbances in respiration – Apnea, Dyspnea, Hypoxia. Diseases – Bronchitis, Tuberculosis, Pneumonia, Asthma.

TEXTBOOKS

1. Meyer B J, Meij H S and Meyer A C., (2003): Human Physiology, AITBS Publishers and Distributors.
2. Wilson, K.J.W and Waugh, A. (1996): Ross and Wilson, Anatomy and Physiology in Health and Illness, 8th Edition, Churchill Livingstone.

REFERENCES

1. Ranganathan, T.S. (2004): A Textbook of Human Anatomy, Chand & Co. N. Delhi.
2. Jain, A.K., Textbook of Physiology, Vol. I and II, Avichal Publishing Co., New Delhi.
3. Chatterjee C.C. (1987): Human Physiology, Vol. I & II, Medical Allied Agency, Calcutta.
4. Guyton, A.G. and Hall, J.B. (1996): Text Book of Medical Physiology, (9th Edition, W.B. Sanders Company, Prism Books (Pvt.) Ltd., Bangalore.

UNIT – I**9 hours**

Definition, functions, food groups – Basic Four, Five and Seven, Classification of foods. Food guide pyramid. Objectives of cooking, preliminary preparations-advantages and disadvantages. Cooking methods-types-moist and dry heat method, combination-advantages and disadvantages, microwave, solar cooking.

UNIT – II**9 hours**

Structure, composition, nutritive value, processing and effects of processing of rice, wheat, maize, jowar, ragi. Gluten formation, gelatinization, dextrinisation and factors affecting it. Cereal cookery-fermented and unfermented products of cereals, millets, breakfast cereals.

UNIT – III**7 hours**

Pulses – nutritive value, processing and effects of processing, toxic constituents of pulses. Highlighting soyabeans. Nutritional implication of germination. Nuts and oilseeds - nutritive value of commonly used nuts, processing of oilseeds.

UNIT – IV**7 hours**

Fats and oils - types and nutritive value, processing, changes during storage. Hydrogenation, rancidity, smoking point, emulsification. Role of fat/oil in cookery.

UNIT – V**8 hours**

Vegetables –classification, selection, composition, pigments, enzymes, flavour compounds, nutritive value. Effect of cooking on colour, texture, flavour, appearance and nutritive value. Storage of vegetables. Microbes as alternate source of food - mushroom, spirulina. Fruits –classification, selection, composition, pigments, enzymes and nutritive value, post harvest changes and storage. Browning reactions- enzymatic and non-enzymatic.

TEXTBOOKS

1. Manay N.S., and Shadaksharaswamy, M (2001): Foods, facts and principles, New Age International Pvt. Ltd., publishers, New Delhi.
2. Mudambi S.R and Rajagopal V.M: Fundamentals of Foods and Nutrition, Wiley Eastern Ltd., New Delhi.
3. Srilakshmi B, (2005): Food Science, New Age International Publishers, New Delhi.

REFERENCES

1. Belitz H.D (2005): Food Chemistry, Springer Verlag.
2. Potter, N. and Hotchkiss, J.H. (1996): Food Sciences, Fifth edition, CBS.
3. Van Garde.J & Woodbush M. (1999): Food Preservation-Safety, Principles and Practice, Surabhi Publications, Jaipur.
4. Sood S and Khetar Paul N. (2002), Food Preservation, Agrotech Pub. Co., Udaipur.

UNIT - I**6 hours**

Ecology - Meaning, definition, concept of ecology and environment. Ecosystem - Meaning, concept, structure of ecosystem, biotic and abiotic components, types of ecosystem, an example of ecosystem. Food chain.

UNIT - II**11 hours**

Natural resources - Meaning, classification of resources. Energy - Major sources of energy-renewable and non-renewable, uncertainties with non-renewable energy sources, alternate energy sources and energy conservation measures. Water - Structure of water – Physical and chemical properties of water, hydrologic cycle. Soil and Land - Soil, origin of soil, soil profile, texture, structure, colour, physical and chemical properties of soil, classification of soil, major soil types of India. Air - Physio-chemical structure of atmosphere, air as an ecological factor. Forests - Types, utility of forests and forest resources, deforestation and its impact, forest conservation.

UNIT - III**6 hours**

Demography, population density, growth rate of population, population dispersion, emigration, immigration, migration, factors regulating human population.

UNIT - IV**11 hours**

Pollution - Definition, cause, ill effects of pollution on human health. Pollutants - Definition, types, sources, characteristics. Air Pollution- Kinds and sources of air pollutants, methods of detection and measurement of air pollution, ecology of air pollution, control of air pollution. Water Pollution - Types of water pollution, kinds and sources of water pollutants, ecology of water pollution - sewage pollution, industrial pollution, thermal pollution, silt pollution, estuarine and oceanic pollution, control of water pollution. Land Pollution - Pesticide and herbicide contamination, land waste management. Noise Pollution - Effects of noise pollution, noise control methods. Radioactive Pollution - Radiation ecology, radiation effects at the ecosystem level.

UNIT - V**6 hours**

Environmental Education - Meaning, need and objectives. Environmental Policies and Programmes. Agencies promoting environmental protection. Environmental legislations.

Related Experiences

1. Analysis of water
2. Chemical analysis – Estimation of hardness of water, Estimation of dissolved oxygen, estimation of dissolved carbon dioxide.
3. Microbial analysis – Study of microorganisms causing water borne diseases.
4. Visit to air quality monitoring unit of the Municipal Corporation.
5. Visit to water supply station and sewage plant to study the water supply system and waste water and sewage disposal.
6. Identify the food chain in our daily life.
7. Study the water cycle and water distribution on earth.
8. Study the cooling effects of evaporation.
9. Study the uses of solar energy.
10. Study tour - Students may be encouraged to go on a study tour to observe the ecologically significant habitats in its natural settings.

TEXT BOOKS

1. Kumar H. D., “General Ecology”, Vikas Publishing House.
2. Yadav. M (2004), Ecology, Discovery Publishing House, New Delhi.
3. Jadhav H, (2000), Environmental Protection and Laws, Himalaya Publications.

REFERENCES

1. Clarke G., Elements of Ecology, John Wiley and Sons, New York.
2. Sharma B.K and Kaur, An Introduction to Environmental Pollution, Good Publishers, Meerut.
3. Sharma B.K, (2001): Environmental Chemistry, Goel Publishers, Meerut
4. Subramanian V, (2002): A Textbook in Environmental Science, Naroba Publishing House, New Delhi.
5. Dash M.C., (2001): Fundamentals of Ecology, Tata Mc Graw Hill, New Delhi.

B.Sc. HOME SCIENCE

Semester II

Sl. No.	Course Code	Title of the Course	Hours/week	Duration of Exam (hours)	Max. Marks
1.		Tamil/French/Hindi - Paper II	6	3	100
2.		English – Paper II	6	3	100
3.	HSC103	Human Physiology - II	4	3	100
4.	HSC104	Food Science - II	4	3	100
5.	HSC152	Allied - Computer Basics	4	3	75
6.	HSC105	Practical – I Human Physiology including HSC101 & HSC103	2 each semester	3	50
7.	HSC106	Practical – II Food Science including HSC102 & HSC104	2 each semester	3	50
8.	HSC153	Allied Practical – I Computer Basics	2	3	50

UNIT – I**8 hours**

Central nervous system - Brain and spinal cord – structure and function. Cerebrospinal fluid. Peripheral nervous system - cranial and spinal nerves. Autonomic nervous system – parasympathetic and sympathetic system – conduction of nerve impulse, synapse, reflex arc, reflex action. Diseases and Disorders - insomnia, alzheimer’s disease, schizophrenia, hydrocephaly, meningitis.

UNIT – II**6 hours**

Eye – Structure and functions. Physiology of vision. Defects in vision – myopia and hypermetropia, astigmatism. Diseases – Conjunctivitis, trachoma, glaucoma, cataract. Ear – Structure and functions. Deafness, vertigo. Nose – Structure and functions. Sinusitis. Skin – Structure and functions. Dermatitis and burns.

UNIT – III**10 hours**

Hormones – Endocrine glands - Pituitary, Thyroid, Parathyroid, Pancreas (endocrine function), Adrenal – Their structure and functions. Hormones of reproduction. Disorders of over and under secretion.

UNIT – IV**10 hours**

Male reproductive system – Structure and functions. Spermatogenesis. Female reproductive system – Structure and functions. Oogenesis. Menstrual cycle, Puberty, Menopause. Fertilization, Development of fertilized ovum (Brief account) – Placenta and its functions – Parturition. Physiology of lactation – Hormonal control in lactation. Abortion, Ectopic pregnancy, multiple pregnancy, artificial insemination, test tube baby - IVF,ETT & GIFT.

UNIT – V**6 hours**

Skeletal system – Structure of bone, Functions of the skeletal system. Joints – Types of joints. Muscular system – Functions of the muscles. Muscular contraction. Diseases and disorders - arthritis, osteoporosis, tetany, muscle fatigue, rigor mortis, myasthenia gravis.

TEXTBOOKS

1. Meyer B J, Meij H S and Meyer A C., (2003): Human Physiology, AITBS Publishers and Distributors.
2. Wilson, K.J.W and Waugh, A. (1996): Ross and Wilson, Anatomy and Physiology in Health and Illness, 8th Edition, Churchill Livingstone.

REFERENCES

1. Ranganathan, T.S. (2004): A Textbook of Human Anatomy, Chand & Co. N. Delhi.
2. Jain, A.K.: Textbook of Physiology, Vol. I and II. Avichal Publishing Co., New Delhi.
3. Chatterjee C.C. (1987): Human Physiology, Vol. I & II, Medical Allied Agency, Calcutta.
4. Guyton, A.G. and Hall, J.B. (1996): Text Book of Medical Physiology, (9th Edition, W.B. Sanders Company, Prism Books (Pvt.) Ltd., Bangalore.

UNIT – I**6 hours**

Composition, properties, nutritive value and processing of milk. Effect of heat, acid, enzymes and salt on milk. Milk Products - Fermented and unfermented. Milk cookery.

UNIT - II**10 hours**

Meat - structure, composition and nutritive value. Post- mortem changes, ageing, tenderising and curing of meat. Meat cookery - changes during cooking. Poultry - classification, composition and nutritive value. Eggs - structure, composition, nutritive value. Evaluation of quality. Egg cookery. Fish - classification, composition, nutritive value. Selection, factors affecting spoilage. Fish cookery.

UNIT – III**8 hours**

Spices and Condiments – types, uses in Indian cookery. Sugar – properties, types, sugar related products, artificial sweeteners. Sugar cookery.

UNIT – IV:**8 hours**

Preservation - principles and methods of food preservation. Food Additives - types and uses. Food Adulteration - definition, types, intentional and incidental adulterants. Food laws and Standards.

UNIT – V**8 hours**

Organic foods - organic farming, advantages and limitations, certification. Food technology - fortification and enrichment, nutraceuticals, space foods.

TEXTBOOKS

1. Manay N.S., and Shadaksharaswamy, M (2001): Foods, facts and principles, New Age International Pvt. Ltd., publishers, New Delhi.
2. Mudambi S.R and Rajagopal V.M: Fundamentals of Foods and Nutrition, Wiley Eastern Ltd., New Delhi.
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1. Belitz H.D (2005): Food Chemistry, Springer Verlag.
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4. Sood S and Khetar Paul N. (2002), Food Preservation, Agrotech Pub. Co., Udaipur.

UNIT – I**8 hours**

Overview about computers, components of a computer, input/output devices, secondary storage devices. Number systems - decimal, binary, octal, hexadecimal, representation of information - BCD, EBCDIC and ASCII. Representation of data - files, records and folders, file organization and access, security and safety of data. Introduction to operating systems, introduction to MS-Windows.

UNIT – II**7 hours**

Starting MS Word, creating and formatting a document, changing fonts and font size. Table creation and operations, auto correct, auto text, spell check, thesaurus, Word art, inserting objects, mail merger, letter, label, envelope, page set-up, page preview, printing a document.

UNIT – III**9 hours**

Starting excel, work sheet, cell, inserting data into rows/columns, alignment, text-wrapping, sorting data, autosum. Use of functions, referencing formula cells in other-formulae, naming cells and ranges, goal seeks. Generating graphs, integrating worksheet data and charts with word. Creating hyperlink to a word document, page set-up, print preview, printing worksheets.

UNIT – IV**10 hours**

Starting MS Powerpoint, autowizard, creating a presentation using auto content wizard. Blank presentation, creating, saving and printing a presentation, adding a slide to a presentation, navigating through a presentation. Slide sorter, slide show and editing slides. Using clipart, word art gallery, adding transitions and animation effects, setting timings for slide-show. Preparing note pages, preparing audience hand-outs, printing presentation documents.

UNIT – V**6 hours**

Genesis and use of internet, software and hardware requirements for internet. Accessing the internet, web page, using a search engine, accessing the internet from MS Office applications.

TEXTBOOKS

1. Subramanian, S, Introduction to Computers.
2. Norton Peter (2007): Introduction to computer, Tata Mc Graw Hill Publishing Co Ltd., New Delhi.
3. Nagpal, D, Mastering Microsoft Office 2000.

REFERENCES

1. Saunders. H Donald, (1985): Computer Today, II edition, Tata Mc Graw Hill.
2. Leon A And Leon M, (1999): Intorduction to Computers, Leon Tech. World, Chennai.
3. AckuManni E, (2005): Learning to Use the Internet, BPB Publications, N. Delhi.

1. Microscopic examination of prepared slides - Fresh mount of blood, blood smear and stained blood smear.
2. Estimation of Haemoglobin by Sahli's Method.
3. Total Count – RBC, WBC, Differential Count.
4. Determination of Blood group and RH typing.
5. Determination of coagulation time.
6. Urine analysis for albumin, sugar and ketone bodies.
7. Recording blood pressure using sphygmomanometer, effect of exercise on pulse rate, and blood pressure.

1. Familiarization with different kitchen gadgets.
2. Methods of measuring dry ingredients and liquids.
3. Cereal cookery
 - a. Methods of combining flour with liquid eg. Powdered cereal coarse(eg. Phirnee, broken wheat uppuma) and fine (eg. Ragi porridge, wheat halwa).
 - b. Cereal Grains – different methods of cooking rice – straining, absorption – cooking over slow heat, pressure cooking, addition of fat, microwave and electric rice cooker.
 - c. Recipes with rice.
4. Pulse Cookery
 - a. Different methods of cooking pulses – hard water, soft water, soaking, addition of soda bicarbonate, addition of raw papaya, pressure cooking eg. Any whole gram and any dhal.
 - b. Recipes with pulses.
5. Vegetable Cookery
 - a. Different methods of cooking vegetables – effect of shredding, dicing, acid and alkali, pressure cooking, steaming with and without lid. Eg. Potato, beetroot, carrot and greens.
 - b. Recipes with Vegetables
6. Fruits – Prevention of browning on fruits. Preparation of selected common recipes
7. Milk cookery - Experimental milk cookery. Preparation of selected common recipes.
8. Egg cookery - Experimental cookery on eggs-boiled eggs, poached eggs, omlettes and custards. Preparation of selected common recipes.
9. Sugar cookery -Stages of sugar cookery – caramelisation, crystallisation.. Preparation of selected common recipes.
10. Fats and Oils – Smoking point, bread cube test. Preparation of selected common recipes - shallow, deep fat frying. Preparation of mayonnaise.
11. Preservation of foods – Pectin content of fruits. Preparation of jams, jellies, vathals, vadams and pickles.

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1. Introduction to text editing.
 2. Word processing.
 3. Managing data through spreadsheet using MS Excel.
 4. Creating PowerPoint presentations using MS PowerPoint

Semester III

Sl. No.	Course Code	Title of the Course	Hours/ week	Duration of Exam (hours)	Max. Marks
1.		Tamil/French/Hindi - Paper III	6	3	100
2.		English – Paper III	6	3	100
3.	HSC201	Human Nutrition	4	3	100
4.	HSC202	Dietetics – I	4	3	100
5.	HSC251	Allied – Nutritional Assessment & Surveillance	6	3	75

UNIT – I**8 hours**

Definition, concepts and terminologies in Nutrition. Nutrition in relation to health. Minimal Nutritional Requirements and RDA- Formulation of RDA and Dietary Guidelines- Reference Man and Reference women. Carbohydrates - definition and composition, structure and properties, classification, functions, digestion, absorption and metabolism. Regulation of blood glucose level. Glycemic Index of foods and its uses. ICMR Requirements and food sources. Dietary fibre-nutritional significance.

UNIT – II**8 hours**

Proteins - Definition and composition, structure and properties. classification, functions, digestion, absorption and metabolism. Assessment of protein quality (BV, PER, NPU), factors affecting protein bio-availability, anti-nutritional factors. Essential and non-essential amino acids. ICMR Requirements and food sources. Deficiency and excess.

UNIT – III**8 hours**

Lipids - Definition and composition, structure and properties, classification, functions, digestion, absorption and metabolism. Fatty acids – types, nutritional significance of saturated fatty acids, Monounsaturated fatty acids, polyunsaturated fatty acids, omega 3 fatty acids. ICMR Requirements and food sources. Deficiency and excess.

UNIT – IV**8 hours**

Energy - Definition, Units of energy, determination of energy value of foods using Bomb calorimeter, gross calorific value, physiological energy value of foods, relation between oxygen used and calorific value. Determination of energy requirements – direct calorimetry. Relation between respiratory Quotient (RQ) and energy output. Specific Dynamic Action (SDA), indirect calorimetry. Basal metabolism- definition, determination of energy metabolism during work, energy requirements of an adult for varying degrees of physical activity, energy requirements for different age groups. Food sources. Deficiency and excess.

UNIT – V**8 hours**

Vitamins - Definition and classification- Fat soluble vitamins-A,D,E and K, Water soluble vitamins- vitamin C, Pantothenic acid, B6, B12, niacin, riboflavin, biotin, folic acid.- Functions, absorption, bio-availability and transport. ICMR Requirements and food sources. Deficiency and excess.
Minerals - Definition and classification- Macro minerals- Calcium, Phosphorous, sodium, potassium, Micro minerals-Iron, Zinc, iodine, fluorine - functions, absorption, transport. ICMR Requirements and food sources. Deficiency and excess.

TEXTBOOKS

1. Bamji M.S., Rao P.N., and Reddy V., (1996): Textbook of Human Nutrition, Oxford & IBH Pub. Co. New Delhi.
2. Shubangini A Joshi, Nutrition and Dietetics, Tata Mc Graw Hill Pub. Co. Ltd., New Delhi.
3. Srilakshmi. B, (2005): Nutrition Science, V Edition, New Age International (P) Ltd, Publishers, Chennai.

REFERENCES

1. Sareen, S, Jack-James (2005): Advanced Nutrition in Human Metabolism, 4th Edition, Thomson Wordsworth Publication, USA.
2. Mahan,L.K. and Escott-Stump,S.(2000) Krause's Food, Nutrition and Diet Therapy, 10th Ed.W.B.Saunders Company, London.
3. Williams S.R. (1993): Nutrition and Diet Therapy, 7th Ed. Times Mirror / Mosby College Publishing, St. Louis.
4. Robinson, C.H., Lawler, M.R,Chenoweth, W,L, and Garwick A,E(1986) Normal and Therapeutic Nutrition, 17th Ed., Macmillan Publishing Co.
5. Trueman P, (2007): Nutritional Biochemistry, MJP Publishers, Chennai

UNIT – I**9 hours**

Basic principles of menu and meal planning. Factors to be considered in menu planning. Pregnancy - Physiological stages of pregnancy, food and nutritional requirements (ICMR), dietary guidelines, diet plan, complications of pregnancy – gestational diabetes, hyperemesis gravidarum, Pregnancy Induced Hypertension (PIH), toxemia. Physiological cost of pregnancy. Lactation - Physiology of lactation, food and nutritional requirements (ICMR), dietary guidelines, significance of lactogogues, diet plan, problems during lactation.

UNIT – II**8 hours**

Infancy - Growth and development, food and nutritional requirements (ICMR). Breast feeding, artificial feeding, infant formula, supplementary foods, weaning. Feeding problems. Nutritional requirements for preterm.

UNIT – III**9 hours**

Preschoolers - Growth and development, food and nutritional requirements (ICMR), dietary guidelines, diet plan. Nutrition related problems – Protein Energy Malnutrition, Vitamin A deficiency. School children - Growth and development, food and nutritional requirements, dietary guidelines, diet plan, importance of snacks, packed lunch. Nutrition related problems – underweight, overweight, obesity.

UNIT – IV**8 hours**

Adolescence - Growth and development, food and nutritional requirements (ICMR), dietary guidelines, diet plan. Food choices – Eating habits and the influencing factors. Adulthood – Classification of activities, food and nutritional requirements (ICMR), dietary guidelines, diet plan. Nutrition related problems - Anaemia, obesity.

UNIT - V**6 hours**

Geriatric nutrition – Food and nutritional requirements (ICMR), dietary guidelines, diet plan, nutritional related problems-osteoporosis, osteomalacia, constipation. Factors affecting food intake, nutritional supplementation.

TEXTBOOKS

1. Antia F.P, Clinical Dietetics and Nutrition, Oxford University Press.
2. Shubangini A Joshi, (1998): Nutrition and Dietetics, Tata Mc Graw Hill Pub. Co. Ltd., New Delhi.
3. National Institute of Nutrition, (2005): Dietary Guidelines for Indians – A Manual, Hyderabad.

REFERENCES

1. Mahan, L.K. and Escott-Stump, S. (2000) Krause's Food, Nutrition and Diet Therapy, 10th Ed.W.B.Saunders Company, London.
2. Williams S.R. (1993): Nutrition and Diet Therapy, 7th Ed. Times Mirror / Mosby College Publishing, St. Louis.
3. Shills, M.E, Oslon, J.A, Shike, M and Ross, A.C. (1999): Modern Nutrition in Health and Disease, 9th Edition.
4. Srilakshmi. B, (2005): Dietetics, V Edition, New Age International (P) Ltd, Publishers, Chennai.

UNIT – I**8 hours**

Nutritional assessment and surveillance - Meaning, need, objectives and importance. Community, regional, national and international surveillance systems. Rapid assessment procedures - Need, importance, techniques and interpretation. Sources of secondary health data - Sources of relevant vital health statistics, importance of infant, child, maternal mortality rates, epidemiology of nutrition related diseases.

UNIT - II**8 hours**

Anthropometry - Need, importance, standards for reference. Techniques of measuring height, weight, head circumference, chest circumference, mid arm circumference, skin fold thickness. Calculation of Waist to Hip Ratio, BMI. Interpretation of the measurements. Use of growth charts for various age groups.

UNIT - III**8 hours**

Biochemical methods - Biophysical or Radiological assessment, functional assessment, laboratory and biochemical assessment. Biochemical values in major diseases. Clinical assessment - Need, importance, identifying signs of deficiency diseases, interpretation of the clinical signs.

UNIT - IV**8 hours**

Diet surveys - Need, importance, methods, interpretation, concept of consumption unit, verifying the adequacy of the diet with respect to RDA, concept of family food security.

UNIT - V**8 hours**

Dietitian -Classification, responsibilities, code of ethics. Nutritional care process, medical history assessment, assessment of patient needs. Dietary counseling- different methods, handling the patient and the patient's family during counseling, principles of family counseling, evaluation of the effectiveness of counseling, education of the patient and follow up. Indian Dietetic Association.

Related Experiences

1. Visit to Primary Health Centre, Hospital, Public Distribution Centr.
2. Socio- economic Survey
3. Dietary recall.
4. Dietary weighment.
5. Anthropometric survey

TEXTBOOKS

1. Swaminathan, Advanced Textbook of Food and Nutriton, Vol. I and II.
2. Srilakshmi. B, (2005): Dietetics, V Edition, New Age International (P) Ltd, Publishers, Chennai.

REFERENCES

1. Jelliffe D, (1996): Assessment of Nutritional Status on the Community – WHO Monograph, Series No.53, Geneva.
2. Gupta P and Thakhar R, (2003): Nutritional Disorder and Community Health, Pointer Publishers, Jaipur.
3. Park K, (2005): Park’s Textbook of Preventive and Social Medicine, Banarsidas Bhanot Pub., Jabalpur.

B.Sc. HOME SCIENCE

Semester IV

Sl. No.	Course Code	Title of the Course	Hours/ week	Duration of Exam (hours)	Max. Marks
1.		Tamil/French/Hindi - Paper IV	6	3	100
2.		English – Paper IV	6	3	100
3.	HSC203	Nutritional Biochemistry	4	3	100
4.	HSC204	Dietetics – II	4	3	100
5.	HSC252	Allied – Microbiology	4	3	75
6.	HSC205	Practical – III Food Analysis	2 each semester	3	50
7.	HSC206	Practical – IV Dietetics including HSC202 & HSC204	2 each semester	3	50
8.	HSC253	Allied Practical – II Microbiology	2	3	50

HSC203

NUTRITIONAL BIOCHEMISTRY

100 marks

UNIT - I**8 hours**

Biological oxidation, Electron transport mechanism, dehydrogenases, cytochromes, oxidative phosphorylation, energy conservation, high energy phosphate bond. Storage and release of high energy phosphate, myokinase reaction. Carbohydrate metabolism - Glycolysis, TCA cycle, glycogenesis, glycogenolysis, gluconeogenesis, HMP shunt, conversion of CHO into fat.

UNIT - II**8 hours**

Lipid metabolism – Transport of fat, biosynthesis, metabolism- oxidation of triacyl glycerol, beta oxidation of fatty acids, cholesterol. Regulation of lipid metabolism. Ketogenesis.. Free radicals and antioxidants-definition, role in health and disease. Essential Fatty Acids.

UNIT - III**8 hours**

Protein metabolism - Dynamic state of protein, synthesis of urea, urea cycle, transamination, deamination, transmethylation, decarboxylation, Gamma Amino Butyric Acid (GABA).

UNIT - IV**8 hours**

Errors of carbohydrate metabolism - Glycosuria, fructosuria, galactosemia, glycogen storage disease, lactose intolerance. Errors of protein metabolism - Phenyl ketonuria, alcaptonuria, amino aciduria, albinism, maple syrup disease.Errors of fat metabolism - Hypolipoproteinemia, hyperlipoproteinemia, gaucher's disease.

UNIT - V**8 hours**

Significance of enzymes in food metabolism. Classification, Chemical nature – Enzyme inhibition, enzyme pattern in disease. Hormones – Classification, synthesis, regulatory functions and mechanism of hormone action.

TEXTBOOKS

1. Satyanarayana U, (2003): Essentials of Biochemistry, Books and Allied (P) Ltd, Kolkata.
2. Ambika Shanmugam (1986): Fundamentals of Biochemistry for Medical Student , 7th edition, New Delhi.

REFERENCES

1. Devlin, T M., (1986): Textbook of Biochemistry and Clinical corrections, II Edn, John Wiley and sons.
2. Veerakumari L, (2007): Biochemistry, MPJ Publishers, Chennai.
3. Deb.A.C. (1992): Fundamentals of Bio chemistry, 5th edition, New Central Book Agency (P) Ltd.
4. Ramakrishnan S, Prassanan K.G, and R.Rajan, Text book of Medical Bio chemistry, Second edition, orient Longman limited.

UNIT – I**8 hours**

Therapeutic adaptation of normal diets, principles and classification of therapeutic diets. Routine hospital diets - regular diet, light diet, soft diet, fluid diet. Enteral feeding – naso-gastric, naso-jejunal, natural and blenderised food, parenteral feeding-central and peripheral-elemental diet. Nutrient requirements, modifications of diet and planning menus during surgical conditions - pre-operative and post operative conditions.

UNIT - II**6 hours**

Cardiovascular diseases – Atherosclerosis, hypertension, hypercholesterolemia, hypertriglyceridemia - Prevalence, pathogenesis, risk factors. Nutrient requirements, modifications of diet and planning menus - high fiber, low fat, sodium restricted diet. Functional foods.

UNIT - III**10 hours**

GI system – Etiologic factors, symptoms, diagnostic tests and dietary treatment for Esophagitis and hiatus hernia, Diarrhoea and Constipation – high and low fiber diet, Gastritis, Peptic Ulcer and Ulcerative colitis, Malabsorption Syndrome –Celiac Sprue – Gluten restricted diet, Steatorrhoea- MCT restricted diet.

Liver and gall bladder – Etiological factors, symptoms, diagnostic tests and dietary treatment for Viral Hepatitis, Cirrhosis of the liver and liver encephalopathy – high carbohydrate diet. Cholelithiasis and cholecystitis – low fat diet

Pancreas – Diabetes Mellitus - Classification, Etiological factors, symptoms, diagnostic tests, metabolic changes in the body, Insulin and oral hypoglycemic drugs. Dietary Modifications with and without insulin, Complications of Diabetes, Food Exchange List. Use of Glycemic Index.

UNIT - IV**8 hours**

Diseases of the kidney - Etiological factors, symptoms, diagnostic tests and dietary treatment for Acute and chronic Glomerulonephritis. - Low Sodium and low potassium diet. Nephrotic Syndrome. Acute and chronic Renal Failure- uremia. Nephrolithiasis and urolithiasis. Kidney transplantation and Dialysis. Use of Sodium and Potassium exchange lists.

UNIT - V**8 hours**

Fever and infections – Etiology, symptoms, diagnostic tests and dietary treatment – High Protein diet Surgical conditions – Pre-Operative and Post Operative conditions. Burns and Trauma – complications and dietary treatment.

Diet in Allergy - Definition, Symptoms, diagnostic tests and dietary management in allergy. Elimination diet and desensitization. Nutrient requirements, modifications of diet, planning menus during fever and infections.

Risk factors, nutrient requirements, modifications of diet and planning menus in Cancer and AIDS.

TEXTBOOKS

1. Shubangini A Joshi, (1998): Nutrition and Dietetics, Tata Mc Graw Hill Pub. Co. Ltd., New Delhi.
2. National Institute of Nutrition, (2005): Dietary Guidelines for Indians – A Manual, Hyderabad.
3. Antia F.P, Clinical Dietetics and Nutrition, Oxford University Press.

REFERENCES

1. Mahan, L.K. and Escott-Stump, S. (2000) Krause's Food, Nutrition and Diet Therapy, 10th Ed. W.B. Saunders Company, London.
2. Williams S.R. (1993): Nutrition and Diet Therapy, 7th Ed. Times Mirror / Mosby College Publishing, St. Louis.
3. Shills, M.E, Oslon, J.A, Shike, M and Ross, A.C. (1999): Modern Nutrition in Health and Disease, 9th Edition.
4. Srilakshmi. B, (2005): Dietetics, V Edition, New Age International (P) Ltd, Publishers, Chennai.

UNIT - I**7 hours**

History and Scope of microbiology. Classification of microorganisms – Bacteria, Fungi, Virus, Algae, Protozoa.

Microbial culture – continuous culture and synchronous culture, composition of culture media- solid and liquid media, chemically defined media, complex and differential media. Effects of environmental factors on growth of microorganism - pH, aw, redox potential, temperature, oxygen, time and nutrients present in the substrate.

UNIT - II**8 hours**

Major groups of bacteria - Archaeobacteria, Actinomycetes, Chemoautotrophs, Eubacteria, Pseudomonas, cyanobacteria, Rickettsias, chlamydiae and spirochetes. Bacterial cell- structure and functions of cellular components – cell wall composition of Gram positive and Gram negative bacteria. Sub-cellular organizations – flagella, capsule and spores. Growth curve of Bacteria.

UNIT – III**8 hours**

Classification, morphology and characteristics of Virus, Fungi and Protozoa – structure of DNA and RNA viruses, viral replication. Bacteriophages – Lysogeny and Lytic cycle. Virus like agents – satellites, viroids and prions.

Classification, morphology and characteristics of Fungi - mucor, rhizopus, aspergillus, penicillium.

Yeasts - saccharomyces. Algae - chlamydomonas, spirogyra.

Classification of Protozoa - entamoeba histolytica, paramecium, plasmodium. Life cycle of malarial and filarial parasites.

UNIT - IV**8 hours**

Spoilage and contamination of foods, sources of infection of foods by pathogenic organisms, food poisoning and food borne infection. Sources of contamination and spoilage of - Cereal and cereal products like bread, flour and bakery products; Sugar and sugar products like honey, maple syrup and candies; Vegetables and fruits; Meat products like sausage, bacon and ham, fish, egg and poultry; Milk and its products; Canned foods.

UNIT – V**8 hours**

Bacterial food borne diseases – Staphylococcal intoxication, Botulism, Salmonellosis, Shigellosis, E.Coli Diarrhoea, Clostridium Perfringens gastroenteritis, Bacillus cereus gastroenteritis. Food borne Viral pathogens – Rotavirus, Adenovirus, Hepatitis A virus. Parasitic food borne diseases – Amoebiasis, Sarcocystosis, Cysticercosis, Trichinosis. Mycotoxins – Aflatoxicosis, Mycotoxicosis, Ergotism.

TEXTBOOKS

1. Joshua A K., (2000): Microbiology, Popular Book Depot, Chennai.
2. Ananthanarayanan R and Panicker C K J., Textbook of Microbiology, Orient Longman, Chennai.

REFERENCES

1. Frazier W C., (2002): Food Microbiology, Mc Graw Hill Book Co., 6th edition, N.Delhi.
2. Pelezar, M.I and Reid, R.D, (1993): Microbiology, 5th edition, McGRaw Hill Book Company, New York.
- 3 Jay, James, M (2000): Modern Food Microbiology, 2nd edition, CBS Publisher.
4. Adams, M.R. and Moses M.G. (1995): Food Microbiology. 1st edition, New Age International (P) Ltd.

Qualitative Analysis:

1. Estimation of calorific value of food.
2. Estimation of moisture content.
3. Estimation of ash content.
4. Preparation of buffers (acidic, neutral and alkaline) and determination of pH.
5. Qualitative identification of carbohydrates – glucose, fructose, galactose, sucrose, maltose, lactose.
6. Preparation of Osazones and their identification.
7. Qualitative identification of amino acids – histidine, tyrosine, tryptophan, cysteine, arginine.
8. Qualitative identification of lipids – solubility, saponification, acrolein test, Salkowski test, Lieberman-Burchard test.
9. Qualitative tests for minerals.

Quantitative Analysis:

1. Quantitative estimation of glucose.
2. Isolation of starch from potato.
3. Estimation of protein of Bengal Gram flour (Micro-Kjeldahl method)
4. Determination of acid number in edible oil.
5. Determination of iodine number in edible oil.
6. Determination of saponification number in edible oil.
7. Estimation of ascorbic acid in citrus fruits.
8. Estimation of milk calcium- processed and unprocessed.
9. Estimation of Phosphorous.
10. Estimation of Iron.

1. Planning and preparation of diet for adult men and women for different activities - sedentary, moderate, heavy worker and income groups.
2. Planning and preparation of diet for a pregnant and a nursing mother for different income groups.
3. Planning and preparation of diet for a pre school child, packed lunch for different income groups.
4. Planning and preparation of diet for an adolescent for different income groups.
5. Planning and preparation of diet for an obese adult for different income groups.
6. Planning and preparation of diet for the old for different income groups.
7. Planning and preparing diets for cardiovascular diseases - Atherosclerosis and hypertension
8. Planning and preparing diets for Gastro-intestinal diseases - Peptic ulcer and constipation
9. Planning and preparing diets for Liver diseases - Viral hepatitis and cirrhosis
10. Planning and preparing diets for pancreatic disease - Diabetes mellitus.
11. Planning and preparing diets for Kidney diseases – nephritis and nephrosis.
12. Planning and preparing diets for Typhoid Fever.
13. Visit to a dietary department of a hospital.

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1. Microscopic identification of microorganisms (prepared slides).
 2. Preparation of culture media and sterilization techniques.
 3. Isolation of pure culture – Streak plate method, Serial dilution method.
 4. Hanging drop preparation for motility of bacteria.
 5. Staining of bacteria – simple staining using Methyl violet, methylene blue, carbol fuschion.
 6. Staining of Bacteria- gram staining.
 7. Microbiology of air.
 8. Microbiology of water.
 9. Microbiology of soil.
 10. Microbiological analysis of processed food.
 11. Microbiological analysis of unprocessed food.
 12. Testing quality of milk – Detection of Acidity (Clot on Boiling test, Alcohol test), Direct microscopic count, Standard plate count, Methylene Blue Reductase test, Phosphatase test, Turbidity test.

B.Sc. HOME SCIENCE

Semester V

Sl. No.	Course Code	Title of the Course	Hours/ week	Duration of Exam (hours)	Max. Marks
1.	HSC301	Family Resource Management	6	3	100
2.	HSC302	Textiles	4	3	100
3.	HSC303	Human Development	6	3	100
4.	HSC304	Extension Education in Home Science	6	3	100
5.	HSC305	Entrepreneurship Development	6	3	100

HSC301

FAMILY RESOURCE MANAGEMENT

100 marks

UNIT – I**8 hours**

Meaning and definition of home management. Management process - planning, controlling and evaluation, factors influencing home management. Qualities of a good manager.

UNIT – II**8 hours**

Values - Concept, characteristics, classification and factors influencing values. Goals - Concept, types, factors influencing goals. Standards - Concept, classification of standards. Interrelatedness of values, goals and standards. Resources – Types- Human and material, Characteristics of resources.

UNIT – III**10 hours**

Money - definition of family income, types, family budget - definition, importance, types, steps in making budget, factors affecting the budget, advantages of budgeting. Engel's laws of consumption. Standard of living- Types, factors affecting standard of living, causes for low standard of living. Account keeping – importance, types of account systems, methods of handling money, family financial records.

Time - Time plans, steps in making time plans, tools in time management, time norm, work unit/work load, peak load, work curves, rest periods, time schedules. Time management process – planning, controlling and evaluating.

Energy – Energy requirements for household activities, planning, controlling and evaluating energy management, concept of fatigue, types of fatigue, avoidance of fatigue.

UNIT – IV**7 hours**

Importance, process of decision making, types of decisions, role of decision making in management. Resolving conflicts.

UNIT – V**7 hours**

Work simplification - definition, importance, techniques - process chart, operation chart, Mundel's classes of changes.

Related Experiences:

1. Preparation of time schedule
2. Market Survey – wholesale and retail rates, prices of different packaged goods.

TEXTBOOKS

1. Varghese, M.A., Ogale, N.N. and Srinivasan, K. (1996): Home Management, New age International (P) Ltd., Publishing N.Delhi.
2. Bharathi, V.V., and Jacintha, M. (1994): Family Resource Management, Discovering publishing House, N. Delhi.

REFERENCES

1. Kaur H and Macneil, C., (1994): Theory and Practice of Home Management, Surjeet Publications, Delhi.
2. Venkata Ratnam C.S and Srivatsava B, (1999): Personnel Management and Human Resources, New Delhi, Tata McGraw Hill Co.
3. Aswathappa K, (1997): Human Resource and Personnel Management, Tata McGraw Hill Publishing Co., New Delhi.

UNIT - I**8 hours**

Classification of fibres - Natural fibres - cotton, linen, silk, wool; Manmade fibres - rayon, nylon, polyester, acrylic - Its manufacture, properties and importance to consumers.

UNIT – II**8 hours**

Yarn making - mechanical spinning, chemical spinning, yarn numbering and yarn twist. Types of yarn - simple, complex, novelty and textured.

UNIT – III**8 hours**

Weaving - plain and novelty weaves.
Knitting, knotting and braiding.
Felts and bonded fibre fabrics.

UNIT – IV**8 hours**

Basic finishes – bleaching, tentering, wringing, sizing, mercerizing and calendaring.
Special finishes - special calendaring, napping, flocking, shrinkage control, water repellency, wrinkle resistance, permanent press.

UNIT – V**8 hours**

Classification of dyes - Natural and Chemical dyes.
Methods of dyeing - Stock, yarn, piece, top, cross.
Methods of printing - Block, roller, screen, resist, discharge printing, Batik, tie and dye.

TEXTBOOKS

1. Vidyasagar, P.V., (1998): Hand Book of Textiles, Mittal Publications, N. Delhi.
2. Agarwal.M., (2005): Home Science & Textiles, ABD Publishers, Jaipur.

REFERENCES

1. Yadav. S, (1997): Textbook of Textile & Laundry, Anmol Publications, Pvt Ltd, N.Delhi.
2. Grosick Z, (1988): Watson's Textile Design and Colour, Universal Pub. Corporation.

UNIT – I**7 hours**

Planning and preparing for parenthood. Conception – test tube baby, signs and symptoms of pregnancy, prenatal development – stages of development, factors affecting development, birth process – signs of labour, stages, birth injuries, post natal care – adjustment of the newborn.

UNIT – II**8 hours**

Infancy - Development during infancy- Physical, social, emotional, cognitive and language. Infant care and hygiene - feeding, weaning, complementary feeding, immunization, habit formation. Training - maternal role in training. Minor ailments and prevention. Needs for children – physiological and psychological. Role of child care centres.

UNIT – III**9 hours**

Early childhood/preschool [1-5 years] - Physical, motor, emotional, social and intellectual development. Child and family member relationship. Habit formation. Behaviour problems - causes, prevention and treatment.

Preschool education – importance and objectives. Programme of nursery school, values of equipment and their relation. Personal and professional requirement of a nursery school teacher. Play - definition, types, theories, values, characteristics and play hazards.

Learning - definition, types - trial and error, insight, conditioning - classical and operant, implications and limitations.

Creativity - meaning, values, development of creativity, expressions of creativity, hazards to creativity.

UNIT – IV**8 hours**

Late childhood/school going [6-12 years] - Physical, social, emotional, intellectual, language and moral development. Habit formation. Behavioural problems and prevention.

Special children - definition, classification, causes, consequences and rehabilitation measures.

UNIT – V**8 hours**

Adolescence Physical and psychological changes, emotional, moral and social development, sex education. Problems of adolescence, delinquency - causes, prevention and rehabilitation, role of parents, peers and society. Factors influencing personality development.

Related Experiences

1. Child's first reaction to nursery school.
2. Observations in the following areas of development - physical, social, emotional and language development of preschool children.
3. Study on play interest of children and types of play materials available in a preschool, preparation of play materials.
4. Study on behaviour problems of children
5. Participation in nursery school, planning, carrying out and evaluating the programme.
6. Sociometric study of adolescents.

TEXTBOOKS

1. Rajammal P. Devadas and Jaya N.Muthu, (1996): A text book of Child Development, Macmillan, N.Delhi.
2. Hurlock E.B., (1972): Child development, McGraw Hill Book Company.
3. Suriakanthi A., (1997): Child Development - An Introduction, Kavitha Publishers.

REFERENCES

1. Hurlock,E.B., (1995): Developmental Psychology-A life span approach, 5th Edition, McGraw Hill Book Co., New York.
2. Nanda V.K., (1998): Principles of Child Development, Anmol Publications Pvt. Ltd., New Delhi.
3. Berk L.E., (2004): Child Development, Pearson Longman New Delhi.

UNIT – I**8 hours**

Sociology - Meaning, scope, importance, characteristics of rural society. Rural social groups-primary and secondary groups, formal and informal groups, temporary and permanent groups, reference groups, cultural interest groups. Informal rural institutions - family, caste. Formal rural institutions -village school, Panchayat Raj, service co-operatives, Mahila Mandals, youth club. Village leaders - Leadership – styles in leadership. Role and qualities of a leader. Selection of leaders, advantages and limitations of using local leaders.

UNIT – II**8 hours**

Education - meaning, types, difference between formal and non-formal education. Extension education - meaning, definition, concept, need for extension education, philosophy, principles, objectives and functions. Extension education process. Role and qualities of an extension worker. Functionaries in extension work – Block Development Officer (BDO), Extension Officer (EO), Village Level Worker (VLW). Adoption-diffusion process.

UNIT – III**8 hours**

Teaching - factors contributing to good teaching, steps in extension teaching.
Learning - principles of learning, elements of learning situation, learning experiences.

UNIT – IV**8 hours**

Communication – meaning, definition, functions, elements of communication, models of communication, problems of communication. Communication methods – individual, group and mass. Audio-Visual aids in extension work – projected and non-projected.

UNIT – V**8 hours**

Extension programme development - Meaning , importance and objectives of having a programme, Principles of programme planning, steps in extension programme cycle. Evaluation - types of evaluation.

TEXTBOOKS

1. Dutt and Sundaram, (1997): Sociology, Anmol Publications, N.Delhi.
2. Supe, S.V., (1994): An Introduction to Extension Education, Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
3. Reddy, A., (2006): Extension Education, Sree Lakshmi Press, Bapatla, A P.

REFERENCES

1. Dahama, O.P., and Bhatnagar, (1980): Education and Communication for development, Oxford and IBH publications Co.
2. Ray, G.L., Extension communication and management, Naya Prakash, Calcutta.

UNIT - I**8 hours**

Entrepreneurship - Definition, characteristics of an entrepreneur, entrepreneur and enterprise, traits of a true entrepreneur. Types of entrepreneur, functions of entrepreneur, behavioural qualities required by an entrepreneur. Entrepreneurial Motivation - motivating factors, facilitating factors, achievement motivation.

UNIT - II**8 hours**

Entrepreneurial development training Need for training, objectives, methods and phases of EDP training, benefits of training. Institutional support for entrepreneurial developments - NSIC, SIDO, SISI, DIC, PIPDIC, TCO.

UNIT - III**8 hours**

Project - Meaning, identification, classification. Project formulation - Need, concept, significance, elements of project formulation, Programmed Evaluation and Review Technique (PERT), Critical Path Method (CPM). Break even analysis, Ratio Analysis. Preparation of a project report.

UNIT - IV**9 hours**

Financing - sources of finance, term loans, and lease finance, working capital, financial incentives. Financing procedures, financial ratios and their significance. Financial institutional support for entrepreneurs - commercial banks, IDBI, IFCI, NABARD, LIC, SIDBI. Books of accounts - Concepts, applications, advantages and disadvantages of single entry and double entry system. Concepts of Journal, ledger, subsidiary books, cash book, Trial balance – rectification of errors. Trading account/manufacturing account. Profit and loss account. Concepts of bills and receipts.

UNIT - V**7 hours**

Licensing and Registration. Business ethics. Government policies. Factories act.

TEXTBOOKS

1. Saravanavel P, (1991): Entrepreneurial Development - Principles, Policies and Programmes, Ess Pee Kay Publishing House, Madras.
2. Khanka S.S., (2007): Entrepreneurial Development, S. Chand & Co., New Delhi.

REFERENCES

1. Desai, V., (1996): Entrepreneurial Development, Volume I, II and III, Himalaya Publishing House, Bombay.
2. Murthy C.S.V., (2006): Entrepreneurship Development, Himalaya Pub. House, Mumbai.
3. Hirsch D, Peters P. Michael, Shepherd A. Dean, (2007): Entrepreneurship, 6th edition, Tata McGraw Pub. Co. New Delhi.

B.Sc. HOME SCIENCE

Semester VI

Sl.No.	Course Code	Title of the Course	Hours/ week	Duration of Exam (hours)	Max. Marks
1.	HSC306	Interior Decoration	4	3	100
2.	HSC307	Clothing and Construction	4	3	100
3.	HSC308	Family Dynamics	6	3	100
4.	HSC309	Programmes for Rural & Urban Development	6	3	100
5.	HSC310	Consumer Economics	6	3	100
6.	HSC311	Practical – V Interior Decoration	2	3	50
7.	HSC312	Practical – VI Textiles & Clothing and Construction	2 each semester	3	50

UNIT – I**8 hours**

Design - types, elements of design - line and direction, shape and form, size, colour, texture, space.
Principles of design - harmony, proportion, balance, rhythm and emphasis - meaning, types and its application.

UNIT – II**8 hours**

Colour - Definition, dimensions of colour, prang colour system. Colour harmonies, developing colour schemes for different rooms, principles of design in colour. Colour and emotional effect.

UNIT – III**8 hours**

Furniture - selection and arrangement in various rooms. Furnishing - factors considered in selection of furnishing materials, floor coverings, curtains and draperies, window treatments. Accessories - definition, classification and use.

Flower arrangement - materials used, types, steps in making flower arrangement.

Hanging pictures - selection, framing and hanging of pictures.

Lighting - importance, measurements, types and lighting requirements for various activities and rooms.

UNIT – IV**8 hours**

Housing - importance of housing, functions of a house, site selection and principles of designing living space. Types of house plans for various income groups.

UNIT – V**8 hours**

Kitchen - Various areas of kitchen, types of kitchen. Table setting - laying the table, general rules for table setting, western style, buffet style and Indian style.

TEXTBOOKS

1. Varghese, M.A., Ogale, N.N. and Srinivasan, K. (1996): Home Management, New age International (P) Ltd., Publishing N.Delhi.
2. Despande, R.S., (1980): Build your own Home, United Book Corporation, Pune.
3. John, F.D., (1997): Colour in Interior Design, McGraw Hill Company, New York

REFERENCES

1. Kaur H and Macneil, C., (1994): Theory and Practice of Home Management, Surjeet Publications, Delhi.
2. Goldstein, H.S., and Goldstein. V., (1964): Art in Everybody Life, IBH Publishing Co.Bombay.

UNIT – I**8 hours**

Care of textiles - Laundry agents - Selection of suitable soaps, detergents, bleaches, whitening agents, stiffening agents, dry cleaning agents and stain removal agents. Laundering equipments. Laundering - Principles of laundering, general methods of laundering - dry cleaning process, stain removal. Laundering and storing method for cotton, wool, silk, rayon and synthetic fabrics.

UNIT – II**8 hours**

Family Clothing Plan - Principles of preparing a clothing budget, planning and analyzing the wardrobe requirements of the various members of family based on place, income, status, age, sex and activities. Clothing for infants, pre-schoolers and college girls.

UNIT – III**7 hours**

Clothing Selection - Colour - in relation to season, occasion, size, figure and complexion. Texture and line in relation to size and figure. Fashion – Definition, fashion cycle, sources, advantages and disadvantages. Ready made garments in relation to cost and materials.

UNIT – IV**9 hours**

Techniques of Clothing Construction - Study of basic hand stitches - temporary and permanent. Selection, use and care of sewing machine and sewing tools. Seams and seam finishes. Methods of introducing fullness into a fabric - darts, tucks, pleats and gathers, ruffles and smocking. Plackets - continuous bound, faced, zipper and tailored. Neck finishes - true bias facing, shaped facing, binding. Fasteners - Button and buttonhole, fabric loops, press buttons, hooks and eyes and eyelets.

UNIT – V**8 hours**

Principles of Clothing Construction - Importance of drafting and making paper patterns. Taking body measurements for different types of garments. Preparation of fabric for clothing construction. Placing and cutting of paper pattern in relation to texture and design of fabrics.

TEXTBOOKS

1. Thangam Subramanian, Dress making, Tailoring and Embroidery College, Ambattur, Chennai.
2. Dantyagi S., (1996): Fundamentals of Textiles and their care. Orient Longman Limited, New Delhi.

REFERENCES

1. Mary Mathews, (1974): Practical Clothing Construction, Part I and Part II, Thompson and Co. Pvt. Ltd., Chennai.
2. Agarwal.M., (2005): Home Science & Textiles, ABD Publishers, Jaipur.
3. Yadav. S, (1997): Textbook of Textile & Laundry, Anmol Publications, Pvt Ltd, N.Delhi.
4. Grosick Z, (1988): Watson's Textile Design and Colour, Universal Pub. Corporation.

UNIT – I**8 hours**

Marriage - Preparation, motives, functions and types of marriage. Personality development in relation to marriage. Physical, mental health, emotional maturity in relation to marriage. Factors affecting marriage relationship - religion, socio economic status, careers. Adjustment in marriage - physiological, domestic, social, in-laws relationship. Role of counseling.

UNIT – II**8 hours**

Family - Family as the basic social institution, significance of family. Types, characteristics of family. The place of the individual, man, woman and child in the family and their roles in society. Parenthood - duties, styles of parenting, child rearing techniques. Small family norm.

UNIT – III**8 hours**

Family Crisis - Meaning, causes, types and consequences - Death, divorce, desertion, suicide, prolonged illness, imprisonment, unemployment, dowry, alcoholism, drug addiction, war separation, economic inflation, economic depression.

UNIT – IV**8 hours**

Old Age - Physical and physiological changes, needs and adjustment of the aged. Problems of the aged – physical, psychological and social. Institutions for the elderly. Place of aged in Indian society.

UNIT – V**8 hours**

International organizations – UNICEF, UNESCO, CARE, CASA.
National organizations - NIPPCD, NCERT, BCWR, ICCW.

Related Experiences

1. Visit to voluntary organization home/school for special children.
2. Visit to voluntary organization – Old Age home
3. Visit to voluntary organization - Orphanage
4. Study on problems of old age.
5. Interactive sessions relating to family and family crisis.
6. Visit to Social welfare Department

TEXTBOOKS

1. Hurlock,E.B., (1995): Developmental Psychology-A life span approach, 5th Edition, McGraw Hill Book Co., New York.
2. Rajammal P. Devadas and Jaya N.Muthu, (1996): A text book of Child Development, Macmillan, N.Delhi.
3. Suriakanthi A., (1997): Child Development - An Introduction, Kavitha Publishers.

REFERENCES

1. Hurlock,E.B., (1995): Developmental Psychology-A life span approach, 5th Edition, McGraw Hill Book Co., New York.
2. Nanda V.K., (1998): Principles of Child Development, Anmol Publications Pvt. Ltd., New Delhi.
3. Berk L.E., (2004): Child Development, Pearson Longman New Delhi.

UNIT – I**8 hours**

National Nutrition Policy - Direct interventions, Indirect Policy Instruments. History of planning in India - objectives and goals. The Eleventh Five Year Plan (2007-2012) with focus on health and nutrition. Food, Nutrition and Health security. National Health Mission.

UNIT – II**8 hours**

Programmes for agricultural development Food availability and factors affecting food availability and food consumption. Food distribution systems, food problems. Food policies - objectives, instruments, Food Corporation of India (FCI). Programmes related to agriculture - IRDP, IADP, HYVP. Agencies involved - Co-operatives, Commercial Banks, NABARD.

UNIT – III**6 hours**

Need and scope of employment generation. DWCRA, SHG's, NREGP, TRYSEM, Food for work program, JRY. Role of DRDA.

UNIT – IV**10 hours**

Health Programmes in India - National Tuberculosis Control Programme, National Filariasis Control Programme, Universal Immunization Programme, Pulse Polio Immunization Programme, National Leprosy Eradication Programme, National AIDS Control Programme, National Programme for Control of Blindness, Iodine Deficiency Disorders Programme, Child Survival and Safe Motherhood Programme, National Goitre Control Programme, National Nutritional Anaemia Prophylaxis Programme.

National Nutrition programmes in India - Supplementary Nutrition Programme(SNP), Applied Nutrition Programme(ANP), ICDS, Wheat Based Nutrition Programme (WNP).

State Nutrition Programmes – TINP, Chief Minister's Nutritious Noon Meal Programme, Rajiv Gandhi Breakfast Scheme.

UNIT – V**8 hours**

International agencies - FAO, WHO.

National agencies - NIN, CFTRI, ICMR, ICAR, National Nutrition Monitoring Bureau, Food and Nutrition Board, Nutrition Society of India, Central Social Welfare Board, Nutrition Foundation of India.

TEXTBOOKS

1. Park K, (2005): Park's Textbook of Preventive and Social Medicine, Banarsidas Bhanot Pub., Jabalpur.
2. Sankaran S. (2002): Indian Economy - Problems, Policies and Development, Marghan Publications, Chennai.
3. Dutt R and Sundharam K.P.M., (2004): Indian Economy, S. Chand and Sons.

REFERENCES

1. Ghosh. S, The feeding and care of infants and young children, Voluntary Health Association of India, N. Delhi.
2. Raul, R.K., (2003): Rural Development in India - Approaches and Applications, Serials Publications, N. Delhi.
3. Banji M.S., Rao P.N., and Reddy V., (1996): Textbook of Human Nutrition, Oxford & IBH Pub. Co. New Delhi.

UNIT – I**7 hours**

Definition and concepts. Rights and responsibilities of consumers. Consumer movement - need, objectives and its role.

UNIT – II**9 hours**

Market - meaning, definition, classification, functions of markets, market segmentation. Marketing - meaning and definition, concept of marketing, dimensions of marketing, functions of marketing. Channels of distribution - types and functions.

UNIT – III**9 hours**

Human wants - nature and classification, law of marginal utility, law of equimarginal utility, consumer surplus. Buyer behaviour - buying motives, buying decision process, factors affecting consumer decisions.

Consumer products and promotion practices - types of products, product life cycle, branding, labeling, packaging, sales promotion and advertisement.

UNIT – IV**7 hours**

Business malpractices, adulteration, faulty weight and measures, misbranding, deceptive labeling and packaging.

UNIT – V**8 hours**

Consumer Protection - Meaning, evolution, need for protection, laws for protection. Quality control measures - guarantee and warranty contracts, standardization, grading, BIS, AGMARK, FPO, Nutrition Labeling

Consumer courts, consumer co-operatives, consumer guidance societies.

TEXTBOOKS

1. Sherlekar, S.A., (1984): Trade Practices and Consumerism, Himalaya Publishing House, N. Delhi.
2. Pillai, R.S.N., and Bagavathi, Modern Marketing, S. Chand and Company Ltd., New Delhi.

REFERENCES

1. Kumar N., (1999): Consumer Protection in India, Himalaya Publishing House, N. Delhi.
2. Kotler, P, Principles of Marketing.

Interior Decoration

1. Evaluation of design.
2. Preparation of colour chart and various colour schemes.
3. Application of design principles in preparation of greeting card, poster and a wall hanging
4. Application of design principles in Flower arrangement
5. Application of design principles in Window treatment
6. Drawing floor plans for different income groups.
7. Furniture arrangement in different rooms by means of paper cut out.
8. Survey of the living standards of a few selected families based on their income.
9. Table Setting – Indian, Western styles.
10. Drawing various types of kitchen plans.

Textiles

1. Identifying cotton, silk, wool, rayon, nylon and polyester by visual, burning, and microscopic tests
2. Identifying cotton, silk, wool, rayon, nylon and polyester by chemical tests.
3. Identifying weaves.
4. Identifying prints.
5. Determining colour fastness to sunlight.
6. Determining shrinkage to laundering.

Clothing and Construction

1. Sewing Processes - Hand stitches, Seams and seam finishes.
2. Preparation and application of true bias, bias facing, shaped facing and bias binding.
3. Plackets and openings, continuous placket, bound and faced placket, zipper placket, bound neck opening.
4. Fullness darts, tucks, pleats, gathers, frills, ruffles, smocking.
5. Decorative stitches.
6. Garment Construction – Taking body measurements, drafting and stitching Petticoat, Blouse.