UNIVERSITY OF AGRICULTURAL SCIENCES,

DHARWAD – 580 005

SYLLABUS

FOR

B.Sc. (HOME SCIENCE)

SEMESTER SYSTEM

2007-08

BHSC DEGREE PROGRAMME

ABSTRACT

Courses		Credit Hours
I. BASIC SCIENCE & HUMANITIES	:	**15**
PED/ NCC/ NSS	:	02*
II. AGRICULTURAL & ALLIED COURSES	:	**15**
III. HOME SCIENCE CORE COURSES		
a) Extension and Communication Management	:	12
b) Family Resource Management	:	12
c) Food Science and Nutrition	:	12
d) Human Development	:	12
e) Textiles and Apparel Designing	:	12
		60
IV. PROFESSIONAL ELECTIVES		
a) Extension and Communication Management	:	50
b) Family Resource Management	:	50
c) Food Science and Nutrition	:	50
d) Human Development	:	50
e) Textiles and Apparel Designing	:	50
V. SUPPORTING COURSES	**:**	**10**
VI. RURAL AWARENESS WORK EXPERIENCE	**:**	**10**
Total		**160+2***

*** Compulsory but not considered for calculation of AGP/ OGPA/CGPA**

SCHEDULE OF COURSES FOR B.H.Sc (HOME SCIENCE)

Course No.	Department wise courses	Credit hours
	I. BASIC SCIENCES AND HUMANITIES	
AEX 101	Rural Sociology & Human Psychology	3(2+1)
ENG 101	Spoken English and Journalism	2(1+1)
ECN 102	Fundamentals of Economics	2(2+0)
STS 101	Elementary Statistics	3(2+1)
MAT 106	Introductory Computer Science	2(0+2)
BCH 102	Introductory Biochemistry	3(2+1)
PED 101/ NCC 101/ NSS 101		1(0+1)*
PED 102/ NCC 102/ NSS 102		1(0+1)*
	Total	15 (9+6+2*)
	II. AGRICULTURAL & ALLIED COURSES	
AET 304	General and Applied Entomology	2(1+1)
AMR 402	Marketing Management	2(2+0)
AGR 101	Principles of Crop Production and Soil Fertility Management	2(1+1)
AGR 102	Crop Production-I	1(0+1)
PAT 205	Diagnosis and Management of Plant Diseases	2(1+1)
GPB 202	Principles of Heredity	2(1+1)
HRT 303	General Horticulture	2(1+1)
DPS 201	Dairy and Poultry Science	2(1+1)
	TOTAL	**15(8+7)**
	III. HOME SCIENCE COURSES	
	Extension and Communication Management	
ECM 101	Introductory Home Science and Extension Education	2 (2+0)
ECM 102	Communication and Instructional Technology	4 (2+2)
ECM 201	Diffusion and Adoption of Homestead Technology	3 (2+1)
ECM 202	Programme Development for Rural Families	3 (1+2)
	Total	**12(7+5)**

	Family Resource Management		
FRM 101	Principles of Family Resource Management		2(2+0)
FRM 102	Family Finance Management and Consumer Education		4(3+1)
FRM 201	Housing and Space Management		2(1+1)
FRM 202	Art Principles and Interior Enrichment		2(1+1)
FRM 203	Household Equipment		2(1+1)
		Total	**12(8+4)**
	Food Science and Nutrition		
FSN 101	Elements of Food Science		3(2+1)
FSN 102	Introduction to Human Nutrition		3(3+0)
FSN 201	Elementary Normal and Therapeutic Nutrition		3(2+1)
FSN 202	Principles of Food Preservation		3(1+2)
		Total	**12(8+4)**
	Human Development		
HDV 101	Pre-natal Care and Infant Development		2(1+1)
HDV 102	Early Childhood Development and Education		4(2+2)
HDV 201	Late Childhood and Adolescence		3(2+1)
HDV 202	Dynamics of Marriage and Family		3(2+1)
		Total	**12(7+5)**
	Textiles & Apparel Designing		
TAD 101	Textile Science and Fabric Care		3(2+1)
TAD 102	Fundamentals of Clothing Construction		3(1+2)
TAD 201	Fundamentals of Textile Designing		3(2+1)
TAD 202	Garment Construction and Wardrobe Planning		3(1+2)
		Total	**12(6+6)**

IV. PROFESSIONAL ELECTIVES

	Extension & Communication Management (Journalsim and Mass Communication)	
ECM 301	Basics of Journalism & Mass Communication	4 (2+2)
ECM 302	Radio & TV Journalism	4 (1+3)
ECM 303	Mass Media and Society	4 (2+2)
ECM 304	Creative Writing	3 (1+2)
ECM 305	Print Journalism	4 (2+2)
ECM 306	Public Relations & Social Marketing	4 (2+2)
ECM 401	Public Speaking	3 (1+2)
ECM 402	Journalism as Entrepreneurial Education	4 (1+3)
ECM 410	Experiential Learning	10 (0+10)
ECM 411	Implant Training	10 (0+10)
	Total	**50 (12+38)**
	Family Resource Management (Interior Design)	
FRM 301	Traditional and Contemporary Interiors	2(2+0)
FRM 302	Graphics and Rendering in Interior Design	4(1+3)
FRM 303	Computer Aided Design in Interiors -I	2(1+1)
FRM 304	Space and Storage Design	4(2+2)
FRM 305	Furniture and Furniture Arrangement	3(1+2)
FRM 306	Floor, Wall, Window and Fixtures in Interior design	4(2+2)
FRM 401	Computer Aided Design in Interiors -II	3(0+3)
FRM 402	Functional Interiors for Special Needs	4(1+3)
FRM 403	Applied Craft and Accessories in Interior Enrichment	4(2+2)
FRM 410	Experiential Learning	10 (0+10)
FRM 411	Implant Training	10 (0+10)
	Total	**50 (12+38)**

	Food Science and Nutrition (Dietetics and Catering Management)	
FSN 301	Human Nutrition	2(2+0)
FSN 302	Clinical Nutrition	3(2+1)
FSN 303	Food Analysis	3(1+2)
FSN 304	Community Nutrition	3(2+1)
FSN 305	Catering Management	3(1+2)
FSN 306	Diet Therapy	4(2+2)
FSN 307	Nutrition Education & Counseling	3(1+2)
FSN 308	Hospital Dietetics	4(1+3)
FSN 309	Food Standards & Quality Control	3(2+1)
FSN 401	Bakery & Confectionary	2(0+2)
FSN 410	Experiential Learning	10 (0+10)
FSN 411	Implant Training	10 (0+10)
	Total	**50 (14+36)**
	Human Development (Organization and Management of Early childhood Education Programmes)	
HDV 301	Developmental Assessment of Young Children	4(1+3)
HDV 302	Curriculum Development for Early Childhood Education Programmes	4(2+2)
HDV 303	Development of Teaching Materials for Early Childhood Education Programmes	4(1+3)
HDV 304	Literature for Children	4(2+2)
HDV 305	Intervention Programmes for Family and Community	4(2+2)
HDV 306	Integration of Children with Special Needs	4(2+2)
HDV 307	Child Guidance and Parent Counselling	3(2+1)
HDV 308	Entrepreneurship Development in Early Childhood Education	3(1+2)
HDV 410	Experiential Learning	10 (0+10)
HDV 411	Implant Training	10 (0+10)
	Total	**50 (12+38)**

	Textiles and Apparel Designing (Apparel Designing)	
TAD 301	Indian Textiles and Costumes	4 (2+2)
TAD 302	Computer Aided Designing –I	4 (2+2)
TAD 303	Principles of Design and Application to Textiles	3 (1+2)
TAD 304	Fashion Illustrations	4 (1+3)
TAD 305	Merchandising Practices	3 (2+1)
TAD 306	Computer Aided Designing –II	3 (0+3)
TAD 307	Apparel Manufacturing Technology & Management	2(2+0)
TAD 401	Apparel Designing and Manufacturing	4 (1+3)
TAD 402	Dyeing and Printing	3(1+2)
TAD 410	Experiential Learning	10 (0+10)
TAD 411	Implant Training	10 (0+10)
	Total	**50 (12+38)**
	V. <u>SUPPORTING COURSES</u>	
AEX 401	Information Technology	2(1+1)
AMR 401	Consumer Behaviour & Market Research	3(2+1)
ANS 301	Introduction to Wool Technology	2(1+1)
AFN 401	International Trade	2(2+0)
AMB 302	Principles of Food and Dairy Microbiology	3(2+1)
BCH 301	General Biochemistry	4(4+0)
CHM 301	Chemistry of Textiles Auxillaries	3(2+1)
ENG 301	Structural & Spoken English	2(1+1)
HRT 403	Floriculture & Landscape Gardening	2(1+1)
HRT 404	Commercial Flower Production	3(2+1)
PHH 101	Human Physiology and Hygiene	3(2+1)
PSY 101	Child Psychology	4 (2+2)
SER 401	Sericulture	2(1+1)
	OR	
	Any approved courses of the University	
RWP 401	**Rural Awareness Work Experience (RAWE)**	**10 (0+10)**
	GRAND TOTAL	**160+2***

*** Compulsory but not considered for calculation of OGPA/ CGPA**

AEX-101 RURAL SOCIOLOGY & HUMAN PSYCHOLOGY 3(2+1)

Theory

RURAL SOCIOLOGY

Sociology and rural sociology meaning, nature, importance and scope; Relationship of rural sociology with other social sciences and home science; Understanding basic sociological concepts: society, community, association, institution, 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, mores, folkways; Social change: meaning and importance; Social control: meaning, importance and ways of social control; Elements of social system.

HUMAN PSYCHOLOGY

Nature & scope of human psychology and methods in human psychology. Attention sensation & perception- meaning and nature, factors affecting attention sensation & perception, types of attention and perceptual errors. Learning & memory- nature & importance, methods of learning, memory & its importance in learning and types of memory. Thinking & reasoning- nature of thinking & problem solving, creative thinking. Intelligence-meaning & nature, factors affecting intelligence and values of intelligence. Personality- meaning, types & measurement of personality.

Practicals

1. Massed Vs. Spaced Learning
2. Transfer of learning
3. Intelligence
4. Verbal test of intelligence
5. Verbal reasoning
6. Abstract reasoning
7. Mechanical reasoning
8. Space Relations
9. Language usage
10. Personality
11. Level of aspiration
12. Achievement motivation
13. Study habits
14. Self image
15. Patterns of adjustment
16. Retroactive inhibition
17. Division of attention
18. Depression

ENG-101 SPOKEN ENGLISH AND JOURNALISM (1+1)

Theory

Tenses-General introduction to tenses-the concept of three tenses-present, past & future-Usage of tenses in different contexts-regular and irregular verbs-sequence of tenses-conjugation.

The passive voice-the concept of active and passive form-Transitive and intransitive verbs-The usage of passive voice and its importance-conversion of active voice form into passive voice form and vice-versa.

Reported speech-The indirect speech and its importance in report writing.

Prepositions-The essentiality and the use of prepositions-Detailed discussion of prepositions in common usage.

Common grammatical errors.

Introduction to different types of writings-descriptive, narrative and technical writing.

Spoken English-Introduction to spoken English-Importance of spoken English-Introduction to sounds-Vowels, consonants and diphthongs-Intonation and its importance in spoken English.

Chief fields of Journalism-News desk-News Selection and editing-Head lines and lay-out.

The art of reporting and its importance in journalism.

Practicals

1. Exercises in tenses
    a. Exercises in conjugation
    b. Exercises in sequence
    c. Exercises in the usage of regular and irregular verbs
2. Exercises in voice
    a. Exercises in transitive and intransitive verbs
    b. the form of passive voice in all tenses
3. Exercises in reported speech
4. Exercises in prepositions
5. Exercises in précis-writing
6. Exercises in common grammatical errors (correction of sentences)
7. Reading exercises in vowels
8. Reading exercises in consonants
9. Reading exercises in diphthongs
10. Reading exercises with different intonation patterns

ECN-102 FUNDAMENTALS OF ECONOMICS 2(2+0)

Theory

Introduction: Nature, Scope and Significance of Economics:

Basic concepts of Economics; Goods and Services, Wants, Utility, Value, Price, Consumption. Engle's Law of Consumption wealth and welfare. National Income; GNP, NNP, GDP.

Theory of consumer behaviour; Law of Diminishing marginal utility, Law of Equimarginal utility and consumers' Surplus.

Demand; meaning of Demand, Law of Demand, Types, variation and changes in Demand, Elasticity of demand, measure mental of elasticity of demand.

Supply: Meaning & Law of supply, types, variation and changes in supply. Elasticity of Supply.

Factors of production; meaning and characteristics of Land, meaning and characteristics of labour, efficiency of labour, division of labour and theories of population. Meaning and classification of capital, Capital formation and functions of an entrepreneur.

Laws of Returns, Law of Diminishing Returns, Law of constant Returns, Law of Increasing returns and Law of variable proportions.

Cost of production: different concepts of costs of production and revenue.

Barter system, money, or income function and types of money, concepts of inflation and deflation.

Banking: different types of banks, Commercial and Central bank functions.

Public Finance: Meaning and sources of public finance and expenditure, types of taxes, cannons of taxation, budget.

STS-101 ELEMENTARY STATISTICS 3(2+1)

Theory

Definition and scope of statistics; presentation and summarization of statistical data; frequency distribution; diagrammatic and graphic representation of data; measures of central tendency; measures of dispersion; concept of probability and probability distribution - Binomial, Poisson and normal distribution. Concept of sample and population methods of drawing random sample. Introduction to test of significance. Standard normal deviation tests; student's t-test; F-test & chi-square test, correlation and regression; analysis of variance (one way and two way classification).

Practicals

Construction of frequency tables.

Drawing of histogram and frequency polygon.

Computation of mean, mode and median.

Computation of mean deviation and standard deviation.

Computation of coefficient of variation.

Computation quarterly, deciles and perentiles.

Examples on standard normal test (z) for one sample.

Examples on standard normal test (z) for two sample.

Example on t-test for one sample.

Example on t-test for two sample.

Examples on F-test.

Examples on F-test(continued).

Example on x^2-test.

14.Example on x^2-test(Continued).

15.Examples on correlation.

16.Examples on correlation(Continued).

17.Examples on regression.

18.Examples on regression(Continued).

19.Examples on rank correlation.

20.Examples on one way ANOVA.

21.Examples on two way ANOVA.

MAT–106 INTRODUCTORY COMPUTER SCIENCE 2(0+2)

Practicals

1. Introduction to Computers
2. Fundamentals of Computers
3. Hard wares of Computers
4. Different Operating Systems
5. Command based Operating System and GVI
6. Computer soft wares
7. Application soft wares like word processors
8. Getting stared in MS word
9. Working with different types of text
10. Graphics and text boxes
11. Viewing the document
12. Character and paragraph formatting
13. Page set up
14. Header and footer
15. Printing a document in MS word
16. Creating work sheets
17. Entering data
18. Viewing the work sheet
19. Working with ranges
20. Various Editing options
21. Various Formatting options
22. Creating chart
23. Modifying chart
24. Working with formula
25. Working with functions
26. Printing in Excel

BCH-102 INTRODUCTORY BIOCHEMISTRY 3(2+1)

Thoery

Introduction to biochemistry; its importance and relationship with food and nutrition; Carbohydrates: definition, classification, general reactions, digestion and absorption, metabolism; Lipid metabolism: definition, classification, digestion and absorption; Saturated and unsaturated fats and fatty acids, oxidation, reactions, rancidity; Proteins: definition, classification, digestion and absorption, colloidal nature of proteins, shape and structure of proteins; Amino acids: classification, chemical properties, metabolism, Enzymes: chemical nature, mechanism of action, specificity of enzymes, conditions for enzymatic activities, co-enzymes and vitamins, Nucleic acids: RNA and DNA; their biological functions, nucleosides and nucleotides, structure and functions.

Practicals

1. Qualitative tests for carbohydrates.
2. Hydrolysis of starch by dil acid and amylases.
3. Qualitative tests for lipids.
4. Qualitative tests for amino acids and proteins.
5. Demonstration of Lambert - Beer's law.
6. Quantitative tests for reducing sugars.
7. Quantitative tests for total sugars.
8. Estimation of soluble proteins by Lowry's method.
9. Estimation of soluble proteins by Biuret method.
10. Determination of saponification number of an oil / fat.
11. Determination of iodine number of an oil / fat.
12. Determination of acid number of an oil / fat.
13. Determination of acetyl number of an oil / fat.
14. Estimation of Ascorbic acid by titrimetry.
15. Determination of organic acid content by titrimetry.

PED-101 PHYSICAL EDUCATION-I (0+1)

Practicals

1. Teaching of skills of foot ball: demonstration, practice of skills, correction, involvement in game situation (for girls teaching of tennikoit)
2. Teaching of different skills of foot ball: demonstrations, practice of skills, correction of skills, involvement in game situation (for girls teaching of tennikoit)
3. Teaching of advance skills of football: involvement of all the skills in game situation, with teaching of rule of the game
4. Teaching of skills of basketball: demonstration, practice of skills, correction of skills, involvement in game situation
5. Teaching of skills of basketball: demonstration, practice of skills, involvement in game situation
6. Teaching of skills of basketball: involvement of all the skills in game situation with teaching of rule of the game
7. Teaching of skills of kabaddi: demonstration, practice of skills, correction, involvement in game situation
8. Teaching of skills of kabaddi: demonstration, practice of skills, correction, involvement in game situation
9. Teaching of advance skills of kabaddi: involvement of all the skills in game situation with teaching of rule of the game
10. Teaching of skills of ball badminton: demonstration, practice of skills, correction, involvement in game situation
11. Teaching of skills of ball badminton: involvement of all the skills in game situation, with teaching of rules of the game
12. Teaching of some asanas: demonstration, practice, correction and practice
13. Teaching of some more asanas: demonstration practice, correction and practice
14. Teaching of skills of table tennis: demonstration, practice of skills, correction, involvement in game situation
15. Teaching of skills of table tennis: demonstration, practice of skills, correction, involvement in game situation
16. Teaching of skills of table tennis: involvement of skills in game situation with teaching of rules of the game
17. Teaching: meaning, scope and importance of physical education
18. Teaching: definition, types of tournaments
19. Teaching: physical fitness and health education
20. Construction and laying out of the track and field

PED-102 PHYSICAL EDUCATION-II (0+1)

Practicals

1. Teaching of skills cricket: demonstration, practice of skills, correction, involvement in game situation
2. Teaching of skills cricket: demonstrations, practice of skills, correction involvement in game situation
3. Teaching of advance skills of cricket: demonstration, practice of skills correction involvement in game situation, teaching of rule of the game
4. Teaching of skills of volley ball: demonstration, practice of skills, correction of skills, involvement in game situation
5. Teaching of skills of valley ball: demonstration, practice of skills, correction of skills, involvement in game situation
6. Teaching of advance skills of volley ball: demonstration, practice, correction, involvement in game situation, teaching of rules of the game
7. Teaching of skills of hockey: demonstration, practice, correction, involvement in game situation
8. Teaching of skills of hockey: demonstration, practice, correction, involvement in game situation
9. Teaching of advance skills of hockey: demonstration, practice, correction, involvement in game situation and teaching of rules of the game
10. Teaching of running events of tract: demonstration, practice, correction and rules
11. Teaching of jumping events of track: demonstration, practice, correction and rules
12. Teaching of jumping events of tract: demonstration, practice, correction and rules
13. Teaching of skills of kho kho: demonstration, practice and correction, involvement of skills in game situation
14. Teaching skills of kho kho: demonstration, practice and correction, involvement of skills in game situation
15. Teaching of advance skills of kho kho: demonstration, practice, correction, involvement of skills with rules of the game
16. Teaching of asanas: demonstration, practice, correction and practice
17. Teaching of asanas: demonstration, practice, correction and practices
18. Teaching: recreation, types of recreational activities
19. Teaching: meaning of warming up, fatigue, oxygen debt, rest and relaxation
20. Teaching: effects of exercises on various systems of human body

NCC 101 NATIONAL CADET CORPS – I 1(0+1)

Enrolment, the oath, introduction and history of National Cadet Corps, turnout and smartness, aims, of NCC; DG's four cardinals of discipline, role of NCC, introduction to Armed forces organization of NCC.

Drill without arms – Aims of drill, principles of good instruction, sequence of instruction, attention, Stand-at-ease, about turn, right/left turn, squad will move to the right, squad will advance dress up right dress, left dress, center dress, front/center/rear rank steady, form up in three ranks quick march, number, as you were, open order/close order march, break-off, dismiss, fall in, fallout, sizing, form up three ranks, right marker, slow march, double march, quick march, halt, step out, step short, wheel right/left, advance, retire, mark time, break in slow time, slow march, break in double time, salute, National salute, salute to the right, left.

Weapon training – Introduction, sequence of teaching, a WT lesson

Rifle – parts of rifle, identification of a rifle, different types of rifle, rifle cleaning, loading and unloading in different positions, sequence of opening and rearranging the parts of rifle charger and filling the ammunition in charger clip, aiming with trigger operation, TOET, seven tests of elementary training aiming rest, stick rest, positions adopted for firing rifle and where, limber up, MPI.

Bayonet – Qualities of a bayonet fighter, types of bayonets, training stick and bayonet fighting.

First aid – What is first aid, list of items to be kept in the first aid box, kinds of fracture, kinds of bandages, kinds of dressings, sunstroke, treatment, burns and scalds, fire, snake bite, artificial respiration.

Civildefence – Preparation for protection against air raid, do's; and dont's on hearing air raid warning while in open, near a building, inside a building, in a vehicle, in cinema.

Military history, geography and organization, organization of armed forces army, navy and air force, organization of army headquarters, infantry battalion, organization, section, platoon, company, battalion their authorized weapons.

NCC 102 NATIONAL CADET CORPS – II 1(0+1)

Weapon training – Light machine gun – characteristics of LMG, various group of LMG, parts of LMG, Stripping and assembling, types, detailed study like weight, banch, magazines, base ammunition used, rate of fire, effective range, capacity of magazine setting the sight, sequence of firing, stoppages and their immediate action, backward and forward action, caliber, positions of fire.

Sten machine carbine (SMC) : Characteristics types, parts stripping, caliber, effective range, muzzle velocity, maximum range capacity of magazine, filling of magazine, position of carrying weight, loading position loading and unloading, stoppage and remedy, characteristics, stripping and assembling.

2" x 3" mortars: parts, types, and sequence of stripping and assembling, types of fire, operation, firing, causes of misfire.

Grenades: Characteristics of HE, 36, types, parts, effective range lobbying grenade.

Map reading: Object, what is a map uses, conventional signs, colour of conventional signs, cardinal points, kinds of north, grid line, grid reference, relief, methods of showing relief, H.E. gradient, scale, different methods of finding north, setting a map with different methods, finding once own position and finding the object on the map to ground to map compass, its parts, using of a compass, workout forward and backward bearing, service protractor – description, reading bearing on map, finding of position on the map.

Field craft and section and platoon leading : Essential parts of FC how are things seen, concealment, camoulage, principles of good camouflage, types of cover, movements by right, types of ground, various methods of judging distance, indication of targets methods of measurement, estimation of distance, various section formation their advantage and disadvantage, field signals.

Scouts and patrol : Importance, tasks, O.P., work of scouts and patrol types of patrol and their task, qualities of good Reece patrol, responsibilities of patrol leader, preparation and conduct of patrol, de-briefing.

Ambush : Purpose, principles, essentials, types, composition.

Drill with rifle : All the movements as done without arms and also slope arms, orders arms present – arms, ground arms, take-up arm, for inspection, trial arms, sling arms, support arms, guard fixing bayonets, march to attention, march at ease, reverse arms, present arms.

Guard drill : all the activities involved in change of old guard and mounting of new guards, their duty and importance.

Firing of rifle : Firing with rifle, range drill and discipline.

Outdoor exercises : Demonstration of ambush, and patrolling, section formation and map reading.

Ceremonial drill : Compliments, procedure.

Posture training, introduction to home nursing, childcare, family welfare, singhal.

NSS-101 NATIONAL SERVICE SCHEME (0+1)

Practicals

Introduction to National Service Scheme objectives and motto of NSS programme planning and development kinds of activities in regular and special camping programmes. Aspects of NSS Programme-Institutional, rural and urban projects-villages/slum adoption-organizational and administrative arrangements of NSS at National, State University and College levels.

Each students has to undergo a minimum of 240 hours of regular service in 4 consecutive semesters and attend one special complete the courses NSS-102, NSS-201 and NSS 202.

NSS-102 NATIONAL SERVICE SCHEME (0+1)

Practicals

Adult education programmes of continuing education of school dropouts, coaching of students from economically weaker sections, organization of Youth/Clubs, discussions on eradication of social evils like casteism, regionalism, corruption, untouchability, etc., non-formal education of rural youth. Awareness programmes on drug abuse and AIDS-Voter awareness campaign.

NSS-201 NATIONAL SERVICE SCHEME (0+1)

Practicals

Environmental enrichment and conservation plantation of trees, their preservation and upkeep. Construction of rural roads, clearing of village ponds, popularization of biogas plants, prevention of soil erosion. Programmes of work during emergencies and natural calamities like cyclones, floods and earth-quake-assisting the authorities in distributions of rations, medicines and clothes-Assisting health authorities in inoculation, supply of medicines etc. Reconstruction of huts, relief and rescue work.

NSS-202 NATIONAL SERVICE SCHEME (0+1)

Practicals

Health, family welfare and nutrition programmes, mass immunization, blood donation, integrated child development, population education-programmes aimed at creating awareness for improvement of the status of woman-production oriented programmes-teaching improved agricultural technologies, rodent control and pest management, weed control, soil testing, guidance in animal husbandry and poultry farming, Animal Health Checking Programmes and small savings.

DEPARTMENT OF EXTENSION AND COMMUNICATION MANAGEMENT

CORE COURSE (12 Credit Hours)

COURSE NO	COURSE TITLE	CREDIT HOURS
ECM 101	Introductory Home Science and Extension Education	2 (2+0)
ECM 102	Communication and Instructional Technology	4 (2+2)
ECM 201	Diffusion and Adoption of Homestead Technology	3 (2+1)
ECM 202	Programme Development for Rural Families	3 (1+2)
	TOTAL	**12(7+5)**

PROFESSIONAL ELECTIVE-JOURNALISM AND MASS COMMUNICATION

MAJOR COURSES (50 Credit Hours)

COURSE NO	COURSE TITLE	CREDIT HOURS
ECM 301	Basics of Journalism & Mass Communication	4 (2+2)
ECM 302	Radio & TV Journalism	4 (1+3)
ECM 303	Mass Media and Society	4 (2+2)
ECM 304	Creative Writing	3 (1+2)
ECM 305	Print Journalism	4 (2+2)
ECM 306	Public Relations & Social Marketing	4 (2+2)
ECM 401	Public Speaking	3 (1+2)
ECM 402	Journalism as Entrepreneurial Education	4 (1+3)
ECM 410	Experiential Learning	10 (0+10)
ECM 411	Implant Training	10 (0+10)
	Total	**50 (12+38)**

SUPPORTING COURSES **10 (0+10)**

DEPARTMENT OF EXTENSION AND COMMUNICATION MANAGEMENT

ECM-101 INTRODUCTORY HOME SCIENCE AND EXTENSION EDUCATION (2+0)

Theory

Meaning, importance, need and philosophy of Home Science education. Areas of Home Science with its structural functions and relationship with other biological, social, physical and agricultural sciences. Historical development and present status of Home Science Education with special reference to Home Science colleges in State Agricultural Universities. Home Science as a subject and discipline, Home Science Institutions, Home Science Association of India. Changing trends and future challenges of Home Science education. Role and scope of Home Science towards vocational preparation, self-employment and rural development

Meaning, importance, philosophy, principles, objectives of extension education and relationship with Home Science and related subjects. Contributions of Home Science Extension Education towards development of rural families and house holds. Historical development of community development and extension education programmes in India. Rural development programmes of Government, Non-Government, aided organizations and State Agricultural Universities for women, youth and children. Role of Home Science Extension in community building for up-liftment of rural families.

ECM-102 COMMUNICATION AND INSTRUCTIONAL TECHNOLOGY 4(2+2)

Theory

Origin, meaning, definition, functions and problems of communication. Communication media – classification-Individual, Group and Mass approaches-characteristics, merits and limitations. Audio visual aids-Non-projected aids –charts, posters, graphs, flash cards, flip charts, educational games –meaning advantages limitations and use in communication. Projected Aids- OHP, slide projector, film projector –meaning, advantages, limitations and use in communication. Factors influencing effectiveness of visual aids. Instructional Technology - computers, e-mail, interactive video, teleconferencing, CD-ROM, local area and wide area network -- functions, merits, and limitations. Application of important psychological concepts to teaching – learning. Effective organization and management of teaching.

Practicals

Familiarization with accessories for preparing communication materials

Factors influencing effectiveness of visual aids

Drawing, coloring and lettering techniques

Preparation of poster, pictorial chart, organizational chart, suspense chart and tree chart

Preparation of graphs

Preparation of flash cards and flip chart

Preparation of educational games

Use of bulletin board, flannel board, magnetic board and fixographs

Handling and maintenance of projected aids

Handling and maintenance of computers and its accessories

Lesson planning using various AV aids

Presentation of lesson plans

ECM-201 DIFFUSION AND ADOPTION OF HOMESTEAD TECHNOLOGIES 3 (2+1)

Theory

Concepts, meaning, definition, principles, characteristics of diffusion. Innovation-Meaning, concept, characteristics. Innovation decision process – meaning, stages and types. Meaning of Homestead technology. Importance and process of diffusion with reference to homestead technologies. Role of communication methods in diffusion of homestead technologies. Concept of need and techniques of identifying felt and unfelt needs. Diffusion of home science technologies-problems and solution. Various components for formulation of home based technology projects for effective adoption. Implementation monitoring and evaluation of diffused technology. Adopter categories and their characteristics.

Practicals

1. Development of survey schedules for obtaining demographic information of village and profile of households
2. Collection of information through survey schedules
3. Identification of felt and unfelt needs of assigned households through structured schedules
4. Formation of projects based on needs of households
5. Development of communication material on identified technology
6. Project implementation to assess the adoption of homestead technology by individual families
7. Preparation of instructional materials for demonstration
8. Organization and conducting group demonstrations
9. Evaluation of demonstrated technology in terms of diffusion in the village community

ECM-202 PROGRAMME DEVELOPMENT FOR RURAL FAMILIES 3(1+2)

Theory

Programme development - concept, scope, principles, objectives. Steps in programme planning, organizing, supervising, monitoring and evaluation. Leadership – qualities, identification and development of leadership. Role of extension agencies for planning and implementing programmes for rural families.

Practicals

Study of rural situation establishing rapport with rural families

Planning and preparation of schedules/proforma for identifying needs

Conducting village and household survey

Tabulating and analyzing the collected data

Finalizing the information

Finalizing home science extension activities based on collected information

Developing audio-visual aids for selected demonstrations

Conducting demonstrations

Evaluation of the demonstration conducted

Identifying leaders

PROFESSIONAL ELECTIVE
JOURNALISM AND MASS COMMUNICATION

ECM 301 BASICS OF JOURNALISM & MASS COMMUNICATION 4 (2+2)

Thoery

Journalism: Concept and Origin of Journalism. Role of English Press and Regional Language in Journalism, Principles of Journalism, Role and responsibilities of Journalists, Ethics and codes of Journalism, Press Council Guidelines, Press Council code on Communal writings, Parliament code, Professional Organizations and Statutory bodies, Press Commission, Press and Broadcasting Council, Trade & Professional bodies in Journalism.

Mass Communication: Concept, Theories of Mass Communication, Communication Researches, Nature and areas of Communication Research, Approaches to Communication Research, Communication Research Applications in the Indian context, Contribution of mass media to the society

Practicals

1. Contribution of reputed journalists
2. Study of news papers and magazines
3. Study of Contribution of mass media to the society:
4. Print Media, Radio, TV, Cinema, Folk media
5. Visits to mass communication centres
6. Discussions with journalists

ECM 302 RADIO & TV JOURNALISM 4 (1+3)

Thoery

Electronic media – concept, factors for selection, advantages & limitations.

Radio – History, writing and editing for radio, interview techniques for radio, recording, techniques, advantages & limitations of radio, code of broadcasting.

TV - History, writing and editing for TV, Interview technique for TV, TV news, TV programe, production, advantages & limitations of TV.

Practicals

Familiarization and analyzing Programme of Radio

Visits to AIR for understanding the working of various units

Developing & Practicing for Radio – News, Radio talks, Interviews

Familiarization of TV channels and Programme

Visits to the cable Network

Developing and practicing of TV – News, Talks, Interviews

Impact study of Radio listening and TV viewing

ECM 303 MASS MEDIA AND SOCIETY 4 (2+2)

Theory

Media Impact on Indian Society, Functions of Mass Media, Characteristics of Mass Media Audiences, Concept of right to free expressions in Mass medias, Psychological, official and legal limitations to Mass Media, Mass Media Policies, Women and Mass Media, Traditional media and society, Government Media Organizations, Education through Mass Media viz., Print, Radio, Television, Films and Documentaries, Law of Defamation and Journalistic Defence.

Practicals

1. Portrayal of women in Mass Media
2. Identification of traditional communication methods
3. Internalization of skills of traditional media
4. Development of traditional media
5. Identification of subjects for preparation of documentaries
6. Script writing for documentary
7. Practicing of indoor shooting and out door shooting
8. Audio recording and editing
9. Presentation, evaluation of documentaries

ECM 304 CREATIVE WRITING 3(1+2)

Thoery

The art of writing. The elements of prose – words, sentences and paragraphs. Aspects of effective style – Brevity & conciseness, consistency and brightness. Patterning the text. Techniques of good writing. Qualities of a good writer. Getting ideas and source of information. Feature writing – components, types and techniques. Opinion and editorial writing characteristics, types, policy, style and guidance. Magazine writing –types, style and ethics. Freelancing – Articles, Features and Reviews.

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Practicals

Exercise on words, construction of sentences and paragraphs

Exercise on short writings situations , personals , experiences, travelogues etc

Picture story writings

Slogan writings

Collecting ideas and sources for writings

Identifying writings and presenting different leads

Writing the news articles

Writing exercise for different types of magazines- sports, women , political etc

Development and presentation of cases on popular writers

Analysis and reviewing of published articles

ECM 305 PRINT JOURNALISM 4 (2+2)

Thoery

Importance of print media, News gathering and interview technique for print media, Types of reporting - objective reporting, interpretative reporting, investigative reporting. Writing, editing, Proof reading and reporting - Speeches, Courts, Crime, Sports, Science and Technology. News Agencies in India and their services. Editing- Meaning, Definition, Need, Method of editing, Qualities of an editor, Editing marks and symbols. Photo Editing – Importance, Qualities of good photographer, cropping of pictures, captions for pictures. Design – Layout and typography of print matter. Electronic Editing – Use of computer for editing. Tests of Readability.

Practicals

Practicals exercise on writing different forms of reports- interpretative report , cultural events report , crime report, sports reports , specialized reports- environmental and ecology, reporting on health issues , Agriculture reporting , women and child issues reporting

Editing process-using symbols, rewriting, integrating, updating, referencing , proof reading

. Developing, designing and layout of different types of print materials – Leaflets, Newspapers, Newsletters,. Pressnote

Testing the readability of prepared materials and readership survey

Participation in press conferences

ECM 306 PUBLIC RELATIONS & SOCIAL MARKETING 4 (2+2)

Theory

Introduction to public relations- definition, meaning, nature, ethics and scope of public Relation. Management tools, public relation in public, private and government sectors and profession in India. Qualities of public relation man. Public relations and socio- economic change. Social marketing- concepts, principles and philosophy. Communication and social marketing. Marketing Vs sale. Importance of social marketing in development. Social marketing requirements and change in Indian marketing situations. Advertisement – tools of communication, kinds of advertisement, and social aspects of advertisement. Impact of public relation advertising on mass media**.**

Practicals

1. Institutions for understanding public relations in govt. public and private sectors
2. Case study on different institution with reference to the applications of public relations
3. Presentation, evaluation and discussion of case studies in public relation
4. Discussion on the concept of social goods, social marketing
5. Identification of cases related to social marketing
6. Methods used in marketing
7. Methods used in social marketing
8. Preparation of material for social marketing
9. Field visit to understand marketing methods for social goods
10. Study of constraints in social marketing

ECM 401 PUBLIC SPEAKING 3 (1+2)

Theory

Introduction to public speaking – Formal, Informal and Extempore. Types of speeches – persuasive, informative & Explanatory. Structuring the Speech – Introduction, body and conclusion. Effective delivery – voice, speech and appearance. Overcoming fear and anxiety of public speaking. Ethics of public speaking. Different fora of public speaking – Group discussion, Panel discussion, Brain storming, Buzz session. Role of Visuals in presentation. Body language and listening

Practicals

Improving voice and speech, posture , breathing, pace, pause, Rhythm, pitch and intonation

Developing listening skills

Exercise on informal speeches

Exercise on formal speeches – selection of topic , preparation of

script, rehearsal , presentation and evaluation

Persuasive , informative and demonstrative speeches

Extempore speeches

Planning and conducting group discussion

Ethics of public speaking

Overcoming fear in public speaking

Planning, preparation and conducting panel discussion , seminar and brain storming

Practicing body language in public speaking

Planning and conducting public meetings in rural / urban area

ECM 402 JOURNALISM AS ENTREPRENEURIAL EDUCATION 4 (1+3)

Theory

Entrepreneur – concept, characteristics, functions, types. difference between an entrepreneur and manager. Entrepreneurship – Concept, growth, role in economic development. Objectives of entrepreneurship development programmes (EDP). Women entrepreneurs – concept, functions, growth, problems. Rural entrepreneurship – meaning, need, problems. Factors affecting entrepreneurial growth and motivation. Project formulation, accounting and book keeping.

SCHEDULE OF PRACTICALS:

Visits to journalist entrepreneurs

Study and presentation of case studies of journalists who are successful entrepreneurs

Visits to finance institutions

Project identification and selection in journalism

Project formulation

Presentation and discussions

Accounting & bookkeeping

Case studies of the press

Supporting Course

ENG–103 STRUCTURAL AND SPOKEN ENGLISH 2(1+1)

Theory

Error analysis, concord, collocation, preposition, acronyms, classified ads and Circulars, formal correspondence on technical and other subjects. Report writing on technical topics, comprehension (text based).

Practicals

1. List of English speech sounds
2. Phonemes, principles of transcription
3. Phonetic transcription
4. Stress- the nature of stress, stress in English
5. Word stress- rhythmical variations-emphasis, weak forms of words
6. Communicative value of sentences
7. Importance of the use of dictionary and encyclopedia
8. Actual use of dictionary and encyclopedia
9. Facing an interview – importance and significance
10. Preparation for interviews
11. Speaking on a given topic, importance of public speech, public speech as a part and parcel of modern life
12. How to be a successful public speaker
13. Actual exercises in speaking on a given topic
14. Important presentation
15. Actual exercises in imprompt presentation

DEPARTMENT OF FAMILY RESOURCE MANAGEMENT

Course No.	Course Titles	Credit hrs.
FRM 101	Principles of Family Resource Management	2(2+0)
FRM 102	Family Finance Management and Consumer Education	4(3+1)
FRM 201	Housing and Space Management	2(1+1)
FRM 202	Art Principles and Interior Enrichment	2(1+1)
FRM 203	Household Equipment	2(1+1)
	TOTAL	**12(8+4)**

PROFESSIONAL ELECTIVE

INTERIOR DESIGN

MAJOR COURSES (50 Credit Hours)

FRM 301	Traditional and contemporary interiors	2(2+0)
FRM 302	Graphics and Rendering in Interior Design	4(1+3)
FRM 303	Computer Aided Design in Interiors -I	2(1+1)
FRM 304	Space and Storage Design	4(2+2)
FRM 305	Furniture and Furniture Arrangement	3(1+2)
FRM 306	Floor, Wall, Window and Fixtures in Interior design	4(2+2)
FRM 401	Computer Aided Design in Interiors -II	3(0+3)
FRM 402	Functional interiors for special needs	4(1+3)
FRM 403	Applied Craft and Accessories in Interior Enrichment	4(2+2)
FRM 410	Experiential Learning	10 (0+10)
FRM 411	Implant Training	10 (0+10)
	Total	**50 (12+38)**

SUPPORTIVE COURSES **10 (0+10)**

FRM-101 PRINCIPLES OF FAMILY RESOURCE MANAGEMENT 2(2+0)

Practicals

Concept, definition, scope and significance of family resource management. Concepts & definition of management and communication in management, managerial functions of families & management process-planning, organizing, controlling and evaluating. Values, goals and standards-types & importance in family living . Resource-concept, definition types & characteristics. Money-definition & functions of money, Time-time plan, steps in preparation of time plan. Energy-static & dynamic efforts, energy requirement for household activities, Work simplification techniques and Mundle's classes of; change in the household activities, Decision making, types & steps in decision making & factors affecting in decision making. Wants-definition, nature, characteristics & classification of wants. Postures-types of postures, maintenance of good postures in household activities, Fatigue-types, avoidance of fatigue.

FRM-102 FAMILY FINANCE MANAGEMENT AND CONSUMER EDUCATION 4(3+1)

Theory

Meaning and scope of family finance management. Family income definition types & factors affecting family income & Methods of handling family income. Budgeting: Meaning, chief expenditure items budgeting steps preparation of family budget, Engel's laws of consumption. Account and record maintenance. Credit-type, use and credit institutions. Planning for family's financial security-need & types of savings, investments and insurance. Taxation-concept, types a taxes. Will-Importance of will in family wealth security and procedure. Consumer Education–aim and purpose. Consumer-definition and role, consumer problems in rural and urban areas. Consumerism and its growth. Consumer's rights and responsibilities. Unfair trade practices-Adulteration, faulty weights and measures etc. Sources of consumer information-advertisements, printed information, audio-visual communications labels, packages etc. Consumer welfare- consumer protection laws, guidelines to become a wise consumer. Consumer organizations.

Practicals

1. Preparing personal budget and recording of income and expenditure pattern for a month
2. Preparing family budget, recording and maintenance of income and expenditure pattern of a family for a month
3. Organizing a guest lecture on "Money transactions in banks"
4. Visit to Banks and financing, Institution to study types of saving & credits.
5. Calculation of cost of credit cash and installment buying
6. Guest lecture on income tax and will preparation
7. Lecture on 'Insurance'
8. Preparation of consumer education materials on adulteration and faulty weight & measures.
9. Analysis of different labels and brands of consumer products
10. Market survey on different standardized marks of consumer products
11. A household survey on consumer awareness and problems
12. Visit to consumer protection organizations
13. Organizing exhibitions on consumer education

FRM-201 HOUSING AND SPACE MANAGEMENT 2(1+1)

Theory

Importance of housing and housing condition in India. Housing needs and Factors affecting the housing needs. Merits and demerits of owning and renting the house. House planning-selection of site, factors affecting the selection. Building byelaws, House planning, principles of planning, types of plan, factor-affecting planning, planning the house for different income groups and for different activities Functional designing of work areas and storage space management. Building materials for construction, low cost building materials and economy in constructing a house. House wiring-electrical fittings and fixtures. Housing schemes-Government, semi-government and private schemes. Housing schemes.

Practicals

1. Collection of literature on housing
2. Use of architectural symbols in house plans
3. Drawing setbacks for residential building for various site dimensions
4. Field visits to study different stages of house construction.
5. Development of House plans for different income groups
6. Economically weaker section, low, middle & high income group
7. House visit to observe different types of kitchen
8. Different types of kitchen plans
    - L shaped kitchen
    - U shaped kitchen
    - Corridor kitchen(Two wall kitchens)
    - One wall kitchen
9. Drawing of plan for Electrical wiring, fitting & fixtures.

FRM-202 ART PRINCIPLES AND INTERIOR ENRICHMENT 2(1+1)

Theory

Application of elements of art and principles of design in interior and exterior enrichment Colour-theories, properties, colour schemes, characteristics and effect in interiors. Furniture-types of material, selection and arrangement. Wall, floor and window enrichment, treatment of problematic windows. Flower arrangement, principles & styles. Lighting-types, lighting fixtures, lighting requirement for various activities. Use of accessories in interior enrichment and table setting.

Practicals

1.Study on elements of art – Line, Shape/form, Texture, Colour, Patterns, Light, Space
Study of principles of design – Proportion, Balance, Rhythm, Emphasis, Harmony
Study and application of colour in Art principles - Classification of colours, Qualities of colour, Colour scheme
Flower arrangement- Types of arrangements, Styles in flower arrangements
Study of lighting in interior decoration - Types of lighting
Furniture arrangement- Selection of furniture, Furniture arrangement in different rooms, Applications of accessories in interior decoration
Demonstration on placement of accessories on dinning table
Application of elements of art & principles of design in Alpana & rangoli
Preparation of various types of accessories - Pot painting, decorative paper cuttings, Functional & decorative out cuter.

FRM-203 HOUSEHOLD EQUIPMENT 2(1+1)

Introduction to household equipment. Materials used for household equipment-Base materials, finishes and insulating materials. Basic manufacturing processes-Methods of forming utensils & assembling methods. Factors affecting selection of equipment. Basics of electricity-wiring and circuits, motors, safety devices and electrical accessories. Classification of equipment-electrical and non electrical (tools, utensils etc.). Drudgery reducing equipment. Use and maintenance of household equipment. Energy crisis-conventional and non-conventional energy sources, conservation of energy.

PRACTICALS:

1. Identification of base materials based on properties & characteristics
2. Market survey on availability of kitchen wares of different types of finishes and insulating materials.
3. Demonstration on use, care and maintenance of electrical and non-electrical equipment – Electrical, Vaccum cleaner, Microwave oven, Mixer, Washing machine, Refrigerator, Agnafand, Iron box, Juice maker
4. Non-electrical – Cooker, Stoves, Water filter
5. Market survey on the availability of different types of equipment related to-food, cleaning, laundry & recreation.
6. Household survey on possession of equipment related to food, cleaning, laundry & recreation.
7. Visit to the department of electrical engineering to study the conducting of common laboratory test for household equipment-Input test, Insulation test, Capacity test.
8. Demonstration on fuse replacement and electrical connections
9. Demonstration on solar household equipment
10. Visit to biogas plant, in different places
11. Construction details, uses and maintenance of smokeless chulha

PROFESSIONAL ELECTIVE: INTERIOR DESIGN

FRM -301 TRADITIONAL AND CONTEMPORARY INTERIORS 2(2+0)

Theory:

Indian art and handicrafts - carpets, decorative textiles, pottery, wood and metal carving with reference to selection of form and motifs. Historical background of development of furniture style - terminology used in furniture style, general features of furniture in different styles. Historical development of architecture and interior decoration from ancient period to modern age. Study of Styles and characteristics of adaptation of designs in-Renaissance, Baroque, Rococo, Neoclassic, Victorian and American style period. History of Indian folk art-function and symbolic meaning of folk art on walls, floor & ceilings etc. Study of Greek architecture with reference to proportion & scale.

FRM 302 GRAPHICS AND RENDERING IN INTERIOR DESIGN 4(1+3)

Theory:

Introduction to architecture and interior, drawing process- dry media, wet media and surfaces. Drawing processes- use of drawing instruments –T square, set square ,compass, dividers , lettering, stencils, templates, drawing pens etc. Free hand drawing and rendering of natural , man made , architectural and human forms , land, space and interiors..

Practicals

1. Exercise on different drawing processes for interior designing
2. Use of scales and dimension in rendering:
3. Exercise on lettering styles and lettering styles to numerals
4. Exercise on development of drawing of perspective, categories of perspective drawing and basic vocabularies drawings
5. Isometric projection and Orthographic projections
6. Axonometric projection
7. Projection of solids –section of solids
8. Isometric and orthographic view of an object and staircase
9. Exercise on types of drawings and its application in interior design
10. Drawings on space planning with furniture and other interiors in
    - Residential building, - Commercial building ,

FRM-303 COMPUTER AIDED DESIGN IN INTERIORS – I 2(1+1)

Theory

Introduction to Computer Aided Design (CAD) software in interiors – software commands. Application of MS word in interior design – Note pad, Paint, Power Point and Photoshop. Application of multiple drawing effect in interior design.

Practicals

1. Application of MS word in interior design
2. Introduction to commands of CAD software
3. Drawing lines –learning commands for drawing, various lines, change of line types, connecting erasing and editing lines
4. Drawing circle – learning commands for drawing circles of different diameter.
5. Drawing art – types, erasing, editing and practicing.
6. Drawing solid object –learning commands to draw solid objects
7. Producing multiple drawing – use of mirror, offset and copy commands
8. Editing drawings through edit modify, D-edit, break, trim, explode and scale commands.
9. Creating coloured potters –using layer, fill, hatch and change commands

FRM-304 SPACE AND STORAGE DESIGN 4(2+2)

Theory

Space requirement for various activities and for purposes - living room, bedroom, kitchen, general areas and multipurpose room. Application of techniques for space illusions. Storage-need and importance for different purposes in different rooms. Types of storage units – built-in, projected and movable units, care and maintenance. Ergonomic designing of space and storage for various work areas and rooms.

Practicals

1. Visit to analyze space designs for various activities in low , middle and high income houses
2. Space plan and sketching of interior arrangement for various incomes
3. Room layout by using space saving devices
4. Creation of space illusions by using different techniques
5. Mirror, glass, light
6. Connecting interior with exteriors
7. Elements of Art and principles of design
8. Analysis of storage needs for family structure and component.
9. Recording of reaches and body measurements needed for storage design
10. Market study on various types of materials of storage units
11. Sketching of different types of storage designs based on ergonomic principles-Built in storage, Projected storage, Movable storage and Storage units in furniture
12. Visit to modular kitchen designer shop
13. Visit to analysis of Storage designs in commercial buildings

FRM-305 FURNITURE AND FURNITURE ARRANGEMENT 3(1+2)

Theory:

Study of furniture-types and factors considered for selection. Care and maintenance of furniture. Application of ergonomic principles and scale in designing of furniture. Furniture arrangement – principles and use of templates.

Practicals

1. Study and development of furniture templates
2. Market survey to study the furniture trend and materials
3. Illustrations of furniture arrangements in various rooms & occasions.
4. Visit to study the use & arrangement of furniture in houses
   Residential buildings
   Commercial buildings
5. Visit to furniture manufacturing units
6. Demonstration on application of finishes to the furniture
   - paint, varnishes and polishes
7. Evaluation of furniture design based on ergonomic principles
   - Household and office furniture.

FRM-306 FLOOR, WALL, WINDOW AND FIXTURES IN INTERIOR DESIGN 4(2+2)

Theory:

Floor – types materials, characteristics, care and maintenance. Carpet and rugs- types. materials used in carpet, factors for selection – character, style, colour, pattern, texture, durability, cost, size and season. Indoor and out door carpeting. Storage of floor coverings – pre treatment, storage techniques.. Steps in laying different floorings. Wall elements- walls windows,doors,and fire places, types and styles. Wall treatments – exterior and interior wall materials, Finishes and surfacing-wall papers, paints and wood paneling, lamination, ceramic tiles, linoleum and fabrics, Care and maintenance. Door and Window treatment-problematic window treatment methods. Factors influencing in choice of treatments. Curtains and draperies –styles, materials,care and maintenance. Sanitary fittings and fixtures, fittings and fixtures-for interior, windows, cupboard and built-in units in various rooms. Safety Fittings.

Practicals

1. Visit to firms to identify the resilient and non resilient types of floors in terms of types, characteristics & cost. Collection of samples
2. Market survey to study the availability of cleaning materials for different floors.
3. Selection, Care and Maintenance of floors - Techniques used for cleaning of floor materials
4. Market survey of availability of floor covering and sample collection
5. Visit to site locations to study the different types of floor coverings:
6. Soft floor covering -Carpets and rugs - Hard flooring- Wood flooring
7. Demonstration on laying of floor covering
8. Visit for identification of exterior and interior wall finishes –residential and commercial buildings Visit to study the latest techniques of wall finishes in residential and commercial buildings
9. Identification of window types, trends and method of window treatments
10. Market survey of available drapery and curtain materials and cost estimation
11. Illustration of types of curtains
12. Planning and sketching of window dressing for different types of windows and problematic window treatment Preparation of sample cut-outs for window dressing
13. Assessment of window dressing in various residential and commercial buildings
14. Market survey of latest designs of various types of fittings and fixtures for different rooms Electrical ,Hinges ,Latches, Handles, Sanitary fittings
15. Illustrating different fittings and fixtures available for doors, windows, floors, cupboards, work surface units, cabinets for different rooms and exteriors
16. Illustration of traditional and contemporary architectural luminaries
17. Planning appropriate lighting fixtures and fitting in various rooms of residence
18. Visit to residential areas to study lighting fixtures and fittings
19. Visit to commercial areas to study lighting fixtures and fittings

FRM-401 COMPUTER AIDED DESIGN INTERIORS –II 3(0+3)

Practicals

1. Creation of 2D plans for interiors and elevations
2. Creating mass objects from 2D plans
3. Space planning for the objects, creating walls and floors through slices
4. Exercise on changing openings – doors, windows, roof, and insertion of stairs, creation of elevations.
5. Importing of interior decoration objects- furniture, accessories, lighting fixtures, planning, electrical, landscape, vehicles,
6. Creation of layers and symbols in interior design
7. Development of designs for interiors by using- Colour schemes, Lighting, Wall and floor coverings, Furniture arrangement, Accessories
8. Generating interior perspectives using camera and target
9. Exercise on multifunctional interior and exterior residential buildings.
10. Presentation of developed interior design.
11. Creating walk through 3D's max
12. Development of floor plan, elevation and perspective plans for various income groups.

FRM–402 FUNCTIONAL INTERIORS FOR SPECIAL NEEDS 4(1+3)

Theory:

Introduction to planning of functional housing – Meaning of functional design, special needs – children, elderly and physically challenged. Planning and designing interiors for independent congregate and shared living. Planning and designing for nursing care in residential buildings. Application of ergonomic principles for designing of interiors for special needs.

Practicals

1. Visit to the institutions of physically challenged groups to study their needs
2. Exercise on the requirement of furniture with reference to special need of population – Children, Physically Challenged, Elders
3. Survey to collect information for designing of interior for special needs
4. Planning and development of functional interior plans for
5. Specific purpose – Elders, Children, Physically Challenged
6. Planning lighting in interiors for special needs
7. Planning and designing of functional interior for
8. Independent living, Congregate living, Shared living
9. Application of ergonomic principles for designing of work area for - physically challenged, Elderly
10. Planning and designing interior for nursing care

FRM-403 APPLIED CRAFTS AND ACCESSORIES IN INTERIOR ENRICHMENT 4(2+2)

Theory:

Selection of basic material for crafts. Study the characteristics of the material and introduction to accessories in interiors. Classification, selection and use of accessories, placement of accessories using principles of art in interior enrichment. Care and maintenance of accessories – wooden, metal and cloth. Introduction to ornamental plants. Indoor plants identification and maintenance. Pot arrangement, maintenance of plants. Flower arrangement –conditioning and care of flowers and foliage. Selection and preparation of plant materials for drying, preservation of flower and foliage and application of colour. Flower arrangement styles for different areas, occasions. Preparation of flower arrangements, bouquets and garlands.

Practicals

1. Survey of basic materials for crafts.
2. Developing of motives based on element of art and principles of design
3. Preparation of accessories using different types of designs
4. Preparation of handicrafts
5. Development of accessories for various rooms.
6. Demonstration on Care and maintenance of ornamental plants, indoor plants, and lawns
7. Methods of handling foliage and plant materials. Cutting, Care, Handling and preservation of foliage and plant materials
8. Visit to various gardens: residential, institutional and public gardens
9. Study of equipment and tools needed for maintenance of
10. -Lawn ,-Indoor plants ,-Bonsai
11. Study of containers and accessories for flower arrangement
12. Sketching flower arrangement
13. Selection, care, handling of cut flowers
14. Styles of flower arrangement for different places and occasions
15. Drying techniques of flowers and foliage and arrangement of dried flowers

SUPPORTIVE COURSES:

HRT-403 FLORICULTURE AND LANDSCAPE GARDENING 2(1+1)

Theory

Importance of floriculture, Problems and prospects of floriculture industry on India. Principles of landscape gardening, types and styles of ornamental gardens-Formal, informal, free style, Mughal, English, Japanese and Italian gardens. Garden components and plants used for landscape gardening. Indoor gardening, Bonsai, flower arrangements.

Practicals

1. Visit to gardens.
2. Identification of annuals and biennials.
3. Identification of shrubs.
4. Identification trees and climbers.
5. Garden components and plants used.
6. Garden components and plants used-contd.
7. Planning and layout of ornamental garden.
8. Planning and layout of ornamental garden.
9. Planning and layout of ornamental garden-contd.
10. Indoor gardening.
11. Bonsai culture.
12. Flower arrangements, in vases and interior decoration.
13. Establishment and maintenance of lawn.
14. Rock gardens.
15. Propagation of methods for ornamental plants.
16. Ornamental seeds and nursery raising.
17. Planting and after care of ornamental plants.
18. Pest, disease and plant protection of ornamental plants.

HRT-404 COMMERCIAL FLOWER PRODUCTION 3(2+1)

Theory

Present status, scope and export potential of commercial flowers in India. Major constraints in production of flowers. Cultivation of important commercial flowers like rose, marigold, gladiolus, chrysanthemum, tuberose, dahlia, aster, Gerber, carnation and jasminum species with reference to soil, climate, propagation, varieties, manure and fertilizer requirement; Cultivation of flowers under forced conditions; Cultural operations and storage of propagating materials, post-harvest handling of cut flowers. Orchids and anthuriums-commercial types and their culture.

Practicals

1. Study of varieties, propagation, special operation and plant protection of - Rose
   - i. - do - - Marigold
   - ii. - do - - Gladiolus
   - iii. - do - - Chrysanthemum
   - iv. - do - - Tuberose
   - v. - do - - Dahlia
   - vi. - do - - Gerber
   - vii. - do - - Aster
   - viii. - do - - Carnation
   - ix. - do - - Jasmine
   - x. - do - - Orchids and Anthurium
2. Culture of commercial flowers under protected structure - Gerber
   - i. - do - - Rose
   - ii. - do - - Carnation
3. Seed production of commercial flowers
4. Post-harvest handling of flowers
5. Post-harvest handling of flowers

ENG-301 STRUCTURAL AND SPOKEN ENGLISH 2(1+1)

Theory

Error analysis, concord, collocation, preposition, acronyms, classified add and circulars, formal correspondence on technical and other subjects; Report writing on technical topics, comprehension (text based)

1. List of English Speech Sounds.
2. Phonemes, principles of transcription.
3. Phonetic transcription.
4. Stress-The nature of stress, stress in English.
5. Word stress-Rhythmical variations-emphasis, weak forms of words.
6. Communicative value of sentences.
7. Importance of the use of dictionary and encyclopedia.
8. Actual use of dictionary and encyclopedia.
9. Facing an interview-Importance and significance of interviews.
10. Preparation for interviews.
11. Speaking on a given topic-Importance of public speech-public speech as part and parcel of modern life.
12. How to be a successful public speaker.
13. Actual exercises in speaking on a given topic.
14. Imprompt presentation-Its importance and use.
15. Actual exercises in imprompt presentation.

DEPARTMENT OF FOOD SCIENCE AND NUTRITION

Course No	Course Title	Credit hours
FSN 101	Elements of Food Science	3(2+1)
FSN 102	Introduction to Human Nutrition	3(3+0)
FSN 201	Elementary Normal and Therapeutic Nutrition	3(2+1)
FSN 202	Principles of Food Preservation	3(1+2)
	TOTAL	**12(8+4)**

PROFESSIONAL ELECTIVE

Dietetics and Catering Management (50 credits)

Course No.	Course Title	Credit hrs.
FSN 301	Human Nutrition	2+0
FSN 302	Clinical Nutrition	2+1
FSN 303	Food Analysis	1+2
FSN 304	Community Nutrition	2+1
FSN 305	Catering Management	1+2
FSN 306	Diet Therapy	2+2
FSN 307	Nutrition Education & Counseling	1+2
FSN 308	Hospital Dietetics	1+3
FSN 309	Food Standards & Quality Control	2+1
FSN 401	Bakery & Confectionary	0+2
FSN 410	Experiential Learning	10 (0+10)
FSN 411	Implant Training	10 (0+10)
	TOTAL	**50(14+36)**

SUPPORTING COURSES **10 (0+10)**

FSN-101 ELEMENTS OF FOOD SCIENCE 3(2+1)

Theory

Food Groups and Nutrients Contribution. Composition and Nutritive value of cereals and millets, pulses, nuts and oilseeds, dairy products, meat, fish and poultry, vegetables, fruits, fats and oils, sugar and jaggery, honey, beverages, spices and condiments. Food processing- soaking, sprouting, grinding, cutting, fermentation, boiling, steaming, roasting, broiling, braising, barbecuing frying and baking. Recent techniques of food processing. Cooking in Hay Box, Solar Cooker, Pressure Cooker and Microwave Oven. Effect of processing on the composition and nutritive value of foods. Processed and convenience foods. Importance of traditional foods. Sensory evaluation of products.

Practicals

1. Orientation to various equipment used in cookery
2. Methods of measuring food ingredients
3. Methods of cooking
4. Cookery of the following :
5. Cereals, Pulses, Nuts and oil seeds, Milk and milk products, Vegetables and fruits, Sugar, Egg, Fleshy foods, Cold and hot beverages, Bakery and confectioneries
6. Use of Convenience foods in cooking
7. Standardization and sensory evaluation of foods
8. Market survey of available raw and processed foods
9. Visits to food processing units

FSN-102 INTRODUCTION TO HUMAN NUTRITION 3(3+0)

Theory

Definitions and terminologies used in nutrition. Brief history of nutrition. Relationship of nutrition to health, growth and human welfare. Recommended Dietary Allowances for Indians. Classification, functions, sources, requirements, effects of deficiency and excess of carbohydrates. fats and proteins. Importance of water in nutrition. Digestion and absorption of foods. Energy value of foods. Energy expenditure of individuals. Basal metabolic rate (BMR) and factors affecting BMR, physical activities, specific dynamic action and energy requirements. Computation of energy requirements. Vitamins and minerals- classification, functions, sources, deficiencies and toxicity. Relationship between nutrition and food production.

FSN-201 ELEMENTARY NORMAL AND THERAPEUTIC NUTRITION 3(2+1)

Theory

Basic principles of meal planning, planning menus for the individual and family. Use of food groups and food exchange list in meal planning. Planning breakfast, lunch, tea, dinner, packed and working lunch and snacks. Considering Recommended Dietary Allowances of individuals. Balanced diet- meaning and definition. Planning diets for infant, pre-school children, school going children, adolescents and adults- for different activities and gender. Geriatric nutrition- physiological and psychological, cultural factors affecting the diet plan. Meal planning for special occasions. Importance of therapeutic diets. Modification of normal diets to different conditions; principles of diet therapy; scope of dietetics; Role of dietitians. Requirements of dietetic department. Dietary modification in under weight and over weight, pre and post surgical conditions, fevers and infections; Causes, symptoms and dietary treatment of protein, mineral and Vitamin deficiencies Etiology, symptoms and dietary treatment of gastro-intestinal, cardio-vascular, renal disorders and diabetes. Dietary recommendation for blood donors. Food allergy; Diet following burns; Dietary factors related to cancer.

Practicals

1. Computation of average nutrient content of different food stuffs and standardization of serving sizes.
2. Survey of market rates of locally available (raw and processed) foods.
3. Planning, Preparation and nutrient calculation of breakfast, lunch, packed lunch and working lunch.
4. Planning snack, brunch and dinner
5. Planning whole day meal for an adult man for various occupational and income groups
6. Planning whole day meal for infants, preschool and school children
7. Planning whole day meal for adolescents and elderly
8. Planning meals for pregnant and lactating mother
9. Meal planning for special occasions and formal and informal table setting
10. Modification & Preparation of normal diet-liquid, soft and mechanical soft diet
11. Planning diet for over weight and under weight person
12. Planning diet for infections and fevers
13. Planning diet for mineral and vitamin deficiencies
14. Planning diet for gastrointestinal tract and liver disorders
15. Planning diet for cardiovascular diseases
16. Planning diet for renal disorders
17. Planning diet for diabetes mellitus

FSN-202 PRINCIPLES OF FOOD PRESERVATION 3(1+2)

Theory

Importance, scope, principles and methods of preservation. Food additives-preservatives, antioxidants, food colours and emulsifying agents. Selection and purchase of fruits and vegetables for preservation. Causes and factors affecting food spoilage, storage and spoilage of preserved food. Effect of processing, preservation and storage on various nutrients. Quality control- meaning and importance. Quality standards, sampling and specifications of materials/products for testing the quality. Unit operations in food processing. Packaging of processed foods- materials and methods.

Practicals

Preparation of ready-to-serve beverages

Varieties of jams

Jellies

Marmalades

Varieties of pickles

Chutneys, squashes, cordials, sauces

Drying and dehydration of fruits and vegetable by different methods-sun,solar,oven

Osmotic dehydration of canning of fruits and vegetables in Industry

Visit and demonstration of canning of fruits and vegetables in Industry

Preparation of fruit bars, candies, bottling of fruit juices and fruit nectars

Meat preservation-pickle, sausage, drying and freezing

Egg pickling

Fish preservation by drying

Milk preservation by condensation

Preparation of raisins

Sensory evaluation of preserved products

Identification of spoilage and microbial count of a spoilt sample

Visit to food processing units

Professional Elective - Dietetics and Catering Management

FSN 301 HUMAN NUTRITION 2+0

Theory

Human body composition-compositional changes in different stages of life, physiological influence. Methods of determining body composition. Body composition in relation to basal metabolic rate. Minerals-macro and micro- physiological and biochemical functions, sources, absorption and metabolism. Basis of Recommended Dietary Allowances(RDA) of various nutrients. RDA for energy, protein, fats, vitamins and minerals for different age groups, activities and physiological conditions. Dietary fiber - composition, types, physiological functions and sources. Antioxidants-types, physiological functions and sources. Role of phytochemicals in nutrition. Nutrient inter relationships- macro and micro nutrient inter relationship in absorption and metabolism. An overview of groups with special nutritional needs . Dietary management of industrial workers, sports persons, defense personnel. Diet and nutritional care during emergencies.

FSN-302 CLINICAL NUTRITION 3(2+1)

Theory

Etiology, symptoms and clinical status in terms of alterations in blood and urine constituents in pathological conditions- liver disorders (jaundice, hepatitis, cirrhosis), cardio-vascular disorders (atherosclerosis. hyper lipdemia,. hyper tension), obesity (grade I, II), infections (fever, HIV) and alcoholism. Interpretation of clinical report of blood and urine in different pathological conditions. Changes in physiological and biochemical functions during illness and alcoholism. Interaction among nutrients, infection and drugs.

Practicals

1. Blood analysis: glucose and ESR
2. Lipid profile estimation in serum-total cholesterol, HDL, LDL, VLDL cholesterol, triglycerides
3. Analysis of urea in blood
4. Estimation of serum creatinine
5. Estimation of bilirubin, total proteins, albumin, globulin
6. Estimation of enzymes in serum-SGOT, SGPT, alkaline phosphatase
7. Urine analysis- micro-albumin tests
8. Estimation of sugar
9. Estimation of creatinine
10. Visit to diagnostic laboratories of Hospital/Nursing Home

FSN-303 FOOD ANALYSIS 3(1+2)

Theory

Sample and sampling technique for food analysis. Principles and techniques of physico-chemical analysis. Methods of estimation of nutrients in food stuffs. Principles and techniques of different instruments used in food analysis.

Practicals

1. Food sampling and preparation of food sample for analysis
2. Study of physico-chemical characteristics of grains and flour
3. Determination of cooking quality of grains-cooked weight, volume, percent gain in weight, per cent loss of leached solids after cooking and physico-chemical characters of flour
4. Analysis of physico-chemical characteristics of water: colour, odour, taste, turbidity, total solids and organic matter
5. Determination of physical quality characteristics of fruits and vegetables-weight, appearance, size, shape, juiciness.
6. Determination of total soluble solid contents of fruits and vegetables
7. Determination of insoluble solids and pulp content of juice
8. Estimation of pectin content of foods
9. Measurement of jelly strength
10. Quality assessment of dehydrated fruits and vegetables-moisture, peroxidase reaction, bulk density and rehydration test
11. Examination of canned fruits and vegetables-appearance, gross head space, drained weight, syrup or brine quality, firmness of fruit and flavour.
12. Estimation of fat content in milk and recording specific gravity. Curd strength determination of blended milks
13. Grading of egg. Determination of quality of fresh and stored eggs.
14. Determination of functional quality of egg white and yolk
15. Observations of changes in sugar at different temperature and concentrations
16. Analysis of proximate composition of foods-protein, fat, ash, crude fiber and moisture

Estimation of: i) Reducing and non reducing sugars
Starch & its components
ii) Total dietary fiber
iii) Free fatty acids, peroxide value, iodine value, acid value of fats of fresh and stored products
iv) Vitamin C in fruits and vegetables
v) Calcium and phosphorous content of foods
vi) Trace elements- Iron, zinc, manganese, copper
vii) B-carotene content of foods
viii) Flourine in water
ix) Iodine

FSN-304 COMMUNITY NUTRITION 3(2+1)

Theory

Scope of community nutrition. Food habits. Economic, social and cultural factors influencing food fallacies and fads. Malnutrition among vulnerable groups. Growth monitoring. Assessment of nutritional status- Direct and indirect methods-anthropometry, dietary, clinical, biochemical and vital statistics. Nutritional problems prevalent in India and measures to combat. National nutrition programmes. Projects related to community nutrition; Government and non-government. Objectives and functions of national, international agencies and voluntary organizations. Food adulteration - adulterants and methods of detection. Food laws in India and consumer protection.

Practicals

1. Identify causes of malnutrition in a selected community by Participatory Rural Appraisal technique.
2. Preparation of local calendar for age assessment
3. Assessing nutritional status by anthropometry among different age groups: - preschool children
4. school age children
5. adolescents
6. adults
7. geriatrics
8. Tabulation, computation of indices and interpretation of anthropometric data
9. Assessing the nutritional status by dietary survey and interpretation of data:
10. 24 hours recall method
11. weighment method
12. log book (Inventory) method
13. Identification of clinical indicator symptoms of deficiency in community
14. Tests for detecting food adulteration
15. Observation of health and nutrition activities of ICDS
16. Visit to PHC/MCH to observe prophylactic programmes and collecting vital statistics
17. Assessing nutritional status through indigenous methods
18. Visit to voluntary organizations to observe nutritional activities

FSN-305 CATERING MANAGEMENT-I 3(1+2)

Theory

Type and development of food service institutions. Organization, Management and administration of food service institutions. Role of food service managers and dietitians. Meal planning for institutions. Quality food standards, Food Selection, Purchase and Storage. Large scale preparation, delivery system and service of food. Cuisine served in institutions. Cost control - factors affecting and methods of pricing food, Book keeping and accounting. Floor planning and layout. Equipment and furnishings for kitchen and dining room. Sanitation and safety.

Practicals

1. Visits to various Food Service Institutions
2. Standardization of snacks
3. Standardization of meals
4. Serving of tea and snacks for 25 persons
5. Serving "High Tea' for 20 persons
6. Serving formal meal for 10persons
7. Running a canteen for one month

FSN-306 DIET THERAPY 4(2+2)

Theory

Diet therapy - importance and scope. Therapeutic adaptations of normal diet. Commercial preparations for therapeutic use. Methods and problems of feeding patients. Management of dietetics department. Etiology, symptoms and dietary management of over weight, under weight, viral fever, HIV, malaria, measles, pneumonia, typhoid, tuberculosis and gout. Etiology, symptoms and dietary treatment cardiovascular, gastro intestinal. Liver, food allergy, renal, diabetes and other metabolic disorders. Dietary recommendations for blood donors. Diet following burns. Dietary factors related to cancer.

Practicals

1. Use of food exchange list in therapeutic planning
2. Planning and nutrient calculation of normal hospital, soft and liquid diets
3. Preparation of normal hospital, soft and liquid diets
4. Planning and preparation of modified diets for different conditions:

i) Low calorie diet, High calorie diet, High protein diet, Low protein diet, Low fat diet
ii) High energy, high protein diet
iii) High fiber diet
iv) Low fiber and low residue diets
v) Calcium rich diet
vi) Iron rich diet

5. Market survey to know the availability of therapeutic foods
6. Planning diets for different diseases and disorders

Typhoid
Tuberculosis
Atherosclerosis
Obesity and under weight
Diarrhea and dysentary
Constipation
Peptic ulcer
Jaundice and hepatitis
Acute glomerulo nephritis
Renal failure
Renal calculi
Food allergy
Burns
Blood donors
Diabetic mellitus
Gout

7. Visit to hospitals to observe the dietetic departments
8. Visit to naturopathy/ayurvedic hospitals to observe the treatment and diet prescription
9. Visit to hospitals to observe the cases and report writing
10. Visit to cancer hospital to observe the external feeding
11. visit to tuberculosis hospital

FSN 307 NUTRITION EDUCATION & COUNSELLING 1+2

Theory

Objectives, principles and importance of nutrition education. Nutritional problems and identification of target groups. Imparting nutrition education through different communication techniques for individuals, group and mass contact programmes. Developing messages for imparting nutrition education. Techniques for development of nutrition educational material and aids. Nutrition counselling for vulnerable groups and geriatrics. Counselling for dietary management of underweight, over weight, fever, diabetes, CVD, GIT, Liver and renal disorders. Nutrition and diet counselling for arthritis, cancer and gout. Planning effective counselling and nutrition education for selected groups.

Practicals

1. Preparation of nutrition instructional aids:
2. Charts, flip charts, power point slides.
3. Writing short stories/skit/poems
4. Writing popular articles/leaflets
5. Writing radio/TV talks
6. Techniques of nutrition counselling
7. Organizing nutrition education and counseling for: Preschool, children, Adolescents, Pregnant women, Lactating, mothers, Old persons
8. Organizing counseling camps for following group:
9. Gastrointestinal disorders, Liver disorders, Cardio vascular diseases, Diabetes mellitus, Protein-Energy Malnutrition, Iodine deficiency disorders, Cancer, Gout, Over weight/Under, weight

FSN 308 HOSPITAL DIETETICS 1+3

Theory

Importance of dietetics. Principles of hospital dietetics. Dietician as a part of medical team and outreach services. Dietetics department- structure, administration and function. Food service in hospital. Clinical information- medical history, assessment of patient profile. Methods of dietary assessment. Therapeutic adaptations to normal diet for consistency, temperature, nutrient and quantity. Modes of feeding – Enteral feeding: tube feeding and compositions of tube feeding. Parenteral feeding. Aesthetic attributes of diets.

Practicals

1. Study the lay-out of dietetics department
2. Planning and preparation of diets modified in terms of consistency, nutrients, temperature and quantity
3. Planning and preparation of normal hospital, soft and liquid diets for therapeutic purpose.
4. Preparation of nutritionally modified diets
5. Preparation of list of foods to be included and/or avoided in different diseases
6. Planning, preparation and serving of diets low/high in the following nutrients:
7. Energy, fiber, protein, lipids, carbohydrates, sodium, potassium, vitamin A and iron.
8. Planning and preparation of diets for patients suffering from more than one disease/ disorders.
9. Visit to dietary department of a hospital to observe functioning of the dietetics department.
10. Visit to dietary department of a hospital to observe clinical signs, diet served and consumed by the patients.

FSN 309 FOOD STANDARDS & QUALITY CONTROL 2+1

Theory

Importance of quality control and assurance, food laws and regulations. Application and specifications for food standards, food products, additives, preservatives, colouring agents, emulsifiers, stabilizers and antioxidants, Methods/techniques for assessment of quality of different foods. Hazard analysis and critical control point. Nutritional labeling, bar coding, meaning and importance. Food adulteration, detection techniques for processed foods. Municipal health services, mobile units Prevention and control of food, water and air borne diseases.

Practicals

1. PFA, FPO, Agmark, BIS and HACCP for common foods:
2. Cereals and flours, Pulses, nuts and oilseeds, Fruits and vegetables, Oil, butter, ghee, vanaspati and other fats, Milk and milk products, Sugar, jaggery and miscellaneous foods, Meat, fish and poultry, Eggs
3. Physical and chemical methods/techniques for assessment of food quality.
4. Interaction with food inspectors.
5. Quality evaluation of processed foods with cereal, pulse, vegetable, fruit, milk, milk products, meat, fish and poultry as main component by chemical and sensory methods
6. Market survey of processed foods with reference to food labeling
7. Visit to Consumer Forum/Food Quality Laboratory
8. Food adulteration tests for processed foods

FSN-401 DIET AND NUTRITION COUNSELING 2(0+2)

Theory

Process and techniques of counseling. Nutrition counseling for vulnerable groups and geriatrics. Dietary management of under weight, over weight, fevers, infections, diabetes, cardio-vascular diseases, gastro-intestinal diseases, liver disease and renal disorders. Nutrition and dietary counseling for other health conditions-arthritis, cancer, gout.

Practicals

1. Orientation to the course
2. Techniques of nutrition counseling
3. Listing the process of counseling
4. Nutrition counseling for vulnerable groups
   - Preschool children
   - Adolescents
   - Pregnant women
   - Lactating mothers
5. Nutrition counseling for geriatric group
6. Counseling in dietary management under the following conditions to a group of subjects/care takers
   - Malnourishment-under weight, over weight
   - Fever and infections
   - Metabolic disorders-diabetes
   - Diseases-cardio-vascular, gastro intestinal tract, liver and renal
   - Arthritis, cancer and gout

FSN-402 BAKERY AND CONFECTIONERY 2(0+2)

Practicals

1. Orientation to bakery and confectionery
2. Familiarization with bakery and confectionery equipment
3. Utility and suitability of ingredients used in bakery and confectionery
4. Assessment of gluten and ash content of different grades of flour
5. Exercises on balancing bakery formulae
6. Sugar cookery in confectionery
7. Standard methods for preparation of bakery products
    - biscuits, cookies, nankhatai and doughnuts
    - muffins, soufflé and macaroons
    - cream rolls, swiss rolls
    - cakes including fancy cakes
    - icings
    - pastries, western pies, Indian pies
    - breads and buns
    - pizzas
8. Standard methods for preparation of confectionery products
    - fondants western and Indian
    - fudges and chocolates
    - toffees and éclairs
    - sweet meats
9. Sensory and keeping quality evaluation of bakery and confectionery products
10. Utilization of left over bakery and confectionery products
11. Practical experiences in dietetic bakery and confectionery products
12. Commercial preparation, packaging and sales of
    - bakery products
    - confectionery products
    - low sugar products
    - no sugar products
    - high fiber foods
13. Visits to bakery units
14. Visits confectionery and dietetic units

SUPPORTING COURSES

PHH-101 HUMAN PHYSIOLOGY AND HYGIENE 3(2+1)

Theory

Cells and tissue structure, composition and functions. Reticule-endothelial system-anatomy and functions. Lymphatic system-function and circulation. Circulatory system-blood composition, blood cells, functions. Blood grouping. Heart-anatomy, cardiac cycle, blood pressure-factors affecting it. Respiratory system-Anatomy, mechanism and regulation of respiration. Digestive system-anatomy of gastro-intestinal tract and accessory organs, digestion and absorption of food. Excretory system-anatomy and functions of kidney, formation, composition and excretion of urine. Endocrine system-glands and functions. Reproductive system-anatomy and functions. Nervous system-anatomy and functions. Recognition, and control of common communicable diseases. Vaccines and Immunization. Personal hygiene-meaning, importance. Introduction to environment, sanitation-definition, meaning and importance. Causes, control and prevention of air, water, soil, noise pollution. Safe disposal of refuse and night soil-Rural and urban. Methods of sewage disposal. Health definition, Concepts, Aspects, Dimensions, Determinants of health occupational health-hazard-appraisal of health hazard-control of environment. AIDS, Caused, spread symptoms, and prevention, HIV. First-aid, scope for Haemorranage, Burns, Cuts, Fractures, Unconsciousness, convolutions, shock, bites, poisoning, Foreign bodies in eyes, Nose, throat and Artificial Respiration's.

Practicals

1. Estimation of haemoglobin, haematocrit and sedimentation rate
2. Preparation of blood slide and identification of blood cells
3. Components of blood viz., RBC, WBC
4. Estimation of Clotting and Bleeding time
5. Estimation of blood group and Rh factor
6. Learning to read blood pressure and pulse rate
7. Examination of abnormal constituents of urine
8. Learn to use clinical thermometer
9. Dressing of wounds, cuts and burns
10. First aid during fractures, burns, accidents, shocks, unconscious, convulsions, poisoning, foreign bodies in the eyes
11. Preparation of first aid triangular kit
12. Assessment of quality of water, milk, air
13. Visit to hospital to gain experience in first aid and nursing
14. Visit to primary health centres
15. Visit to vaccination institution
16. Visit to village to assess sanitation

BCH-301 GENERAL BIOCHEMISTRY 4(4+0)

Theory

Cell organelles and their functions. Carbohydrates, proteins and lipid metabolism and their aberration in pathological conditions. Uric acid formulation, muscle contraction and role of creatinine. Defects in metabolism in pathological conditions. Vitamins and minerals- metabolic functions, nutritional and clinical importance. Biomembranes and bioenergitics. Role of biochemistry in genetic engineering in diseased conditions with special reference to their use in treating genetic diseases. Enzymes and Isozymes and their importance in diagnosis of diseases.

AMB-302 PRINCIPLES OF FOOD AND DAIRY MICROBIOLOGY 3(2+1)

Theory

Introduction to Microbiology, Definition areas and branches. Structure and organization of procaryotes and eucaryotes (Bacteria and yeast). Endospore structure and function. Microbial nutrition-Major and micronutrients, nutritional classification. Microbial metabolism and energy transformations-Glycolysis, Kreb's cycle and Electron transport system.

Microorganisms associated with food and food products (Fruits, vegetables, cereals, pulses, meat, egg). Microorganisms associated with milk and milk products.

Conditions influencing growth of microorganisms in foods-Intrinsic and extrinsic factors associated with keeping quality of foods.

Determination of microorganisms, their growth and products in foods- direct and indirect methods.

Microbiology of fermented foods and use of microorganisms in food products-Bread, Temphe and Sauerkraut.

Fermentation and fermented beverages wine, beer and vinegar.

Spoiling of different foods- General principles underlying microbial spoilage of foods. Food borne infections and intoxication-Botulism, Salmonellosis, Gastroenteritis.

Indicator organisms, potability of water, Food sanitary quality and microbial standards.

Food preservation - principles and techniques-Temperature, drying, chemicals and irradiation. Factors affecting preservation.

Practicals

1. Study of Microscope
2. Study of simple and differential staining techniques
3. Measurement of microorganisms
4. Sterilization techniques
5. Preparation of culture media
6. Isolation and enumeration of microorganisms from cereals and pulses
7. Isolation and enumeration of microorganisms in fruits and vegetables
8. Bacteriological examination of milk and milk products
9. Preparation of Temphe, wine and sauerkraut
10. A study of leavening of Bread
11. Mushroom, spawn preparation and cultivation
12. Physical and Chemical methods of elimination of microorganisms in fruits and vegetables
13. Bacteriological examination of water
14. Microflora of utensils

DEPARTMENT OF HUMAN DEVELOPMENT

COURSE NO	COURSE TITLE	CREDIT HOURS
HDV 101	Pre-natal Care and Infant Development	2(1+1)
HDV 102	Early Childhood Development and Education	4(2+2)
HDV 201	Late Childhood and Adolescence	3(2+1)
HDV 202	Dynamics of Marriage and Family	3(2+1)
	TOTAL	**12(7+5)**

PROFESSIONAL ELECTIVE

ORGANISATION AND MANAGEMENT OF EARLY CHILDHOOD EDUCATION PROGRAMMES

COURSE NO	COURSE TITLE	CREDIT HOURS
HDV 301	Developmental Assessment of Young Children	1+3
HDV 302	Curriculum Development for Early Childhood Education Programmes	2+2
HDV 303	Development of Teaching Materials for Early Childhood Education Programmes	1+3
HDV 304	Literature for Children	2+2
HDV 305	Intervention Programmes for Family and Community	2+2
HDV 306	Integration of Children with Special Needs	2+2
HDV 307	Child Guidance and Parent Counselling	2+1
HDV 308	Entrepreneurship Development in Early childhood Education	1+2
HDV 410	Experiential Learning	10 (0+10)
HDV 411	Implant Training	10 (0+10)
	TOTAL	**50(12+38)**

	SUPPORTING COURSES	**10 (0+10)**

HDV-101 PRE-NATAL CARE AND INFANT DEVELOPMENT 2 (1+1)

Theory

Introduction to Human Development - Concepts, need, scope and principles of Human development. Methods of child study. Role of heredity and environment. Stages of Human development. Prenatal care- signs, discomforts and complications of pregnancy. Child birth process- signs, discomforts , stages and complications. Post natal care of mother- normal, caesarian and other assisted deliveries. Care of neonate- normal, low birth weight and premature. Infant feeding - mother's milk and supplementary feeding Physical, motor, social, emotional and cognitive development during infancy. Acquisition of language ability. Importance of early stimulation.

Practicals

1. Visit to maternity ward and antenatal clinics
2. Visit to well baby clinics
3. Film show on birth process
4. Observation of normal new born babies and reflexes.
5. Observation of low birth weight and pre-mature babies
6. Demonstration of baby's feed, bathing, dressing and bed making
7. Preparation of supplementary foods
8. Management of diarrhea
9. Plotting growth monitoring charts and interpretation
10. Observation of motor and cognitive development of infants

HDV-102 EARLY CHILDHOOD DEVELOPMENT AND EDUCATION 4 (2+2)

Theory

Concept, characteristics, developmental tasks and significance of early childhood years. Physical and motor development and factors influencing. Cognitive development - Piaget stages of cognitive and language development and factors influencing. Emotional development- classification of emotions by Bridges, age specific emotions and characteristics. Social development - concept of socialization and disciplinary practices and factors influencing socio-emotional development. Common behavior problems. Moral development- stages and influencing factors. Personality development- concept, pattern and components. Role of family, school and society in shaping personality. Significance of early childhood education. Promoting early childhood development. Activities to promote over all development. Fostering creativity among children. Importance and types of play. Parent involvement in early childhood care and education programmes.

Practicals

1. Visit to different ECE centers
2. Observation and recording of developments:
3. Physical
4. Motor
5. Cognitive
6. Language
7. Social
8. Emotional
9. Planning and conducting activities for promoting developments :
10. Physical
11. Motor
12. Cognitive
13. Language
14. Social
15. Multidimensional activities
16. Observation and organizing Parent Teacher Association

HDV-201 LATE CHILDHOOD AND ADOLESCENCE 3(2+1)

Theory

Late Childhood-Concept, characteristics and developmental tasks of late childhood. Physical development, motor skills and factors influencing. Cognitive development - Piaget's stages. Changes in language abilities, factors influencing and ways of promoting cognitive and language development. Moral development - Piaget's and Kohlberg's stages. Social development- socialization, gang, functions and characteristics. Emotional development- pattern of emotional development, emotional dominance, balance, control and catharsis. Gender role development. Role of family, school and peers in all developments. Pubertal changes- physical and psychological implications.

Adolescence-Introduction. Characteristics, developmental tasks, difficulties during transitional period and helping measures. Emotions - common emotional pattern, heightened emotionality, coping mechanism, maturity and adjustment. Socialization - difficulties in social transition, attitudes and behaviours. Influence of peers, confirmity and self assertiveness. Cognitive development. Morality and personality development. Factors affecting identity crises and personality integration. Developmental hazards during late childhood and adolescence. Transition in family relations. Problems during adolescence and counseling. Educational guidance.

Practicals

1. Assessment of - Motor skills, Intelligence, Cognitive abilities Self concept and socio-metric status.
2. Study of - Interest, values and extracurricular activities, Gender role development, Media consumption, Adolescence
3. Assessment of pubertal changes (self report)
4. Study of - Interest, values and extracurricular activities, Media consumption, Prejudice / gender stereotype, Self concept

HDV-202 DYNAMICS OF MARRIAGE AND FAMILY 3(2+1)

Theory

Marriage-Rationale for marriage and family studies. Marriage - meaning, definition, types, motives and functions of marriage. Readiness for marriage - physiological, social, psychological, economic and related factors. Changes in criteria and modes of mate selection. Premarital guidance and counseling. Customs, traditions and marriage rituals in different communities. Dowry practice, bride price and shreedhan in marriage. Marital harmony - adaptability, compatibility, skill, effort, commitment and support. Planning for parenthood. Alternatives to marriage - single hood and consensual unions and socio-emotional implications.

Family-Origin, evolution, definition and classification. Change in structure and forms of family across cultures. Rural and urban family, typical and alternate forms of family, single parent family, female headed family, migrant family, dual earner family, childless, reconstituted, surrogate families. Family life-cycle and stages. Family disorganization - types, causes and consequences. Laws related to marriage and divorce, personal and family laws. Family court. Marriage and family counseling.

Practicals

1. Panel discussion on preparation for marriage and sex education
2. Survey/appraisal of existing trends of marriage and family using different media
3. Guest lecture on legal aspects of marriage and family
4. Film shows (main stream - study and report writing)
5. Visit to family planning clinic and study of methods of contraceptives
6. To understand changing functions of marriage and family by interviewing, Female headed, Single parent, Dual earner parent
7. Classroom discussion with resource person on Marriage laws, Dowry laws Family laws
8. Collection and preparation of information on marriage rituals and traditions across communities
9. Studying different stages of family life cycle by interview

PROFESSIONAL ELECTIVE

HDV 301 DEVELOPMENTAL ASSESSMENTS OF YOUNG CHILDREN 1+3

Theory

Definitions, concepts, functions, screening, measurement, trends and challenges in developmental assessment of young children. Methods of child study. Tools and techniques of assessment. Assessment of different areas of development of children from birth to 8 years, interpretation of assessed information to parents, educators and policy makers. Ethical issues in assessment of children. Assessment of parenting styles and home environment.

Practicals

1. Developmental assessment through observation-
   a. Participant and non-participant
   b. Case study method
   c. Interview and questionnaire methods
2. Assessing physical development through anthropometry and interpretation
3. Assessment of-
   a. Motor and Mental ability using Bayley's Scale of Infant Development (BSID) and interpretation
   b. Cognitive ability using a standard scale (Hema Pandey)
   c. Assessment of Intelligence

Raven's Progressive Matrices, Draw a man's test, Weschler's scale

4. Stanford Binet/Kamat Binet scale
   d. Social Maturity using Vineland scale
   e. Home Environment using Caldwell and Bradely scale
   f. Assessment of Temperament
   i. Personality profile through 16 PF scale
   j. Emotional Development and Maturity using standard scale
   k. Language Development using standard scale
   l. Parent-Child Relationship and Parenting Styles using standard scale

HDV 302 CURRICULUM DEVELOPMENT FOR EARLY CHILDHOOD EDUCATION PROGRAMMES 2+2

Theory

Need, importance and objectives of Early Childhood Education.Role of eastern and western educators. Principles of curriculum planning and different educational philosophies. Planning and scheduling activities based on different philosophies. Application of educational and developmental theories in ECE programmes. Development of teaching materials according to types of curriculum.

Practicals

1. Observational visit to various Early Childhood centers for studying programmes
2. Planning programmes - yearly/term/weekly/daily basis
3. Development of curriculum based on different cultural contexts
4. Implementing activities for different developmental domains- Physical, Motor, Cognitive, Social and Emotional, Language
5. Curriculum development based on different philosophies for government/private Early Childhood education Programmes – Day care Centers/ infant schools/ play home/ chreche, Nursery School, Kindergarten, Montessori school,
6. Developing and Preparation of teaching materials
7. Report writing

HDV 303 DEVELOPMENT OF TEACHING MATERIALS FOR ECE PROGRAMS 1+3

Theory

Significance of teaching materials for early childhood education programs. Principles of developing materials for children. Concept, importance and characteristics of creativity, promoting creative environments. Planning and developing learning material for – physical, motor, social, language, creativity, mental and personality development. Care and maintenance of materials.

Practicals

1. Observational visit to play centers, exhibitions, manufacturing units, toy shops
2. Survey of existing teaching materials in Early Childhood centers
3. Development of different materials for
4. Music/ Rhymes, Role play and dramas, Story telling, Science and nature experience activities, Creative games, Outdoor and indoor games
5. Field presentation of teaching materials for
6. Language development, Concept development, puppet show
7. Developing linkages with manufacturing units of teaching materials
8. Exhibition/workshop for school personnel/parents to create awareness of teaching materials

HDV 304 LITERATURE FOR CHILDREN 2+2

Theory

Need and scope of children's literature, Children's literature through the ages. Contributors to children's literature. Characteristic features of literature for preschool children:sources, features and significance of folk tales, folk songs, folk arts, mythology, historical events, science concept, biographies, fantasy and fairy tales. Types and importance of poetry, picture book, short stories and fables in ECE programmes. Role of puzzles, cartoons, comics, comic strips, skits, role plays, dance in ECE programmes. Creating literary environment in school. Role of children's library. List of children's book and popular publishers. Cover page designing and correspondence with publishers.

Practicals

1. Survey of children's literature
2. Group discussion on elements of writing for children
3. Developing items of literatures for different domains and age group- Poems/ poetry/ rhymes, stories- short stories, fables/ picture story, cartoon strips/ comic strips/ comics/ drama/ plays/ skits/ picture books concept books
4. Learning cover page designing, instruction in reading and writing
5. Field testing of developed materials
6. Exhibition cum sales of developed children's literature

HDV 305 INTERVENTION PROGRAMS FOR FAMILY AND COMMUNITY 2+2

Theory

Theoretical orientation in planning intervention programs for young children. Meaning, need, scope and objectives of parent and community intervention. Methods of parent education. Approaches and techniques in parent and community education. Need for family life education. Infant Stimulation -need and scope for stimulation. Brain growth and effect of stimulation on development of infants. Factors to be considered in developing, implementing and evaluating intervention programs

Practicals

Identification of target groups in home and school

Study of intervention packages

Survey of knowledge, attitudes and practices of parents and field functionaries related to child rearing practices

Development of need based intervention packages

Implementation and evaluation of developed intervention packages at home and school

Report writing

HDV 306 INTEGRATION OF CHILDREN WITH SPECIAL NEEDS 2+2

Theory

Concept , causes and categorization of exceptional children – gifted, mentally challenged, orthopaedically, physically, emotionally and socially challenged and children with developmental disabilities. Characteristics and identification of different categories of exceptional children. Educational provisions for exceptional children. Concept and significance of mainstreaming and inclusive education. Attitude of parents and teachers towards inclusive education and mainstreaming. Supportive systems: Institutes, Policies and Programmes for children with special needs.

Practicals

Survey and visit to existing institutions for children with special needs

Identification, assessment/ screening of children with special needs for inclusive education-

Physically Challanged – Visual, Hearing, Neurological and Orthopaedically impaired

Mentally challenged – Retarded and gifted

Social & Emotionally maladjusted

Learning disabilities

Case study of exceptional children

Planning and organizing awareness programmes for parents and teachers

HDV 307 CHILD GUIDANCE AND PARENT COUNSELLING 2+1

Theory

Meaning, definition, scope and historical perspective of guidance and counselling. Counselling and related fields. Pre-requisites and preparation for counselling, counselling process, professional ethics and qualities of a counselor, methods and approaches of counselling, special areas of counselling. History, role and organization of child guidance clinics. Importance of body language in counselling. New trends and demands in guidance and counseling.

Practicals

1. Visit to child guidance and counseling centers
2. Assessment and identification of children with behavioral deviation and development delays in home and school set up
3. Case studies of children with behavioral problems and report writing
4. Developing and implementing educational strategies to help parents and children to mange different behavioral problems.
5. Discussion and demonstration on counseling and guidance techniques with experts.

HDV 308 ENTREPRENEURSHIP DEVELOPMENT IN EARLY CHILDHOOD CARE AND EDUCATION CENTER 1+2

Theory

Concept of entrepreneur, entrepreneurship and professional characteristics of entrepreneurs. Organizational set up with cost benefit analysis. Project proposal for funding agencies to establish ECCE centers. Administration of ECCE centers: policies, regulations, admission criteria, assessing, recording and reporting children's progress. Involvement of parents in ECE programs: Why and How. Accreditation of ECCE centers.

Practicals

1. Survey of existing Early Childhood Centers.
2. Visit to Early childhood education centers established by successful entrepreneurs
3. Visit to funding agencies
4. Interaction with entrepreneurs
5. Collection of information regarding policies, licensing and regulations for establishment
6. Developing publicity strategies for establishing new centers
7. Project proposal writing for establishment of Early childhood education center
8. Hands on experience for management of established center
9. Critical analysis of progress reports of children
10. Planning and organizing of Parent Teacher Association (PTA)

SUPPORTIVE COURSES

PSY-101 CHILD PSYCHOLOGY 4 (2+2)

Theory

Strategies to study the development of child behavior and psychological processes. Basic learning processes in infancy and childhood - classical conditioning, classical reward and aversive conditioning, instrumental and operant conditioning and discriminant learning. Cognition-perceptual and conceptual process and development in infancy and childhood. Personality development: traits, dimensions , types and behavioral tendencies. The beginning of self and social awareness, self evaluation and origin of self concept. Understanding Psychopathology. Attention deficit hyperactive disorder- features and characteristics. Inattention hyperactivity, impulsivity, cognitive deficits, oppositional deficit disorder, anxiety disorders and depression. Motivation-arousal level, deficit in self regulation and behavioral inhibition. Assessment, diagnosis and treatment of behavioral disorders. Conduct problems-description and perspectives. Legal, psychological and psychiatric, conduct disorder, and antisocial personality disorder.

Impairment in cognition and learning . Self esteem deficits, interpersonal difficulties, socio–cognitive deficits and health related problems. Emotional disorders- prevalence ,developmental course, causes and outcome. Anxiety disorders, panic disorder, obsessive-compulsive disorder and panic attacks. Autism **-** description, characteristics and associated characteristics, types, prevalence, developmental course, causes ,outcomes, assessment, diagnosis and treatment. Delinquency-emotional and behavioral dispositions of sociopaths, diagnosis and rehabilitation.

Practicals

I. Test of -

1. Span of attention
2. Trial and error learning
3. Cognition
4. Recognition
5. Relation perception
6. Manual dexiterity
7. Finger dexiterity
8. Anxiety of children
9. Temperamental profile
10. Attentiveness of child
11. Hyperactivity of child
12. Conduct problems
13. Emotional expression
14. Autism
15. Visual figure-ground
16. Speech ability
17. Nonverbal symbolic language

II. Assessment of -

18. Competency
19. Developmental problems of child

Department of Textiles and Apparel Designing

Course No.	Course title	Credit hour
TAD 101	Textile Science and Fabric Care	3(2+1)
TAD 102	Fundamentals of Clothing Construction	3(1+2)
TAD 201	Fundamentals of Textile Designing	3(2+1)
TAD 202	Garment Construction and Wardrobe Planning	3(1+2)
	Total	**12(6+6)**

PROFESSIONAL ELECTIVE

APPAREL DESIGNING

MAJOR COURSES (50 credits)

Course No.	Course title	Credit hour
TAD 301	Indian Textiles and Costumes	4 (2+2)
TAD 302	Computer Aided Designing –I	4 (2+2)
TAD 303	Principles of Design and Application to Textiles	3 (1+2)
TAD 304	Fashion Illustrations	4 (1+3)
TAD 305	Merchandising Practices	3 (2+1)
TAD 306	Computer Aided Designing –II	3 (0+3)
TAD 307	Apparel Manufacturing Technology	2(2+0)
TAD 401	Apparel Designing and Manufacturing	4 (1+3)
TAD 402	Dyeing and Printing	3(1+2)
TAD 410	Experiential Learning	10 (0+10)
TAD 411	Implant Training	10 (0+10)
	TOTAL	**50(12+38)**

Supporting Courses **10 (0+10)**

TAD 101 TEXTILE SCIENCE AND FABRIC CARE 3(2+1)

Theory

Introduction to textiles. Textile fibres - classification and terminology. Processing and manufacturing method, properties and uses of different textile fibres - cotton, silk, wool, rayon, polyester, nylon, acrylic and other minor fibres. Spinning method - mechanical and chemical. Yarn - classification, characteristics and uses. Method of fabric construction - weaving, knitting, braiding, lace making, knotting, felting and non - woven. common finishes applied on textile materials. Introduction to fabric care. Darning and mending. Laundry equipment - washing, drying and finishing. Principles and methods of washing and finishing. Stain removal - principles, classification and techniques. Cleansing agents - water, detergent and soap. Other reagents - acidic and alkaline. Bleaching agents. Additives used in laundering - stiffening, blueing and optical brighteners. Dry cleaning - principles, methods, use of absorbents and solvents. Special treatments for clothes - disinfections.

Practicals

1. Identification of textile fibres visually
2. Identification of textile material by microscopic, burning and solubility test – cotton, rayon, silk, wool, nylon, polyester and blends
3. Study of yarns –
   Yarn type - Single, ply and cable
   Yarn size - finer and coarser
4. Bow and skewness
5. Darning the fabric – hole, hedge tear and diagonal slit
6. Mending the fabric – plain and print patch
7. Removal of common stains from cotton fabric
8. Demonstration on laundry equipments – washing, drying and finishing
9. Washing, drying and finishing of cotton, silk, wool and synthetics
10. Washing, drying and finishing of special articles – zari, embroidered fabrics and lace
11. Demonstration on desizing and scouring of cotton
12. Demonstration on bleaching of cotton
13. Collecting different fabrics available in the local market and their identification.
14. Study visit

TAD 102 FUNDAMENTALS OF CLOTHING CONSTRUCTION 3 (1+2)

Theory

Importance and functions of clothing. Clothing construction - introduction, terminology and principles. Equipment and accessories used in construction. Sewing machine - parts, functions, care, maintenance, problems and general repair. Factors considered in selection of fabrics - design, durability, appearance, texture, price, labels and colourfastness. Stitches - classification, hand and machine stitches. Raw edge finishes. Fullness and ease. Methods of garment construction suitable for different fabrics - drafting, flat pattern and draping. Fabric preparation for garment construction - pre-shrinking and trueing. Methods of layout and cutting. Clothing requirement for infants, toddlers, pre - school and elementary school children. Self - help garments.

Practicals

Sewing equipments and tools - measuring, marking, cutting, stitching and finishing
Sewing machine, parts, functions, care and general repair.
Basic hand stitches – preparing the samples with basic hand stitches with basting, running, back stitch and their combinations
Raw edge finishing – preparing the samples with buttonhole, herringbone, whipstitch, slip stitch, hemming, pinking, binding, machining and over sewing.
Seams - plain, lapped, French and flat & fell
Taking in fullness – Pleats, gathers, shirring, gore, godets, circular skirt, frills and ruffles.
Necklines and neck finishes – round, square, 'V' and shaped.
Placket opening - continuous, two piece, bound and fitted.
Fasteners – attaching different types of fasteners
Taking body measurements and preparing basic bodice block
Drafting, cutting, stitching and finishing a baby layette (zabala, nappy, bib or feeder)
Drafting, cutting, stitching and finishing of panty and bloomer
Drafting, cutting, stitching and finishing of frock
Adaptation of bodice block into designed frock
Adaptation of bodice block into apron
Project work

TAD 201 FUNDAMENTALS OF TEXTILE DESIGNING 3 (2+1)

Theory

Introduction, history and evolution of textile designing. Weaving - introduction and operations. Loom - parts and functions; pre-loom, loom and post-loom processes. Types of looms - hand and power operated, and loom accessories. Classification of weaves - basic and fancy. Basic weaves – plain, twill, satin and their variations. Knitting - history and principles. Knitting machine – parts, functions, methods and stitches. Hand knitting- basic stitches and accessories. Dyeing – introduction, evolution and classification of dyes -indigenous and synthetic. Printing - introduction, evolution, styles and methods - block, stencil, spray and screen. Embroidery – introduction, types and accessories. Hand painting – introduction and methods. Textile Designing through surface finishing – glazing, embossing, moiring, plisse and acid designs.

SCHEDULE OF PRACTICALS

1. Handloom - parts and functions
2. Preparation of warp and setting the warp on the loom
3. Weaving samples with plain weave
4. Understanding the working of knitting machine, parts and accessories.
5. Setting the machine, needle position, tension dial on carriage – running the machine
6. Making samples of knitted patterns - tuck, slip, multi-coloured.
7. Preparing samples by hand knitting stitches - garter, knit, purl, ribs, moss, double moss, seed, tracks, basket and chevron
8. Preparing samples of hand embroidery stitches
9. Preparing samples with stencil, spray and screen printing
10. Preparing samples with hand painting
11. Preparing samples with block printing

TAD 202 GARMENT CONSTRUCTION AND WARDROBE PLANNING **3 (1+2)**

Theory

Garment construction - sociological and psychological aspects of clothing. Application of elements and principles of art in garment making. Principles of fitting. Clothes for adolescents, adults, aged and special groups. Clothing awareness and symbolism. Impact of clothing on socialization and development of self-concept, self-confidence, self-esteem and self-security. Wardrobe planning - meaning, importance and budgeting. Factors influencing wardrobe planning for different age groups. Methods of arrangement of garments in wardrobe. Storage of clothes.

Practicals

Drafting, cutting, stitching and finishing of slips/petticoat/sari petticoat.

Drafting, cutting, stitching and finishing of lady's shirt

Drafting, cutting, stitching and finishing of pajama

Drafting, cutting, stitching and finishing of sari blouse

Drafting, cutting, stitching and finishing of kameez / kurta

Drafting, cutting, stitching and finishing of salwar / chudidar

Drafting, cutting, stitching and finishing of gent's kurta / kalidhar kurta

Drafting, cutting, stitching and finishing of nighty / night suit

Visit to Boutiques/showrooms

PROFESSIONAL ELECTIVE

TAD 301 INDIAN TEXTILES AND COSTUMES 4(2+2)

Theory

Traditional textiles of India - meaning, classification and significance. Study of cotton, silk and wool textiles statewise. Traditional costumes of India - Assam, Andhra Pradesh, Gujarat, Kashmir, Karnataka, Kerala, Maharashtra and Punjab. Traditional embroidery of India - Gujarat, Himachal Pradesh, Kashmir, Karnataka, Manipur, Punjab, Uttar Pradesh and West Bengal. Importance of traditional textiles, costumes and embroideries in textile and apparel industry. Factors influencing diversity of textiles and costumes.

Practicals

Collection and study of traditional embroidery motifs

Preparation of traditional hand embroidery samples: Gujarat, Himachal Pradesh, Karnataka, Kashmir, Manipur, Orissa, Punjab, Uttar Pradesh and West Bengal

Preparation of samples of machine embroidery

Planning and designing utility articles with hand and machine embroidery

Preparation of utility article with hand embroidery

Preparation of utility article with machine embroidery

Organizing exhibition

TAD 302 COMPUTER AIDED DESIGNING - I 4(2+2)

Theory

Introduction to textile designing. Importance of Computer Aided Designing (CAD) in textile industry. Hardware and software - meaning, parts, functions and working. Factors influencing selection of hardware and software. Basics of software - starting software, beginning a new drawing and creating a basic proto type drawing. Basic commands – name, functions and application. Drawing with precession. Creating motifs based on ethnic and historic base. Creating designs for various end uses**.** Creating and storing sloper in CAD. Drawing - theories, textile designs and draping fabric on figures. Developing various textured effects and application of colours.

Practicals

1. Learning basic operating system of computer
2. Acquaintance with software – starting software, use of pointer, creating folder and files
3. Software commands - understanding and practicing
4. Creating new drawing, opening and editing on existing drawing, entering the name and saving the drawing
5. Drawing line – learning commands for drawing various lines, change of line types, connecting, erasing and editing lines
6. Drawing circle – learning commands for drawing circles of different diameter
7. Drawing arc - types, erasing, editing and practicing
8. Drawing solid object – learning commands to draw solid objects
9. Creating movement in drawing – by using rotate and move commands
10. Producing multiple drawing – use of mirror, off set and copy commands
11. Drawing symmetrical figures – face, hands and feet
12. Editing drawing through edit, modify, break, trim, explode and scale commands
13. Creating coloured patterns using layer, fill, hatch and change commands
14. Practicing commands
15. Drawing geometrical, floral, stylized and abstract motifs
16. Developing patterns and colouring
17. Creating patterns and colouring
18. Developing patterns by combination of motifs – apparel, furnishing and made-ups
19. Drawing weaves, knits and textures
20. Drawing croquis using free hand drawing commands

TAD 303 PRINCIPLES OF DESIGN AND APPLICATION TO TEXTILES 3 (1+2)

Theory

Basic designing - introduction, principles and classification of woven and printed textile designs. Traditional motifs and application on different textile materials. Design development and arrangement - natural, stylized, geometrical, abstract, ethnic and traditional motifs. Effect of yarn, weave, colour and finishing processes of textiles on design. General role of design. Methods of creating motif, symmetry of motif, unit basis for motif and design direction. Application of designs for clothing and furnishings. Selection of suitable designs for apparel, home furnishing and made -ups.

Practicals

1. Sketching and developing geometrical motifs for various end uses – apparel, furnishing and made-ups
2. Developing geometrical motifs in monochromatic, analogous and complimentary colour schemes
3. Creating patterns with geometrical motifs
4. Sketching natural motifs for apparel and furnishings
5. Developing natural motifs in monochromatic, analogous and complimentary colour schemes
6. Creating patterns with natural motifs
7. Sketching and developing stylized motifs for various end uses – apparel, furnishing and made-ups
8. Developing stylized motifs in monochromatic, analogous and complimentary colour schemes
9. Creating patterns with stylized motifs
10. Sketching and developing abstract motifs for various end uses – apparel, furnishing and made-ups
11. Developing abstract motifs in monochromatic, analogous and complimentary colour schemes
12. Creating patterns with abstract motifs
13. Sketching and developing ethnic motifs for various end uses – apparel, furnishing and made-ups
14. Developing ethnic motifs in monochromatic, analogous and complimentary colour schemes
15. Creating patterns with ethnic motifs
16. Sketching and developing traditional motifs for various end uses – apparel, furnishing and made-ups
17. Developing traditional motifs in monochromatic, analogous and complimentary colour schemes
18. Creating patterns with traditional motifs
19. Unit basis for design and design direction
20. Symmetry of motifs and design repeat
21. Study visit to dyeing, printing and design centres
22. Conducting exhibition

TAD 304 FASHION ILLUSTRATIONS 4 (1+3)

Theory

Fashion – history, concept and development. Designing clothes – concepts, functional, structural and decorative designs. Elements of art and principles of design – application to silhouette and clothing. Study of human figures – standard and types. Face – types and suitable necklines. Fashion change and consumer acceptance – dimensions, evolution and adoption. Fashion research and analysis – forecasting trends, sources of information and creative design. Role of a fashion designer in fashion industry. Creating styles according to age, season and special needs. Fashion illustrations – basic image of man, woman and children. Illustrating fashion figures – poses and postures. Accessories – types and application.

Practicals

1. Study of body proportions in relation to age, gender and body form in totality
2. Study of figure types, understanding and achieving the proportions
3. Getting acquainted with types of material used in sketching and fashion illustration
4. Practice in drawing line types
5. Preparation of fashion figure – learning to draw – planning page, proportions and road map grids
6. Drawing masses of body using simplified geometric shapes and fleshing out the figure
7. Moving figure – proportioning, selecting pose, curving spine, marking feet, drawing angles of shoulders, hip and knees
8. Sketching types of silhouettes – designing and understanding each type
9. Shaping and fleshing out posed figure
10. Drawing front facial view and features
11. Drawing profile view and adding features
12. Drawing three quarter facial view and features
13. Drawing hands and arms – form, shapes and styles
14. Drawing legs – motion, feet formulae – full front, ¾ turn and profile
15. Drawing sandals, boots, flats and heels
16. Learning to draw various hair styles
17. Learning pencil techniques and shading – three dimensional figure
18. Obtaining various textures and patterns of fabrics through pencil shading
19. Adding garment details – sketching folds and creases as per posture
20. Drawing specific details – necklines and collars
21. Sketching and creating apparel styles for commercialization - children, adolescent boys and girls, men and women
22. Planning, designing and constructing garments on various themes with variegated surface enrichment / decoration
23. Visit to Fashion Designing Institutes and report writing
24. Organizing exhibition

TAD 305 **MERCHANDISING PRACTICES** **3 (2+1)**

Theory

Merchandising practices – meaning, concept, terminology and principles. Factors influencing merchandising practices. Role and responsibility of the merchandiser. Problems faced by the producers and distributors of textiles – market trends and marketing mix. Marketing channels for textile goods. Types of retail stores and functions. Merchandising for buying houses, departmental stores and export houses. Labels, brands, trademarks, standards and guarantee. Advertisements and other sales promotion techniques. Export and import – policies and procedures. Role of organization for export promotion – Textile Committee and Apparel Export Promotion Council (AEPC).

Practicals

Market survey of wholesale and retail dealers in textile materials
Understanding the set up of departmental stores/specialty stores/exclusive stores/dealing with textile goods
Study of sales promotion techniques adopted by textile dealers
Collection of printed information on sales promotion techniques of textile goods and making a portfolio
Study of ready to wear garment units – kids wear, women's wear, leg wear, formal shirts and lingerie's
Collecting information on telecasted sales promotion techniques
Study of prevailing styles of men's, ladies and children wear
Preparing leaflets/handouts/posters/banners for sales promotion of textile and apparel

TAD 306 **COMPUTER AIDED DESIGNING – II** **3(0+3)**

Practicals

1. Introduction to portfolio development
2. Designing software - starting and creating files
3. Learning software commands
4. Familiarization of software commands –colour, pattern, image selection and marking
5. Image processing – basics
6. Selection and scanning pictures
7. Scanning figures – children, adolescents, adults and models
8. Scanning textile material
9. Apparel designs – scanning and creating new text drawing
10. Hands on experience - scanning
11. Modification of scanned pictures
12. Creating new apparel design - frock/ kameez/ skirt/ top/ nighty/ party wear
13. Creating, saving and applying scanned designs for dress designing
14. Draping apparel on croquis/figure forms
15. Creating archive - scanned pictures and designed patterns

TAD 307 **APPAREL MANUFACTURING TECHNOLOGY 2(2+0)**

Theory

Apparel manufacturing unit – infrastructure, machinery and equipment required for garment production. Pre -production processes for garment fabrication – preparation of sample, analysis and evaluation of counter samples. Production process – procurement of raw material, cutting, sewing, finishing, packaging and dispatching section. Techniques of production in cutting process – infrastructure, methods of commercial cutting and bundling; sewing process – infrastructure, stitch type, uses and application; finishing room – infrastructure and process involved; packaging process – infrastructure, material and packing methods; dispatch section – infrastructure, process and steps involved. Apparel standards and quality control – importance, measuring standards, specifications of raw material and finished goods, accepted quality level. Quality control –fabric to ware house.

TAD 401 APPAREL DESIGNING AND MANUFACTURING 4(1+3)

Theory

Anthropometric measurement - meaning, terminologies, techniques and importance. Body measurements and developing bodice block by drafting technique. Garment designing - techniques and importance. Basic paper pattern - development and grading. Adaptation of sleeves, cuffs, collars, pockets and yokes. Supportive materials - selection, preparation and application of under linings and inter facings. Trimmings - meaning, types, selection and application to necklines, collars, sleeves, yokes, pockets and hemline. Accessories – meaning and importance. Value addition to garments. Draping – introduction and importance.

Practicals

1. Flat pattern techniques – creating designs through dart manipulation – slash and spread method
2. Flat pattern techniques – creating designs through dart manipulation – pivot method
3. Developing paper patterns – yoke with fullness and extra fullness for classic yoke styles
4. Developing paper pattern for set –in –sleeve with bodice
5. Developing paper patterns for flat, roll, stand and shawl collars
6. Developing paper patterns for gored, flared, circular and pleated skirts
7. Developing paper patterns for patch and inseam pocket
8. Pattern grading – women, men and children garments
9. Designing garment for children - skirt and top - cutting, stitching and finishing the garment
10. Designing garments for adolescents - parallels/jeans/pedal pusher and top. Cutting, stitching and finishing the garment
11. Designing garments for men – waistcoat. Cutting, stitching and finishing the garment
12. Designing sari blouse - cutting, stitching and finishing the blouse
13. Introduction to draping and equipment needed
14. Study of dress form, padding and marking dress form
15. Preparation of muslin – stepwise draping, marking and trueing - basic bodice front, back and basic skirt
16. Drafting sleeve, shaping the cap, setting the sleeve and adjustments
17. Dart manipulation – waistline, centre front, French, armhole and shoulder darts
18. Study visit to garment manufacturing unit

TAD 402 DYEING AND PRINTING 3(1+2)

Theory

Introduction to dyeing and printing. Dyes and their classification – natural and synthetic. Types of natural dyes – plant, animal and mineral origin. Types of synthetic dyes – soluble, insoluble and ingrain, their structure and properties. Direct, basic, acid, vat, reactive, naphthol, sulphur, mordant, disperse dyes and pigment. Preparatory processes for dyeing and printing – wetting, scouring, bleaching and mercerization. Dyeing – stock, sliver, yarn, piece, dope and garment. Methods of dyeing. Selection of dyes for different fabrics. Tie-dye and batik painting – types and methods. Printing techniques - Block, screen, roller, spray, stencil, duplex, discharge, resist, warp, flock, photographic and heat transfer printing.

Practicals

1. Preparatory processes for dyeing and printing – wetting, scouring, bleaching and mercerization
2. Dyeing of cotton with direct dye
3. Dyeing cotton samples with vat dyes
4. Dyeing cotton samples with naphthol dyes
5. Dyeing cotton samples with different dye percentages
6. Preparation of Tie – dye samples – lehariya, pleating, chevron, knotting, triangular folding, spotting, batik, marbling and tritic
7. Dyeing tied samples with different colour combinations
8. Preparation, selection of material, dye and design for batik
9. Waxing, dyeing and after treatment
10. Preparation of value added articles by tie-dyeing/block printing/Batik painting
11. Fabric painting

AEX 401 INFORMATION TECHNOLOGY 2(1+1)

Theory

Information Technology - Meaning, Functions, Information technology in India. Channels of communication of information. Sources of information. Selective dissemination of information. Processing information for multimedia. Computer aided presentation, Advances in Telecommunication media – E-mail, on line services, teletext, videotext etc.

Practicals

1. Collection of information on area and production of principal crops.
2. Estimation of growth rates on area and productivity.
3. Collection of time series data on prices and arrivals of selected agri-horticultural commodities.
4. Estimation of trend, cyclical and seasonal variation in prices of selected commodities.
5. Study of Indian economy using growth indicators.
6. Information processing for different categories of persons involved in agricultural development.
7. Information processing (Contd.)
8. Information needs of farmers at different stages of adoption.
9. Visit to Zilla Parishad DTC unit to study information processing and retrieval.
10. Visit to banking institute to study management of information through computers.
11. Visit to industry to study information management through computers.
12. Visit to educational institute to study information management through computers.
13. Computer aided presentation of information.
14. Computer aided presentation (Contd.)
15. Computer aided presentation (Contd.)

AMR 401 CONSUMER BEHAVIOUR AND MARKET RESEARCH 3(2+1)

Theory

Theory of consumer behaviour. Factors affecting purchases. Impact of distribution of consumers – age, sex, location, income and group dynamics- on purchases. Quality and price consciousness of consumers. Perception, learning, knowledge, attitude and motivation in consumer behaviour. Role of sales promotion measures in consumer's choice of stores and products. Science and research- fundamental and applied. Agricultural economics as a science. Difference in physical, biological and social science. Nature of economic laws, Normative and positive economics. Methods of economics. Inductive and deductive methods. Hypothesis in research-properties and sources. Models and methods. Models in behaviour and policy research. Market research, marketing research and techniques. Sources of data - primary and secondary. Methods of collecting data. Survey and cost accounting methods. Types of surveys-diagnosis, evaluation, attitudinal, technical. Processing and analysis of data, interpretation of results and preparation of reports.

Practicals

Identification of research problem on consumer behaviour
Formulation of objectives
Formulation of hypothesis
Review of literature.
Study of sampling designs
Selection of samples
Preparation of questionnaire
Collection of field data
Collection of secondary data
Study of analytical techniques in market research
Tabulation of data
Analysis of data
Writing research report
Presentation of research reports

ANS 301 INTRODUCTION TO WOOL TECHNOLOGY 2(1+1)

Theory

History and evolution of wool. Sheep breeds – indigenous, exotic and cross breeds. Wool, hair / fibre classification of live stock species. Morphology of wool and hair – macroscopic and microscopic structure. Polymer system of wool. Physical and chemical properties of wool / hair. Processing of wool – clipping, cleansing, scouring, carbonizing, drying, oiling, blending, carding, gilling, combing and spinning. Value addition for wool products. Felting and setting. Knitted goods and properties. Wool mark – Indian and International standards, Wool Act. Conservation of wollen fabrics.

PRACTICALS

1. Classification, sorting and grading of wool
2. Study of various sheep breeds
3. Study of fleece quality obtained from different parts of the sheep.
4. Morphology of wool fibre.
5. Morphology of other hair fibres
6. Effect of organic chemicals on wool fibre.
7. Effect of organic chemicals on other hair fibres.
8. Effect of inorganic chemicals on wool fibres.
9. Effect of inorganic chemicals on other hair fibres.
10. Effect of heat on wool and other hair fibres.
11. Clipping and cleaning of wool fibres.
12. Carbonizing of wool.
13. Felting of wool.
14. Spinning of wool
15. Study of wool labels-market survey.
16. Visit to wool production and technology center.

CHM 301 CHEMISTRY OF TEXTILE AUXILLARIES 3(2+1)

Theory

Introduction and scope of analytical chemistry. Concepts of acid-base titration, P^H and buffers. Concept of oxidation and reduction - dodimetry and complexometry. Principles of gravimetric analysis. Principles of conductometry, spectrophotometry, flame photometry, atomic absorption spectro photometry and their uses. Composition of textile fibres – Cellulose, proteins – peptide and sulphide based proteins, polyamide, polyester and polyacrylonitrile. Classification of textile auxillaries – hydrophillic – lyophilic balance, anionic, cationic, amphoteric and non-ionic surfactants. Role of acids, alkalies, hydrocarbons, alcohols, aromatic chloro compounds and phenolic compounds in the composition of the fibres. Anionic surfactants – soap, turkey red oil, alkyl naphthalene sulphonates, fatty acid esters and fatty alcohol sulphates. Cationic surfactants – cationic dyeing assistants, germicides, softeners and finishing agents. Non-ionic surfactants – ethylene oxidoses. Gums - classification, properties and uses. Other miscellaneous auxillaries – oxidizing and reducing agents, urea formaldehyde, ethylene oxide and enzymes.

Practicals

1. Introduction to analytical chemistry
2. Calibration of analytical balance
3. Preparation of standard solutions.
4. Estimation of carbonates, bicarbonates, hydroxides, chlorides, alkali metals and sulphur.
5. Determination of different elements using spectrophotometer.
6. Isotrophic dilution techniques
7. Reaction of acids on chemical composition of fibres.
8. Reaction of alkalies on chemical composition of fibres.
9. Reaction of solvents on chemical composition of fibres.
10. Reaction of chloro compounds
11. Reaction of fatty acid with alkalies (NaOH, KOH) using titration method.
12. Determination of saponification value, iodine number, refractive index of oils (oil index) and specific gravity (fatty acids)

SER 401 SERICULTURE 2(1+1)

THEORY

History of Sericulture in India, scope and importance, organization of silk industry, importance of mulberry. Methods of leaf harvest and storage. Modern concepts in mulberry cultivation, management of mulberry pests and diseases. Incubation, growth and development of silkworms, environmental conditions for silkworm rearing, hatching and brushing, qualitative and quantitative requirements for silkworm rearing. Importance of cleaning and spacing, significance and methods of rearing chawki worms, methods of rearing late age worms. Importance of non-mulberry silkworms. Mounting, harvesting and marketing of cocoons. Seed organization and production, storage and handling of silkworm eggs. Economics of sericulture.

PRACTICALS

1. Study of different species of silkworms and their food plants.
2. Morophology of mulberry sukjwirn *B. Mori L.*
3. Study of digestive system and silk gland of *B. Mori*
4. Study of excretory, respiratory and central nervous system of B. Mori
5. Study of reproductive system of silkmoths of B. Mori
6. Study of model silkworm rearing house and preparation of room for silkworm rearing.
7. Study of silkworm rearing equipments
8. Rearing techniques for mulberry silkworm.
9. Rearing techniques for non-mulbery silkworm.
10. Study of silkworm races.
11. Pests of silkworm and their management.
12. Diseases of silkworm and their management
13. Grainage techniques for mulberry silkworm B. Mori.
14. Silk reeling
15. Study of defective cocoons
16. Cultivation practices of mulberry and study of different varieties.
17. Pests and diseases of mulberry and their management.
18. Economics of sericulture
19. Visit to cocoon market, grainage and silk reeling unit.
20. Practical examination

AFN 401 INTERNATIONAL TRADE 2(2+0)

Theory

Trade in domestic and international market. Theories of international trade - Classical theory and its refinement - Multilateral trade - Bilateral trade - terms of trade - balance of payments. Documents used in foreign trade. Foreign exchange- Mechanisms and instruments of international payments - exchange rate mechanism - Theories of exchange rates - Calculation of exchange rates - Import policies - Protection of export - Tariff and quotas - Forward contracts - International liquidity – Euro - currency markets - International financial institutions - Exchange control - Foreign exchange regulation in India.

AGRICULTURAL COURSES

SL. NO.	COURSE NO.	COURSE TITLE	CREDIT HOURS
1	**AET-304**	General and Applied Entomology	2(1+1)
2	**AMR-402**	Marketing Management	2(2+0)
3	**AGR-101**	Principles of Crop Production and Soil Fertility Management	2(1+1)
4	**AGR-102**	Crop Production-I	1(0+1)
5	**PAT-205**	Diagnosis and Management of Plant Diseases	2(1+1)
6	**GPB-202**	Principles of Heredity	2(1+1)
7	**HRT-303**	General Horticulture	2(1+1)
8	**DPS-201**	Dairy and Poultry Science	2(1+1)
		TOTAL	**15(8+7)**

AET-304 GENERAL AND APPLIED ENTOMOLOGY 2(1+1)

Theory

Definition and scope of entomology. Position of insects in the Animal Kingdom. General external structure of insects. Metamorphosis. Classification of insects of economic importance up to order level. Beneficial insects – parasitoids, predators, pollinators, weed killers and scavengers. Productive insects: Honey bees – species, colony structure, life cycle of Indian bee and management.

Balance of life in nature, causes for pest out break. Methods of pest control. Pesticides classification, and formulations. Bioecology and management of pests of vegetable crops. Important pests of stored grains and their management. Pests of household, domestic animals and medical importance and their management.

Practicals

1. External morphology, mouth parts, appendages and wing of typical insect.
2. Different types of insect mouth parts
3. Antennae and legs.
4. Insect collection, preservation and display.
5. Classification and study of insect orders of economic importance of exopterygota.
6. Study of insect orders of endopterygota
7. Beneficial insects parasitoids predators
8. Weed killers pollinators and scavengers.
9. Honey bees- species
10. Beekeeping appliances
11. Natural enemies of honeybees and visit to apiary.
12. Insecticide formulations and their usage.
13. Plant protection equipments and monitoring devices.
14. Diagnostic characters and symptoms of damage of the pest of vegetable crops.
15. Field visit to study the nature of damage and to record the incidence of pest.
16. Pests of stored grains and demonstration on fumigation.
17. Study of important pests of domestic animals
18. Household and medical importance

AMR-402 MARKETING MANAGEMENT 2(2+0)

Theory

Management - meaning and definition, significance, principles and functions. Orientation to marketing management - marketing environment and market mix variables - price, product, place and promotion. Product innovation.

Market efficiency - concepts and measurement. Market structure, conduct and performance. Market integration - vertical and horizontal. Market co-ordination, market segmentation, market power - source and effects.

AGR-101 PRINCIPLES OF CROP PRODUCTION AND SOIL FERTILITY MANAGEMENT 2(1+1)

Theory

Importance and scope of agriculture. Farming as an enterprise and its relation to industries. Historical stages of development of agriculture. Area and production of agricultural crops in Karnataka, India and world. Contribution of agricultural crops to national economy. Agricultural resources of Karnataka and India. Classification of crops. Soil and climatic conditions of the zone. Concept of crop ecology and geography, concept of centers of origin of crops, crop distribution and adaptation. National and international institutes engaged in agricultural research. Importance of soil and its management with respect to crop production. Concept of soil fertility and productivity and their improvement. Important physical, chemical and biological properties of soil in relation to soil fertility and productivity. C:N ratio concepts of tillage and tilth. Requirements of good seedbed. Conventional and conservation tillage.

Nutrient requirement of crops. Composition and use of organic manures and fertilizers. Crop residue management, green maturing, FYM, compost, vermin-compost, etc. Principles underlying scheduling of fertilizers and methods of application. Fertigation and precision nutrient management.

Practicals

1. Study of soil profile
2. Field determination of soil texture by feel method
3. Study of soil productivity ratings
4. Study of land capability classification.
5. Study of yokes
6. Study of wooden plough and its working
7. Study of iron polugh
8. Study of harrows and their working
9. Study of cultivators, clod crushers, smootheners and their working.
10. Study of seed drills and method of sowing
11. Study of inter-cultivation implements and their working
12. study of organic manures
13. Preparation of farm yard manure, compost and vermicompost.
14. Study of important green manuring crops
15. Study of different fertilizers, composition and their use.
16. Secondary nutrients and macro elements in soil and fertilizer.
17. Study of fertilizer compatibility and study of fertilizer calculations.
18. Methods of fertilizer application and study of bio-fertilizer and their use.
19. National and international organizations and state agricultural universities.

AGR-102 CROP PRODUCTION – I 1(0+1)

Practical

The student has to raise a major crop of the region in a plot of five gunthas and profit/loss has to shared by the students.

Study of physical, chemical properties and importance of meteorological observations in crop production plot. Area, production and productivity of the allotted crop in the World, India and Karnataka. Production technology (package of practices) to be followed for the crop.

PAT-205 DIAGNOSIS AND MANAGEMENT OF PLANT DISEASES 2(1+1)

Theory

Plant Pathology – definition, objectives, scope and relationship with other sciences, concept, definition and economic importance of plant diseases, causes of plant diseases and their important characteristics, study of symptoms caused by plant pathogens, viz. fungi, bacteria, viruses, viroids, phytoplasmas, protozoans, nematodes, Phanerogamic parasites and non-parasitic diseases. Principles of plant disease management: exclusion, eradication, protection, immunization, biological-control and IDM.

Practicals

1. Study of microscope and its handling.
2. Study of morphological characters of fungi.
3. Study of morphological characters of bacteria.
4. Study of morphological characters of viruses, viroids and phytoplasmas.
5. Study of morphological characters of plant parasitic nematodes and Phanerogamic parasites.
6. Causes of plant diseases and proving Koch's postulates.
7. Preparation of culture media.
8. Study of different methods of sterilization and disinfection.
9. Isolation of plant pathogenic fungi and bacteria.
10. Study of plant disease controlling chemicals, formulations, compatibility and biocontrol agents.
11. Methods of application of plant protection chemicals.
12. Study of plant protection appliances.
13. Study of symptoms of plant diseases – fungus and bacteria.
14. Study of symptoms of plant diseases – virus and nematode.
15. Diseases of important crops – cereals.
16. Diseases of important crops-pulses and oil seeds.
17. Diseases of important crops-horticultural crops and post harvest diseases.
18. *In vitro* and *in vivo* evaluation of fungicides, bactericides and antagonists.
19. Study of seed-borne diseases.
20. Practical Exam

GPB-202 PRINCIPLES OF HEREDITY 2(1+1)

Theory

Brief history of classical and modern concepts of genetics and cytogenetics. Structural basis of heredity-Cell, nucleus, chromosomsome structure and functions-chromosomal theory of inheritance. Cell division-mitosis and meiosis. Gametogenesis in plants and animals.

Functional basis of heredity: Mendelian inheritance, Mendel's laws-mono, di and trigenic ratios; modifications of Mendelian inheritance, environment, intra and intergenic interactions, polygenic inheritance. Multiple alleles-Blood groups, Rh factor. Sex determination, sex-linked, sex-limited and sex-influenced traits. Non-Mendelian inheritance-maternal effects and maternal inheritance.

Chemical basis of heredity: Nucleic acids as genetic code, protein synthesis and gene regulation. Variations in heredity-mutation, structural and numerical variations in chromosomes, their genetic and evolutionary consequences with examples from plants and animals. Application of genetics for plant and animal improvement-breeding strategies for quality of food crops-cereals, pulses, oilseeds etc. Genetic counseling.

Recombinant DNA technology-historical perspectives, development of idea and techniques. Manipulation of DNA molecules, vectors, transformation, transgenic plants and animals.

Practicals

Historical prospects - Genetics and cytogenetics
Cell – structure of plant and animal cells, cell organelles and functions
Cell division cell cycle, mitosis and meiosis and their significance.
Chromatin – chemical composition, histones, nucleosides structure, structure of metaphase chromosomes, chromosome classification, unusual chromosomes.
Mendel laws – monohybrid, dihybrid and trihybrid ratio. Modifications of mendelain inheritance – Incomplete dominance, co dominance and lethal alleles.
Gene interaction – epistatic and nonepistatic gene interactions
Multiple alleles – genetics of blood groups and Rh factor, crythroblastosis fetal is.
Sex determination, sex-linked, sex-limited and sex influenced traits.
Polygenic inheritance – maternal effects and maternal inheritance.
Chemical basis of heredity, Nucleic acids, genetic code, protein synthesis and gene regulation.
Chromosomal variations – Numerical variations – euploidy and aneuploidy, structural aberrations – deletion, duplication, inversion and translocation Mutation.
Application of genetics for plant and animal improvement. Breeding strategies for quality of food crops.
Recombinant DNA technology: Various steps involved in gene cloning.
Significance of molecular nature of gene, vectors, transformation, transgenic plants.

HRT-303 GENERAL HORTICULTURE 2(1+1)

Theory

Horticulture - Definition, branches, importance and scope. Methods of plant propagation - sexual and asexual. General principles and practices of cultivation of important fruits-mango, banana, citrus, grape, guava, sapota. Importance of vegetables, kitchen garden, etc. General principles and practices involved in cultivation of important vegetables solanaceous, Cole crops, cucurbits, peas and beans. Medicinal and aromatic plants: active principle, medicinal properties and aromatic principles. Importance of floriculture and different components of ornamental garden.

Practicals

1. Visit to orchards and gardens
2. Plant propagation methods
3. Study of varieties, cultural practices, plant protection of important fruits
4. Study of varieties, cultural practices, plant protection of important vegetables
5. Study of culture of medicinal plants
6. Study of culture of aromatic plants
7. Study of different components of ornamental garden - annuals, shrubs, trees, climbers, hedges and edges.

DPS-201 DAIRY AND POULTRY SCIENCE 2(1+1)

Theory

Development of Dairy and Poultry and status of dairying in India. Study of breeds: Name, Origin and One important character of cattle, Buffalo and exotic cattle. Study of Poultry Breeds: Classification based on Geographical distribution and alient characters of each class with examples Housing for Dairy & Poultry : [Cattle, Buffalo, Poultry] systems of housing, space requirement and their advantages. Management of different stages of Dairy and Poultry. Advantages of AI Heat symptoms. methods of identification of animals. clean milk production, Digestive system, digestion of food in birds & feeding of different classes of birds. Female reproductive system of bird, egg formation, Incubation, and Hatching of Egg. Principles of Animal Nutrition. Feeding of Poultry : Classification of feeds, fodder, Conservation of fodder: Preparation of Hay and Silage. Enrichment of crop residues. Biosynthesis of milk. Physical and Chemical composition.

Practicals

1. General introduction of UAS livestock units and study and of common terminologies
2. Study of external body parts of cattle, buffalo and fowl
3. Study of important breeds of cattle, buffalo, and fowl (of Karnataka and National importance)
4. Judging and selection of animals
5. Estimation of age of animals by dentition
6. Study of housing of animals
7. Calf rearing and clean milk production
8. Physical and Chemical properties of milk
9. Sampling, physical examination and platform test of milk
10. Determination of specific gravity of milk
11. Estimation of fat in milk
12. Estimation of total solids and solid not fat in milk
13. Incubation and hatching of eggs and brooding of chicks
14. Study on structure, chemical composition, grading, preservation and abnormality of eggs
15. Study of common feeds and fodder's and formulation, of concentrate for animals
16. Economics of Dairy Units
17. Economics of Poultry Units
18. Exposure visit to Dairy and Poultry
19. Discussion and Interaction