

**Three/Four Yr. Degree Course
(Single Major & Double Minor with Research)
based on NEP-2020**

HOME SCIENCE



**(EFFECTIVE FROM SESSION 2026-27)
(BATCH: 2026-2029)**



SAMBALPUR UNIVERSITY
JYOTI-VIHAR, BURLA, SAMBALPUR, ODISHA-768019

The model curriculum and credit frame work for under graduate programmes as multiple entry and exit option with research and without research of National Education Policy-2020.

- I. ***CERTIFICATE COURSE:*** One Academic Year (First & Second Semester and Summer Vocational Course and Community Work) **44 CREDITS**
- II. ***DIPLOMA COURSE:*** Two Academic year (First, Second, Third & Fourth Semester and Summer Vocational Course and Community Work) **86 CREDITS**
- III. ***3YR. DEGREE COURSE:*** Three Academic Year (First, Second, Third, Fourth, Fifth & Sixth Semester and Community Work) **126 CREDITS**
- IV. ***4YR. DEGREE COURSE (HONOURS):*** Four Academic Year (First, Second, Third, Fourth, Fifth, Sixth, Seven & Eight Semester and Community Work) **166 CREDITS**
- V. ***4YR. DEGREE COURSE (HONOURS WITH RESEARCH):*** Four Academic Year (First, Second, Third, Fourth, Fifth, Sixth, Seven & Eight Semester and Community Work) **166 CREDITS**

Type of Course:

- I. ***Major (Core-I):*** is the subject of main focus and the degree will be awarded in that discipline.
- II. ***Minor Stream (Core-II):*** helps a student to gain a broader understanding knowledge beyond the major discipline. A student may gather 28 credits from a single subject
- III. ***Multidisciplinary U.G. Programme (09 Credits):*** Three introductory-level Multidisciplinary Course baskets are offered for students to choose any one from each semester outside of the subject/ discipline/ faculty: A group of related subject i.e., faculty (Arts/Commerce/Science). The student can opt three different subject/course for each semester examination.

- IV. **Ability Enhancement Course (AEC 08 Credits):** Student are required to achieve competency in a Modern Indian Language (MIL) and in the English language with special emphasis on language and communication skills (not literally skill). Literature and Linguistic courses shall be offered in major core and minor stream. In lieu of Odia, a student may opt for only Sanskrit, Hindi or Urdu.
- V. **Skill Enhancement Course (SEC 09 Credits):** A student has to opt the Skill Enhancement courses from the basket as per the subject available in the institution. The students can opt for any one course for each semester examination and these courses are aimed at imparting practical skills, hands-on training, soft skills, etc., to enhance the employability of students.
- VI. **Value Added Course (VAC 12 Credits):** The VAC course basket are prearranged for the students to choose for each semester's examination.
- VII. **Summer Internship/Apprenticeship/Summer Project (04 Credits with 120 Hours):** Community Engagement and Services/ Field work/ Internship programme is mandatory for all students of 4th Semester undergraduate Programmes of NEP-2020 carrying 4 credits which shall be completed in 120h (Students admitted in the session 2024-25 onwards) under affiliated colleges of Sambalpur University.
- A. Internship:** A course requiring students to participate in a professional activity or work experience or cooperative education activity with an entity external to the education institution, normally under the supervision of an expert of the given external entity. A key aspect of the internship is induction into actual work situations.
- Internships may be undertaken anywhere in India, subject to institutional approval and compliance with credit requirements.
 - Internships involve working with local industry, government or private organizations, business organizations, artists, crafts persons, NGOS, Private Sector organizations, Government / Public Sector institutions, Industries, MSMEs (Online or Offline) and similar entities to provide opportunities for students to actively engage in on-site experiential learning.

• **Online / Digital Internship Opportunities:** Internship may also be undertaken in online or hybrid mode through recognized Government of India platforms, subject to institutional approval and fulfilment of credit requirements.

• Students may undertake internships or field work through their own arrangement, subject to prior approval of the concerned HEI.

B. Community Engagement and Services/ Field work: Community Engagement activities shall be conducted through NSS. Students not enrolled under NSS may undertake community engagement projects / field work for 120h duration under the supervision of faculty members.

- After completion of Internship students will collect an internship completion certificate from the organization / competent authority.
- **Submission of Report and Evaluation:** Students opted for Internship/ Community engagement projects/ Field work are required to submit a report to the Institution for evaluation. Supporting documents like feedback from the host Organisation, geotagged photos and other relevant documents should be submitted with the report.

Table-I: Course Table Structure for Certificate Course: Exit after first Academic Year

One Academic Year: (1st & 2nd Semester and a Summer Vocational Course and Community Work)

Semester	Core-I	Core-II	Core-III	Multidisciplinary	AEC	SEC	VAC	Community Engagement & Field Work	Credit
I	2x4=8	1x4=4		1x3=3	1x4=4		1x3=3		22
II	2x4=8		1x4=4	1x3=3	1x4=4	1x3=3			22
Total	4x8=16	1x4=4	1x4=4	2x3=6	2x4=8	1x3=3	1x3=3		44

Table-II: Course Table Structure for Diploma Certificate Course: Exit after Second Academic Year

Two Academic Year: (1st, 2nd, 3rd & 4th Semester and a Summer Vocational Course and Community Work)

Semester	Core-I	Core-II	Core-III	Multidisciplinary	AEC	SEC	VAC	Community Engagement & Field Work	Credit
I	2x4=8	1x4=4		1x3=3	1x4=4		1x3=3		22
II	2x4=8		1x4=4	1x3=3	1x4=4	1x3=3			22
									44
III	3x4=12	1x4=4		1x3=3			1x3=3		22
IV	3x4=12		1x4=4						20
									42
Total	10x4=40	2x4=8	2x4=8	3x3=9	2x4=8	1x3=3	2x3=6		86

Table-III: Course Table Structure for Three Years Degree Course with Single Major and Two Minor

Semester	Core-I	Core-II	Core-III	Multidisciplinary	AEC	SEC	VAC	Community Engagement & Field Work	Credit
I	2x4=8	1x4=4		1x3=3	1x4=4		1x3=3		22

II	2x4=8		1x4=4	1x3=3	1x4=4	1x3=3			22
									44
III	3x4=1 2	1x4= 4		1x3=3			1x3=3		22
IV	3x4=1 2		1x4=4					1x4=4	20
									42
V	3x3=12	1x4= 4				1x3=3	1x3=3		22
VI	2x4=8		1x4=4			1x3=3	1x3=3		18
									40
Total	15x4=60	3x4=12	3x4=12	3x3=9	2x4=8	3x3=9	4x3=12	1x4=4	126

Note: In case a student opts for NCC and clears 'C' certificate additional 16 credits shall be awarded and total credit shall be 126+16= 142 credits

Table-IV: Course Table Structure for Three Years Degree Course with Double Major

<i>Semester</i>	<i>Core-I</i>	<i>Core-II</i>	<i>Multidisciplinary</i>	<i>AEC</i>	<i>SEC</i>	<i>VAC</i>	<i>Community Engagement & Field Work</i>	<i>Credit</i>
I	2x4=8	2x4=8	1x3=3	1x4=4		1x3=3		26
II	2x4=8	2x4=8	1x3=3	1x4=4	1x3=3			26
								52
III	3x4=12	2x4=8	1x3=3			1x3=3		26
IV	3x4=12	2x4=8					1x4=4	24
								50
V	3x3=12	2x4=8			1x3=3	1x3=3		26
VI	2x4=8	2x4=8			1x3=3	1x3=3		22
								48
Total	15x4=60	12x4=48	3x3=9	2x4=8	3x3=9	4x3=12	1x4=4	150

Table-V: Course Table Structure for Fourth Year Honours without Research

<i>Semester</i>	<i>Core-I</i>	<i>Core-II</i>	<i>Core-III</i>	<i>Multidisciplinary</i>	<i>AEC</i>	<i>SEC</i>	<i>VAC</i>	<i>Community Engagement & Field Work</i>	<i>Credit</i>
I	2x4=8	1x4=4		1x3=3	1x4=4		1x3=3		22
II	2x4=8		1x4=4	1x3=3	1x4=4	1x3=3			22
									44
III	3x4=12	1x4=4		1x3=3			1x3=3		22
IV	3x4=12		1x4=4					1x4=4	20
									42
V	3x3=12	1x4=4				1x3=3	1x3=3		22
VI	2x4=8		1x4=4			1x3=3	1x3=3		18
									40
VII	4x4=16	1x4=4							20
VIII	4x4=16	1x4=4							20

Total	23x4=92	5x4=20	3x4=12	3x3=9	2x4=8	3x3=9	4x3=12	1x4=4	166
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Table-VI: Course Table Structure for Fourth Year Honours with Research

<i>Semester</i>	<i>Core-I</i>	<i>Core-II</i>	<i>Core-III</i>	<i>Multidisciplinary</i>	<i>AEC</i>	<i>SEC</i>	<i>VAC</i>	<i>Community Engagement & Field Work</i>	<i>Credit</i>
I	2x4=8	1x4=4		1x3=3	1x4=4		1x3=3		22
II	2x4=8		1x4=4	1x3=3	1x4=4	1x3=3			22
									44
III	3x4=12	1x4=4		1x3=3			1x3=3		22
IV	3x4=12		1x4=4					1x4=4	20
									42
V	3x3=12	1x4=4				1x3=3	1x3=3		22
VI	2x4=8		1x4=4			1x3=3	1x3=3		18

									40
VII	3x3=12	2x4=8							20
VIII	2x4=8							Research 12	20
Total	20x4=80	5x4=20	3x4=12	3x3=9	2x4=8	3x3=9	4x3=12	16	166

COURSE AT A GLANCE (NEP-UG)

SUBJECT: HOME SCIENCE

ACADEMIC SESSION: 2026-29

CORE-I COURSE

Course Number	Semester	Course Title	Type of Paper P- Practical NP-Non- practical	Credit Hour	Maximum Weightage of Marks
Paper-I	Semester-I	FOOD AND NUTRITION	P	4	100
Paper-II		CHILD DEVELOPMENT	P	4	100
Paper-III	Semester-II	FAMILY RESOURCE MANAGEMENT	P	4	100
Paper-IV		HOME SCIENCE EXTENSION EDUCATION	P	4	100
Paper-V	Semester-III	INTRODUCTION TO TEXTILES	P	4	100
Paper-VI		DYNAMICS OF COMMUNICATION	P	4	100
Paper-VII		DEVELOPMENT IN LATE CHILDHOOD AND ADELOSCENCE	P	4	100
Paper-VIII	Semester-IV	MATERNAL AND CHILD NUTRITION	P	4	100
Paper-IX		HUMAN PHYSIOLOGY	P	4	100
Paper-X		FUNDAMENTALS OF CLOTHING AND FASHION DESIGN	P	4	100
Paper-XI	Semester-V	MARRIAGE AND FAMILY STUDY	NP	4	100
Paper-XII		FAMILY FINANCE AND CONSUMER STUDIES	P	4	100
Paper-XIII		COMMUNITY HEALTH AND NUTRITION	P	4	100
Paper-XIV	Semester-VI	RESEARCH METHODOLOGY	NP	4	100
Paper-XV		HOUSING AND INTERIOR DESIGN	P	4	100
Paper-XVI		THERAPEUTIC NUTRITION	P	4	100

Paper-XVII	Semester-VII	EARLY CHILDHOOD CARE AND EDUCATION	P	4	100
Paper-XVIII		HOUSEHOLD ECONOMICS	P	4	100
Paper-XIX		RURAL DEVELOPMENT	P	4	100
Paper-XX	Semester-VIII	FABRIC CARE AND MANAGEMENT	P	4	100
Paper-XXI		FOOD SAFETY AND STANDARDS	P	4	100
Paper-XXII		EXCEPTIONAL CHILDREN	P	4	100
Paper-XXIII		ENTERPRENURSHIP DEVELOPMENT	P	4	100

CORE-II/CORE-III COURSE

Course Number	Semester Core-II/ Core-III	Course Title	Type of Paper P-Practical NP(Non-ractical)	Credit Hour	Maximum Weightage of Marks
Paper-I	Semester-I/II	FOOD AND NUTRITION	P	4	100
Paper-II	Semester-III/IV	CHILD DEVELOPMENT	P	4	100
Paper-III	Semester-V/VI	FAMILY RESOURCE MANAGEMENT	P	4	100
Paper-IV	Semester-VII	HOME SCIENCE EXTENTION EDUCATION	P		
Paper-IV	Semester-VIII	INTRODUCTION TO TEXTILE	P		

ABILITY ENHANCEMENT COURSE (AEC) UNDER NEP-2020

Sl. No.	Semester	Course	Credit hour (CH)	Full Mark
Paper-I	I	Odia/Hindi/Sanskrit/Urdu	4	100
Paper-II	II	English	4	100

MULTIDISCIPLINARY COURSE:

NOTE: THIS IS APPLICABLE FOR STUDENT ADMISSION FOR THE 2026-27 BATCH.

1. A basket of semester wise MDC Courses (**Table-I**) have been approved by Sambalpur University, which will be applicable to all the U.G. programme in the affiliated colleges under Sambalpur University.
2. Students have to opt for one subject in each semester from the semester- wise subject list provided in the basket.
3. During the counselling, students are to be encouraged to opt for courses outside their discipline/faculty. (A Group of related subjects, i.e., Faculty: Science/Arts/Commerce).
4. The students are expected to choose MDC from the subjects other than their major subjects. For example, a Home Science student cannot be allowed to opt MDC from Home Science and have to choose from any other Department.

NOTE: The student cannot opt for a course already chosen in earlier semester. Ex: The subject chosen by a student in the 1st Semester cannot be chosen in 2nd Semester and the subject chosen in 1st & 2nd semester cannot be chosen in 3rd semester.

Table -1: List of MDC Course at UG level

SEMESTER-I

MULTIDISCIPLINARY COURSE (MDC) UNDER NEP-2020					
Sl. No.	Department to teach	Semester Course	Type of Paper P- Practical NP-Non-practical	Credit hour (CH)	Full Mark
1.	Chemistry	Environmental Chemistry	NP	3	100
2.	Botany	Gardening and Vermicomposting	NP	3	100
3.	Economics	Economics in Everyday Life	NP	3	100
4.	History	History of Education in Modern India	NP	3	100
5.	Odia	ତୁଳନାତ୍ମକ ସାହିତ୍ୟ	NP	3	100

6.	Political Science	Political Process in India	NP	3	100
7.	English	Ethical Literature	NP	3	100
8.	Commerce	Financial literacy	NP	3	100
9.	Education	Educational Psychology	NP	3	100
10.	Mathematics	Discrete Mathematics	NP	3	100
11.	Sociology	Sociology for Social Workers	NP	3	100
12.	Physics	Biophysics	NP	3	100

SEMESTER-II

MULTIDISCIPLINARY COURSE (MDC) UNDER NEP-2020					
Sl. No.	Department to teach	Semester Course	Type of Paper P-Practical NP-Non-practical	Credit hour (CH)	Full Mark
1.	Statistics	Survival Analysis and Biostatistics	NP	3	100

2.	Zoology	Apiculture	NP	3	100
3.	Education	Gender and Education	NP	3	100
4.	Geography/Geology	Climatology	NP	3	100
5.	Philosophy	Vedic Culture	NP	3	100
6.	Hindi	विज्ञापन अवधारणा और प्रयोजनमूलक अय्यन	NP	3	100
7.	Home Science	Food Science and Nutrition	NP	3	100
8.	Commerce	Fundamentals of Entrepreneurship and E-Commerce	NP	3	100
9.	Economics	Demography	NP	3	100
10.	Mathematics	Introduction to Programming with MATLAB	NP	3	100
11.	Political Science	Indian Administration	NP	3	100
12.	History/Geography	Sustainable Tourism	NP	3	100

SEMESTER-III

MULTIDISCIPLINARY COURSE (MDC) UNDER NEP-2020

Sl. No.	Department to teach	Semester Course	Type of Paper P- Practical NP-Non-practical	Credit hour (CH)	Full Mark
1.	Mathematics/Computer Science	Programming C++	NP	3	100
2.	Physics	Introduction to Spectroscopy	NP	3	100
3.	History/ Sanskrit	Indian Knowledge System	NP	3	100
4.	Political Science	Human Rights	NP	3	100
5.	Botany/Zoology	Environmental issues and Challenges	NP	3	100
6.	Commerce	Entrepreneurship Development and start up	NP	3	100
7.	Psychology	Health Psychology	NP	3	100
8.	Philosophy	Philosophy of Bhagavad Gita	NP	3	100
9.	Botany	Herbarium Preparations	NP	3	100
10.	Education	Educations Thinkers of Modern India	NP	3	100
11.	Sociology	Public Policy	NP	3	100
12.	Library & Information Science	Management of Libraries	NP	3	100

SKILL ENHANCEDMENT COURSE:

NOTE: THIS IS APPLICABLE FOR STUDENT ADMISSION FOR THE 2026-27 BATCH.

1. *A basket of Skill Enhanced Course for various disciplines has been approved by the Sambalpur University and will be applicable to all undergraduate programme in the affiliated colleges under Sambalpur University.*
2. *A student may opt one SEC course form the basket during a particular semester, ensuring no repetition. Details of the SEC courses for each semester are provided in table-2.*
3. *Artificial Intelligence has been offered as a compulsory course at 2nd semester Skill Enhancement Course.*

TABLE-2: LIST OF THE SEC COURSE AT UG LEVEL

SKILL ENHANCEDMENT COURSE (SEC) UNDER NEP-2020			
	SEMESTER-II	Credit hour (CH)	Full Mark
Paper- I	PERSONALITY DEVELOPMENT OR ELECTION STUDIES AND PUBLIC OPINION OR QUANTITATIVE AND LOGIAL THINKING OR ANALYTICAL THINKING AND LOGICAL RESONING OR		

	RENEWABLE ENERGY AND ENERGY HARVESTING OR VERMICOMPOSTING OR PROJECT MANAGEMENT	3	100
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SKILL ENHANCEDMENT COURSE (SEC) UNDER NEP-2020 SEMESTER-V			
Paper-II	ARTIFICIAL INTELLIGENCE Compulsory for all (Arts, Science & Commerce)	Credit hour (CH)	Full Mark
		3	100

SKILL ENHANCEDMENT COURSE (SEC) UNDER NEP-2020			
	SEMESTER-VI	Credit hour (CH)	Full Mark
Paper- III	LIFE SKILL EDUCATION OR QUANTITATIVE AND LOGICAL THINKING OR		

	INCOME TAX E-RETURN FILING OR ORGANIC FARMING OR BIOFERTILIZERS OR TYPE SETTING IN LATEX OR FOOD FERMENTATION TECHNIQUES	3	100
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VALUE ADDED COURSES (VAC)
UNDER NEP – 2020

1. *The student will have to study one VAC course in each semester (I, III, V, VI) irrespective of their disciplines are reflected in Table-3.*

TABLE-3: LIST OF THE VAC COURSE AT UG LEVEL

VALUE ADDED COURSES (VAC) UNDER NEP – 2020				
Paper	Semester	Course title	Credit	Marks
PAPER I	Semester-I	Environmental Studies and Disaster Management	3	100
PAPER II	Semester-III	Ethics & Values	3	100
PAPER III	Semester-V	Understanding Odisha	3	100

PAPER IV	Semester-VI	Creative Writing	3	100
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Semester I

Core I

Food and Nutrition

Course Outcome:

- The students will get basic knowledge on food, nutrients and their contribution.
- The students will gain practical knowledge on market survey and locally available food stuffs from each food group.

Learning Outcome:

- The students will Learn the basic concepts in food ,nutrition and health.
- The students will gain an insight into the classification, functions, dietary sources, and daily requirements of various nutrients.
- The students will understand about different food groups and their nutritional contribution.
- The students will be aware of different methods of cooking along their advantages and disadvantages.

Unit I: Basic Concepts in Food and Nutrition

- Introduction to Food and Nutrition Science- Definitions (food, food science, food additive, fermented food, food fortification, functional food, nutrition, health, nutrients, nutritional status, optimal nutrition, nutrition security).
- Classification and Functions of Food- Physiological, psychological, and socio-cultural.
- Food Groups- Basic five and seven food groups, their nutritional contribution.

- Methods of Cooking- Different methods of cooking and their advantages and disadvantages: Dry methods - frying, sautéing, parching, roasting, grilling/broiling, toasting and baking. Moist methods- boiling, steaming, stewing, simmering, poaching, blanching, pressure cooking. Combination method- braising.

Unit II: MacroNutrients

- Carbohydrates-Introduction, classification, functions, dietary sources and daily requirements.
- Proteins-Introduction, classification, functions, dietary sources and daily requirements.
- Lipids-Introduction, classification, functions, dietary sources and daily requirements.

Unit III: MicroNutrients

- Fat Soluble Vitamins (A, D, E and K)- Introduction, functions, dietary sources, daily requirements and deficiency diseases.
- Water Soluble Vitamins (Thiamin, Riboflavin, Niacin, Folate, Vitamin B12 and Vitamin C)- Introduction, functions, dietary sources, daily requirements and deficiency diseases.
- Minerals (Calcium, Iron, Zinc and Iodine)- Introduction, functions, dietary sources, daily requirements and deficiency diseases.

Unit IV: Practical

- Conduct a market survey (On-line/ offline of nearby locality) and prepare a list of food stuffs and food products of the following food groups:
- Cereals, Millets, Pulses, Fruits, Vegetables, Milk and Milk Products, Fish Meat and Poultry Products.
- Weights and Measures: Standardization of household measures for raw and cooked foods.

- Food preparations using different methods of cooking and understanding the principles involved in it-Dry heat-frying, broiling, parching, baking) and Moist heat-boiling, stewing, cooking under pressure: (One item from each method).
- Preparation of food exchange list of cereals/pulses/fruits/vegetables.

Text Books:

- ✓ *Srilakshmi.B, Food Science, New Age International (P) Limited Publishers.*
- ✓ *Srilakshmi.B, Nutrition Science, New Age International Pvt. Ltd.*
- ✓ *N. Shakuntala Manay, M. Shadaksharaswamy, Foods Facts and Principles, New Age International (P) Limited Publishers.*
- ✓ *Swaminathan.M, Advanced Text-Book on Food and Nutrition, Volume 1 and 2, The Bangalore reprinting and publishing co. LTD.*

Reference Books:

- ✓ *Bamji M.S., Krishnaswamy K., Brahman G.N.V. Textbook of Human Nutrition, Oxford and IBH publish Co Pvt. Ltd.*
- ✓ *Norman.N Potter, Joseph H. Hotchkiss, Food Science, 5th edition, CBS Publishers, and Distributors.*
- ✓ *Mudambi S. R. and Rajagopal M. V., Fundamentals of foods and Nutrition, New Age International Pvt. Ltd.*
- ✓ *Gopalan, C. Rama Sastry, B. V., and Balasubramanian, S. C., Nutritive value of Indian Foods, National Institute of Nutrition, ICMR, Hyderabad.*

E-Resources:

- ✓ <http://www.nutrition.gov>
- ✓ <http://www.usda.gov>
- ✓ <http://egyankosh.ac.in>
- ✓ <http://ecourses.icar.gov.in>

Model Questions:

1. Give an example of the fat-soluble vitamins. (**One word**)
2. Define Nutrition. (**Maximum 50 words**)

3. Discuss about the classification of carbohydrate. **(Maximum 250 words)**
4. Explain the classification and functions of food. **(Maximum 800 words)**

Core II Child Development

Course Outcome:

- Students will be able to understand the crucial aspects of child development.
- Students will understand about the developmental patterns of child development.

Learning Outcome:

- The students will gain an insight on scientific methods of studying child development.
- The students will be aware of the stages of prenatal development and factors affecting pre-natal development.
- The students will understand the developmental patterns during early childhood years (0-5 years).
- The students will gain practical knowledge on development tasks in childhood.

Unit I: Fundamentals of Child Development:

- Child Development-
Meaning, definition, principles, stages, and methods of studying child development.
- Prenatal Growth and Development-
Meaning, significance and stages of prenatal growth and development, conception, period of ovum, period of embryo and period of foetus.
- Prenatal Environmental Influences-
Maternal age, nutrition, drugs, irradiation, alcohol, smoking, maternal emotions, maternal health, Rh factor, diseases and birth hazards.

Unit II: Developmental Milestones (During First Five Years of Child's Life):

- Physical Development-
Physical growth cycles, body size, body proportions, bones, teeth, muscles and fat, development of the nervous system.

- Motor Development – Meaning, principles and sequence of motor development.
- Speech Development – Meaning, pre-speech forms of communication, essentials in learning to speak, major tasks in learning to speak and speech disorders.

Unit III: Developmental Milestones (During First Five Years of Child's Life):

- Emotional Development - Meaning, common emotional patterns, and characteristics of childhood emotions.
- Social Development – Meaning, process and importance of early social experiences, factors influencing social development.
- Cognitive Development - Meaning and importance, factors influencing cognitive development.

Unit IV: Practical

- Assessing developments (physical/motor/emotional/social/cognitive/speech) using different methods of child study – interview schedule / observation schedule / anthropometry/ psychometry tests.
- Assessment of existing knowledge, attitudes and practices of parents and field functionaries (ANM/anganwadi workers/teachers) related to developmental milestones of children (any five samples).
- Plan and develop activities for children to facilitate motor and cognitive development through preparation of learning materials such as posters/charts/toys etc.
- Plotting growth monitoring chart for children from one to five years and its interpretations.

Text Books:

- ✓ Hurlock E.B. - *Child Development*; New Delhi; McGraw Hill.
- ✓ Hurlock E.B. - *Developmental Psychology*; New Delhi; McGraw Hill.
- ✓ Chowdhury, A - *Text Book on Child Development and Family Relations*, New Delhi: Academic Excellence.
- ✓ Panda K.C. - *Elements of Child Development*; Kalyani Publishers.
- ✓ Kuppuswamy B - *Text Book of Child Behavior and Development*; India;

ReferenceBooks:

- ✓ JayaN.,andRajammalP.D.-ATextBookofChildDevelopment.NewDelhi:McMillanPublishers.
- ✓ MussenP.H.,CongerJ.J,KaganJ.-
ChildDevelopmentandPersonality;NewYork;HarpersandRow publishers.
- ✓ Weiner I.B., Elkind D. - Child Development: A Core Approach; John Wiley & SonsInc.
- ✓ Papalia,Olds&Feldman-
HumanDevelopment;McGrawHillHumanities/SocialSciences/Language.

EResources:

- ✓ <https://www.choc.org/primary-care/ages-stages/3-years/>
- ✓ <https://www.betterhealth.vic.gov.au/health/>.
- ✓ <https://raisingchildren.net.au/preschoolers/development/development>.
- ✓ <https://www.cdc.gov/ncbddd/childdevelopment/facts.html>
- ✓ <https://www.all4kids.org/news/blog/why-the-first-5-years-of-child>

ModelQuestions:

1. Periodofovum lastsfor_____days.(Oneword)
2. Explainabouttheprinciplesof childdevelopment? (Maximum 50words)
- 3.Discussaboutthestagesofprenataldevelopment? (Maximum 250words)
4. Discuss about the factors affecting the physical growth and development in children.
(Maximum800words)

Semester II

Core IIIFamily Resource Management

CourseOutcome:

- Studentswillbeorientedabouttheavailablehumanandnon-humanresourcesinthefamilyandtheirmanagement.
- Studentswilllearntheimportanceofjudiciousmanagementofresourcesandtheirconservationtec

hniquesforsustainability.

LearningOutcome:

- Thestudentswillgainaninsightonfamilyresourcemanagementanditsapplication.LO2:Thestudentswillbeawareofthemanagementprocess.
- Thestudentswilllearnaboutjudiciousutilizationofresourcesmanagementforconservationand sustainability.
- Thestudents willgetpractical knowledgeonevent planningandmanagement.

UnitI: ResourceManagementinFamilySetting

- Family Resource Management-Concept, definition and scope of family resource management.
- Resources-Meaning,classificationandcharacteristicsoffamilyresources,factorsaffectingutilization of resources.
- Decisionmaking-Types ofdecisions, stepsofdecision making.

UnitII:MotivatingFactorsinManagementandManagementProcess:

- MotivatingFactorsinManagement-
Motivationinmanagement,theoriesofmotivation,Maslow'shierarchy ofneedstheory
- MotivatingFactors-
Values,goalsandstandards,interrelatednessofvalues,goals,andstandards.
- ManagementProcess-
Definitionandstepsinmanagementprocess:planning,organizing,controllingandevaluating, qualitiesofagood homemaker.

UnitIII: ResourceConservation:

- Money-Typesofincome, supplementingfamily income.
- Time-
Conceptandstepsintimemanagement,factorstobeconsideredinmakingtimeandactivityplan.
- Energy-Efforts,fatigue,worksimplificationtechniquesandMundel'sclassesofchange.

- Space–Meaning,importance,functionalstoragespacemanagement.

UnitIV:Practical

- ConductaSWOCanalysisofself/organization.
- Event planning for departmental activity (Celebration of any specialday/seminar/workshop).
- Decisionmakingthroughmanagementgames(Chess/tugofwar/UNO).
- Planandevaluatetimeactivitychart foroneday.

TextBooks:

- ✓ *SeetharamanP.,BatraS.andMehraP.,FamilyResourceManagement,CBSPublishe
rs& Distributors, New Delhi.*
- ✓ *Nickell,PandDorsey,J.M.,Managementinfamilyliving,CBSPublishers,andDistributors.*
- ✓ *Gross I.HandCrandallE.W.,Managementfor ModernFamilies.*
- ✓ *HomeManagement–EducationPlanningGroup,Aryapublishinghouse,Delhi.*

ReferenceBooks:

- ✓ *Vergese,Ogale andSrinivasan,HomeManagement.*
- ✓ *MannM.K.,HomeManagementfor Indian Families.*
- ✓ *Biswal,G.E.,FamilyResourceManagement. HimalayaPublishingHouse.*
- ✓ *MallickP.,TextbookofHome Science.*
- ✓ *DevdasandJaya,IntroductiontoHomeScience.*

E-Resources:

- ✓ <https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=8x0nJkh/R0vHkX1U70Z/CQ==>.
- ✓ <https://nios.ac.in/media/documents/srsec321newE/321-E-Lesson-10.pdf>
- ✓ [https://www.brainkart.com/article/Definition-and-Concept-of-Family-
Resource-Management_33507/](https://www.brainkart.com/article/Definition-and-Concept-of-Family-Resource-Management_33507/)

ModelQuestions:

1. -----
isthefirstprocessinthemanagementprocess.**(oneword)**
2. Writethemeaningandtypesofdecisionmakinginafamily.

(maximum 50 words)

3. Describe the work simplification process. **(maximum 50 words)**
4. Discuss about the concept, definition, and scope of Family Resource Management. **(maximum 800 words)**

Core IV

Home Science Extension Education

Course Outcome:

- To enrich students about relevance of extension education and its application.
- To understand about the application of extension teaching methods for teaching and training purpose.

Outcome Learning:

- The students will be enriched with the principle and behavioral changes brought about by extension education.
- The students will understand extension education in community development.
- The students will be aware of the methods of teaching in extension education.
- The students will learn about the educative materials preparation for different training purposes and get experience of various extension organizations.

Unit I: Introduction to Extension Education:

- Definition, needs, objectives and scope of extension education.
- Philosophy and principles of extension education.
- Behavioral changes through extension education.

Unit II: Role of Home Science Extension Education in Community Development:

- Meaning, definition and areas of community development. Home science extension education and its inter-relationship with community development.
- Role & qualities of Home Science extension workers.

- HomeScienceExtensionProgrammes- MissionShakti,MGNREGA,NationalMissionforempowermentofwomen,ICDS,GreenIndi aMission(GIM).

UnitIII:TeachingMethods inExtensionEducation:

- ClassificationofExtension TeachingMethods- Individual,groupandmassmethods.individualmethods:farmandhomevisits,officecalls,telep honecalls,personalletters.
- GroupMethods-Methoddemonstration,campaign,puppetry,general meetingresultdemonstration,roupdiscussion,tours,fieldtrips,lecture,seminar, andworkshop,advantagesand disadvantages.
- Mass Methods-Leafletsandfolders,exhibition, circular letter, radio,television,bulletins,storyfilmshow,andnewsarticles,advantages&disadvantag es.

UnitIV:Practical

- Preparealeaflet/posteron variousissuesrelatedwomen,childrenandenvironment.
- Prepareaprojectreportwithinonethousandwordsonwomen/children/environment.
- Prepareaflow charton thestepsofmethoddemonstrationbyextensionworker.
- Visitto Mission Shakti centers/ NGO and prepare a report (Objectives, Functions, Achievements)

TextBooks:

- ✓ *V.KDubey,IndiraBishnoi,ExtensionEducationandCommunication,NewAgeInte rnationalPublishers.*
- ✓ *S.VSupe,AnIntroductiontoExtensionEducation,OxfordandPublishingCo.Pvt.Lt d*
- ✓ *NibeditaMishraandGayatriBiswal,TextBookofHomeScienceExtensionEducati on,Recent Edition.*

Reference Books:

- ✓ *Textbook of Home Science - Prem Lata Mallick.*
- ✓ *Education and Communication for Development, O.P. Dahama, O.P. Bhatnagar.*

E-Resources:

- ✓ <https://Timesagriculture.Com/Role-Of-Home-Science-Extension-In-Education/>
- ✓ <https://www.researchgate.net/publication/>
- ✓ <https://Alhafeezcollege.Org/Alfz/Assets/Uploads>
- ✓ <https://www.rohtasmahilacollegessm.ac.in/Wp-Content/Uploads/Sites>
- ✓ <https://www.egyankosh.ac.in/bitstream/123456789/53665/3/block-1.pdf>

Model Questions:

- Q.1- The term extension education is derived from _____ (one word)
- Q.2- What are the qualities of extension worker. (Answer maximum 50 words)
- Q.3- Explain about the method demonstration. (Answer maximum 250 words)
- Q.4- Define extension education and discuss about the principles of extension education. (Answer maximum 800 words)

Semester III

Core V Introduction to Textiles

Course Outcome

- Students will develop an idea about different textile fibers.
- Students will develop the skills to analyze yarn construction techniques.

Learning Outcome:

- The students will learn about classification, usage and production of textile fibres.
- The students will know the manufacturing process and yarn construction techniques.
- The students will gain an insight into techniques of fabric construction, dyeing and printing.
- The students will be enriched about different types of dyeing and printing techniques.

UnitI:IntroductiontoTextileFibres:

- Definitionoftextilefibres,terminology andclassificationoftextilefibres.
- Production,ManufacturingProcess,Propertiesandusageoffibres-Naturalfibre(cotton,silkandwool).
- Production,ManufacturingProcess,PropertiesandUsageofFibres-Man-made fibers(rayon(Viscose),polyester, nylon).

UnitII:YarnConstruction

- Types andClassificationofYarns-Simple, plyyarns, cord yarns, noveltyyarns.twistinyarn:“s”and “z”twist.
- Stapleyarnformation.
- Woolenandworstedyarnformationprocess.
- Chemicalspinning(wet,dry,melt)

UnitIII:

TechniquesofFabricConstructi

on

- Weaving-
Meaning,essentialweavingoperation,classificationofweaves(plain,basket,ribbed,twill, satin,sateen)-structure,properties,usages.
- Dyeing and Printing Methods – Raw stock dyeing, skein-dyeing, piece dyeing, cross dyeing,tie-die, batik dyeing, printing methods – direct printing, block printing, stencil printing andprintingby machine.

UnitIV: Practical

1. Fiber identification: Identification of natural and manmade fibers by following three methods -microscopic test,burningtest.
2. Characteristics of Fabric (following standards):Fabric count using pick glass
3. Printing of fabrics using:

- i. Directstyle-Block, stencil and screen
 - ii. Resiststyle -Tie and dye, batik
4. Weaves-Prepare sample weave on plain, basket, ribbed, twill, satin, sateen.

Text Books:

- ✓ *Textiles-Fiber to fabric (6th Edition)* by Corbman P.B. (1985). Gregg Division/McGraw Hill Book Co, US.
- ✓ *Advanced Drafting and Draping* by Manmeet Sodhia. New Delhi.
- ✓ *Household Textiles & Laundry Work* by Durga Deulkar. Atma Ram & Sons, New Delhi.

Reference Books:

- ✓ *Essentials of Textiles (6th Edition)* by Joseph, M.L. Holt, Rinehart and Winston Inc, Florida.
- ✓ *Textile Science* by Vilensky G. CBS Publishers and Distributors, Delhi.
- ✓ *Understanding Textiles* by Tortora, G. Phyllis. McMillan Co. USA.
- ✓ *Textbook of Fabric Science: Fundamental to finishing* by Sekhri S. (2013). PHI Learning, Delhi.

E-Resources:

- ✓ <https://csauk.ac.in/wp-content/uploads/2022/08/Textile-fiber-NEW.pdf>
- ✓ <https://gphisar.ac.in/wp-content/uploads/2022/09/TEXTILE-FUNDAMENTALS.pdf>
- ✓ <https://nios.ac.in/media/documents/srsec321newE/321-E-Lesson-23.pdf>
- ✓ <https://egyankosh.ac.in/bitstream/123456789/92831/1/Unit-8.pdf>

Model Questions:

- 1 ----- is known as queen of fiber. **(One Word)**
- 2- Short note on classification of weaving. **(Maximum 50 words)**
- 3- Discuss about the steps of chemical finishing process. **(Maximum 250 words)**
- 4- Explain about the cotton fibers and discuss about the preparation of cotton fibers. **(Maximum 800 words)**

Core VI

DynamicsofCommunication

CourseOutcome:

- Understandtheneedofcommunicationand communicateeffectively.
- Gaintheknowledgeabout thedifferentaspectsofcommunication.

LearningOutcome:

- The students will understand the concept, functions,typesandscopeofcommunication.
- Thestudentswillbeawareoftheprinciples,elementsandmodelsofcommunication.
- Thestudentswilllearnabouttheconceptofeffective communication.
- Thestudentswilllearnskillsofwritingscriptsandpreparationofeducationalaidseffectivecom munication.

UnitI:IntroductiontoCommunication

- Meaning, definition concept, natureand scopeof communication
- TypesofCommunication-Formalandinformalcommunication, verbalandnon-verbalcommunication.
- Functionsandcharacteristicsofcommunication.

UnitII:Principles,Elements,andModelsofCommunication:

- Elementsofcommunicationandprinciplesofcommunication
- Barrierstocommunication-Mental,physical,technical,environmental,semantic.
- Modelsofcommunication- Aristotle,Laswell,Shannonand Weaver,OsgoodandSchramm,Rileymodel.

UnitIII:EffectiveCommunication

- Meaning,concept,andimportanceofeffectivecommunication.
- Factors influencing and hindering effectivecommunication, importance of communication

process.

- Role of empathy, persuasion, perception, listening, propaganda and publicity for effective communication.

Unit IV: Practical

1. Plan and conduct a small group communication in classroom setting on any topic and prepare a report.
2. Visit to an area slum/community/village and communicate with the people on specific issues (health/environment / social) and write a report.
3. Write a short story with any social message related to Home Science.
4. Prepare a power point presentation on any contemporary social issue.

Text Books:

- ✓ *O.P. Dahama, O.P. Bhatnagar. Education and communication for development.*
- ✓ *G.L. Ray. Extension communication and management.*

Reference Books:

- ✓ *Barker, L. (1990) "Communication" New Jersey Prentice Hall Inc 171.*
- ✓ *Patri and Patri (2002); Essentials of communication Greenspan publication*

E-Resources:

- ✓ <https://nscpolteksby.ac.id/ebook/files/Ebook>
- ✓ <https://www.researchgate.net/publication/>
- ✓ <https://www.semanticscholar.org/paper/The-Dynamics-of-Communication>
- ✓ <https://www.arcjournals.org/pdfs/ijhsse/v3-i10/3.pdf>
- ✓ <https://faculty.wcas.northwestern.edu>

Model Questions:

1. The term Communication is derived from _____. (One word)
2. What are the elements of communication. (Maximum 50 words)
3. Discuss about the functions of communication. (Maximum 250 words)
4. What are the different models of communication and explain it with its significance.

(Maximum 800 words)

Core VII Development in Late Childhood and Adolescence

Course Outcome:

CO1-Students will be able to gain understanding about the various needs of adolescent years.

CO2-This course will help to provide guidelines about the developmental tasks of adolescent years.

Learning Outcome:

LO1: The students will know about the characteristics, body changes and effect of puberty

LO2: The students will learn about the characteristics, developmental tasks and body changes during adolescence.

LO3: The students will gain an insight on characteristics, developmental tasks, and changes in early adulthood.

LO4: The student will understand about various adjustments of family.

Unit I: Late Childhood Years:

- Characteristics and developmental tasks of late childhood.
- Physical development, speech improvements and emotional expressions in late childhood.
- Social grouping and personality changes in late childhood.

Unit II: Puberty:

- Meaning, characteristics and age at puberty
- Body changes at puberty, puberty growth spurt: age and stages of puberty growth.
- Physical, psychological, and emotional changes during puberty.

Unit III:Adolescence:

- Meaning,characteristicsofadolescentyears.
- Developmentaltasksduring adolescence.
- Physical,emotional,hormonalandbehavioral changes.

Unit-IV: Practical:

- Prepareaposter ondevelopmentaltasksofatechildhood/adolescence.
- Developaninterviewscheduleforidentifyingadolescent'sproblems/issuesanddrawinginferences (atleast 2 boys and2 girls).
- Assessphysical/social/emotionaldevelopmentamongboysandgirlsduringlatechildhood/adolescence.

TextBooks:

- ✓ *HurlockE.B.-DevelopmentalPsychology;NewDelhi;McGraw Hill.*
- ✓ *Chowdhury,A-
TextBookonChildDevelopmentandFamilyRelations,NewDelhi:AcademicExcellence.*
- ✓ *PandaK.C.-Elementsof ChildDevelopment;KalyaniPublishers.*
- ✓ *Kuppuswamy B -Text Book of Child Behavior and Development; India;
KonarkPublishers Pvt. Ltd.*

ReferenceBooks:

- ✓ *SinghA.(Ed.)
FoundationofHumanDevelopment,Alifespanapproach,NewDelhi,OrientBlackSwan.*
- ✓ *Berk.L.E.-Developmentthroughthe lifespan,Delhi:PersonEducation.*
- ✓ *RiceF.P –HumanDevelopment:Alifespanapproach,NewJersey:PrenticeHall*
- ✓ *Rutter, M., and Rutter – A topical approach to life-span, development, New Delhi
TataMcGraw-Hill.*

E-Resources:

- ✓ <file:///C:/Users/Lenovo/Downloads/Block-3.pdf>
- ✓ <https://egyankosh.ac.in/bitstream/123456789/17134/1/Unit-3.pdf>
- ✓ <file:///C:/Users/Lenovo/Downloads/Unit-4.pdf>.

Model Questions:

1. Define Late Childhood? **(One Sentence)**
2. What are the characteristics of Late Childhood. **(maximum 50 words)**
3. Discuss about the speech improvement and emotional development during late childhood years
(maximum 250 words)
4. Explain about the characteristics and developmental tasks of adolescent years **(maximum 800 words)**

Semester IV

Core VIII

Maternal And Child Nutrition

Course Outcome:

- The students will gain knowledge about the fundamentals of maternal and child nutrition.
- The students will be able to prepare diets for different stages of life.

Learning Outcome:

- The students will learn about the recommended dietary allowance and principles of balanced diet.
- The students will have an insight about nutritional requirements during infancy, preschool and school going age.
- The students will be able to understand about the nutrition requirement during adolescence and nutrition for women in special conditions.
- The students will gain practical knowledge on menu planning for different stages of women and children.

UnitI:MenuPlanning

- Explanation of terms related to menu planning (health, nutrient requirement, dietary standards, dietary reference intake, RDA, adequate intake, Estimated Average Requirement), determinants of food choice
- Food Guide- Food pyramid, my plate, mediterranean diet.
- Balanced Diet- Meaning, principles of planning balanced diet, steps involved in planning a diet.

UnitII: Nutrition in Infancy, Preschool and School Going Age

- Nutrition during Infancy- Introduction, growth and development during infancy, nutritional requirements, food requirements, breast feeding, weaning and artificial feeding.
- Nutrition in Preschool- Introduction, nutritional requirements, food requirement, factors affecting nutritional status, nutritional related problems and feeding programs for pre-school children.
- Nutrition in School Going Age- Introduction, nutritional requirement, food requirement, nutritional problems of school children, packed lunches, and school lunch program.

UnitIII: Nutrition in Adolescents and Women in Special Conditions:

- Nutrition in Adolescence- Introduction, nutritional requirements, food requirement, nutritional problems, nutritional program for the adolescents
- Nutrition during Pregnancy- Introduction, physiological changes

during pregnancy, nutritional requirement, food requirement, general dietary problems.

- Nutrition during Lactation-

Introduction, role of hormones during lactation, nutritional requirements and dietary guidelines for lactating women.

Unit-IV: Practical

- Plan and prepare one day menu, calculate calorie, protein, and fat for the following age groups: infant, children and adolescent.
- Plan a one-day menu for pregnant/lactating woman and calculate calorie, protein, calcium, and iron.
- Plan and prepare one set of packed lunch for schoolgoing children (vegetarian/non-vegetarian).
- Develop and prepare one weaning food mix from local available foods.

TextBooks:

- ✓ *Srilakshmi.B;Dietetics,NewAgeInternational(P)LimitedPublishers.*
- ✓ *MahtabS.Bamji,PrasadRao,N.VinodiniReddy;TextbookofHumanNutrition,OxfordandIBH Publishing Co. Pvt. Ltd.*
- ✓ *Begum.M.R,A TextbookofFood,Nutrition &Dietetics,Sterling publicationsPvt.Ltd.*
- ✓ *AdvancedTextbookonFoodandNutritionVolume1and2byDr.MSwaminathan,TheBangalorePress.*

ReferenceBooks:

- ✓ *SethV and Singh K.Diet Planning through theLifeCycle: Part 1and 2, Elite publishing.*
- ✓ *NutrientRequirementandRecommendDietaryAllowancesforIndiansbyIndianCounc
ilofMedicalResearch,NationalInstituteofnutrition,Hyderabad.*
- ✓ *Chada,R.andMathur,T.,Nutrition – ALifeCycleApproach, TheOrientBlackswan.*
- ✓ *MallickP.,TextbookofHomeScience,KalyaniPublishers,Chennai.*

E-Resources:

- ✓ <http://www.nin.res.in>
- ✓ <http://www.ods.od.nin.gov>
- ✓ <http://egyankosh.ac.in>
- ✓ <http://ecourses.icar.gov.in>

ModelQuestions:

1. Mentionthecalorierecommendationforapregnantwoman.**(Oneword/sentence)**
2. Definebalanceddiet. **(Maximum 50words)**
3. Writedownthenutritionalproblemsencounteredbyschool-
goingchildren.**(Maximum250words)**
4. Definemealplanning.Discussaboutthefactorstobeconsideredformealplanning.
(Maximum 800words)

CoreIX Human Physiology

Course Outcome:

- The students will understand the structure and function of different organ systems of the body.
- The students will be able to get practical knowledge in human physiology.

Learning Outcome:

- The students will be able to understand the physiology of cell, blood, and heart.
- The students will gain knowledge on the structure and functions of digestive, excretory and reproductive system
- The students will be able to understand the structure and functions of nervous, respiratory, and endocrine system
- The students will be able to get practical experience on human physiology.

Unit I: Cell and Blood Circulation

- Human Cell - Structure and functions of cell organelles, cell division.
- Blood -
Composition, structure and functions of RBC, WBC, blood platelets, blood coagulation, blood groups and Rh factor.
- Heart - Structure and function of heart, cardiac cycle, blood pressure.

Unit II: Digestive, Excretory and Reproductive Systems

- Digestive System -
Structure and functions of different parts of digestive system and accessory glands (liver, pancreas, and gallbladder).
- Excretory System - Structure and functions of Urinary system and mechanism of urine formation.
- Reproductive System - Structure and functions of reproductive system (male and female), physiology of menstrual cycle.

Unit III: Nervous, Respiratory and Endocrine Systems

- The Nervous System - Structure and function of brain, sympathetic and parasympathetic nervous system.
- The Respiratory System -

Structure and functions of lungs, mechanism of respiration, external and internal respiration and vital capacity.

- The Endocrine System - The location and functions of various endocrine glands – Pituitary, Thyroid, Parathyroid, Adrenal, Islets of Langerhans and Gonads.

Unit IV: Practical

- Prepare posters (any two) showing the organs and functions of human system. (Digestive/Reproductive/ Respiratory/Endocrine).
- Record blood pressure of five persons by using sphygmomanometer.
- Measure and record pulse rate, oxygen level and body temperature of five persons using oximeter and thermometer.
- Prepare any one model of (Cell/Digestive system/Circulatory systems/Respiratory system/Renal system/ Reproductive system/Skin).

Text Books:

- ✓ C.C. Chatterjee's. *Human Physiology revised (Vol-II). 11th colored edition.*
- ✓ Evelyn Pearce Publisher: JAYPEE BROTHERS.
- ✓ RS Wind wood, JL Smith (1985). *Sears Anatomy and Physiology for Nurses.* Jaypee Publishers.
- ✓ PR. Asha Latha & G Deepa. *Text Book of Anatomy & Physiology.*

Reference Books:

- ✓ *Ganong WF. Review of Medical Physiology, 21st ed McGraw Hill.*
- ✓ *Yash Pal Bedi. A Handbook of social and preventive medicine, Atma Ram and Sons.*
- ✓ *J.E. Park and K. Park. Park's textbook of preventive and Social Medicine, 20th edition. M/s Banarsi Das, Jabalpur.*
- ✓ *Ross and Wilson. Foundation of Anatomy and physiology, medical division of Longman Group Ltd.*

E-Resources:

- ✓ <http://ecourseonlinejastre-nes.in>.
- ✓ <http://capenindia.org>.
- ✓ <http://www.nutrition.gov>.
- ✓ <http://www.fao.org>

Model Questions:

1. Which cell organelle is known as the power house of cell? **(One word)**
2. Name the hormones secreted by pituitary gland. **(Maximum 50 words)**
3. Write short note on White Blood Corpuscles. **(Maximum 250 words)**
4. Explain structure and functions of lungs. Elaborate mechanism of external and internal respiration. **(Maximum 800 words)**

Course Outcome:

- Students will acquire a comprehensive understanding on clothing and its dimensions.
- Students will learn the fundamentals on fashion and its application in textile industry.

Learning Outcome:

- The students will be aware about the origin, functions, and importance of clothing.
- The students will learn about the selection, use of clothing and evaluation of ready-made garments.
- The students will get advanced knowledge on fashion and role of a fashion designer.
- The students will understand the aesthetics in dress and will gain practical knowledge in it.

Unit I: Importance of clothing:

- Clothing: Meaning, history, importance, functions of clothing: Protection and comfort, Identity, status, and prestige, ornamental and aesthetic, sociability and conformity, self-expression, and actualization function.
- Clothing for Different Activities - Sports and athletic activities, formal events and celebrations, casual outings and everyday wear, work environments, outdoor and adventure activities, gym and fitness workouts, formal education settings, entertainment and performance.
- Theories of Origin of Clothing –
Modesty theory, immodesty theory, adornment theory, protection theory, new advances in clothing: Water-repellent clothing, antibacterial clothing, wrinkle-free clothing, clothing with protection against UV radiation, concept and advantages.

Unit II: Selection of Clothing:

- Selection of clothing according to body build, age group (infant, toddler, teenager, adolescent, and old age), Selection and evaluation of ready-made garments (design, fit, workmanship, price, comfort, care, maintenance), use of colors in clothing.

- Factors Influencing Buying of Ready-made Garment- Size, suitability, durability, aesthetic appeal, occupation, labels (basic information and care labels), brand, socio economic-conditions, location, climate.
- Types of Design and Components in Garments - Structural and applied design, components of garments (sleeves, necklines, collars, pockets).

Unit III: Fashion Design

- Definition and origin of fashion in India, factors favoring and retarding fashion.
- Fashion cycle, classic fashion, and fashion fad, theories of fashion: trickle-down, trickle up, trickle across, role of a fashion designer.
- Leading fashion design centers in India NIFT, NID, SID, NIIFT.

Unit-IV: Practical

- Flat sketching of sleeves and necklines.
- Flat sketching of collars and pockets.
- Preparation of an album of garment feature collection of famous designers.
- Prepare a catalogue of different garment labels available in market.

Text Books:

- ✓ *Practical clothing construction-Part II* by Mary Mathews. Cosmic press, Madras.
- ✓ *The Complete Book of Fashion Design* by Tata S.L., Edwards M.S. Harper and Row Publications, New York.
- ✓ *Fashion Design* by Gayatri Biswal & Chandrashree Lenka, New Delhi.

Reference Books:

- ✓ *Brown, Patty, Rice J., 1998, Ready to Wear Apparel Analysis.* Prentice Hall.
- ✓ *Individuality in Clothing & Personal* by Marshall SG, Jackson HO, Stanley MS, Kefgen M and Specht T.

✓ *Appearance, 6th Edition, Pearson Education, USA.*

E-Resources:

- ✓ <https://egyankosh.ac.in/bitstream/123456789/61093/3/Unit-1.pdf>.
- ✓ [https://www.researchgate.net/publication/309156188 Clothing](https://www.researchgate.net/publication/309156188_Clothing).
- ✓ https://oldsite.pup.ac.in/e-content/social_sciences/home_sc/Textile%201.pdf.
- ✓ <https://www.slideshare.net/JoshReal1/clothes-to-wear-in-different-activities>.

MODEL QUESTIONS:

1. the theory says that the function of clothing is to protect from embarrassment. **(One word)**
2. Write the function of the clothing. **(Maximum 50 words)**
3. Give short note on factor affecting buying of ready-made garments. **(Maximum 250 words)**
Discuss about various fashion designing centres in India. **(Maximum 800 words)**

Semester V

Core XI Marriage and Family Studies

Course Outcome:

- Students will be able to understand about relevance of marriage in sustenance of social life.
- This course will help to bring a harmonious society and family life.

Learning Outcome:

- The students will learn about marriage, types of marriage and marriage in contemporary society.
- The students will gain an insight on marriage rituals and ceremonies in different Indian communities.
- The students will understand the family, kinship relationship and stages of family life cycle.
- The students will understand about the problems of family.

Unit I: Marriage as an Institution:

- Meaning, definitions, functions of marriage and importance of marriage.
- Types of marriages-Monogamy, polygamy, exogamy, endogamy, polyandry, polygyny.
- Marriage in contemporary society—Arranged marriage, free-choice marriage, inter-caste marriage, inter-religion marriage.

Unit II: Marriage Rituals and Ceremonies:

- Significance of marriage rituals and ceremonies among various Indian communities: Hindus, Muslims, and Christians community.
- Adjustments in marriage-Sexual, financial, within-in-laws family and among working couples.
- Changes in marriage system in India

UnitIII:FamilySystem

- Meaning,definition,importance,characteristicsoffamily
- Functionsoffamily(TraditionalandModern)
- FamilyLifeCycle:meaning,importanceandstagesoffamilylifecycle.
- Family-in-Transition–Merits anddemerits,contemporaryfamily typesprevalentinInd

UnitIV: ProblemsOfFamilyLife:

- Prevailing Family Problems- Prolonged sickness/illness, accidents, widowhood,unemployment,economicdistress/poverty,brokenfamily,familywithdi sablesandsuicideinthefamily.
- MaritalProblems-Maritaldisharmony andconflict,separationanddivorce, singleparenthood,lossospouse.
- Counselingandotherstrategiestoovercomethefamily andmaritalproblem

TextBooks:

- ✓ *BhushanV.And Sachadeva D.R.–Introductionto Sociology;Kitabmahal distributors.*
- ✓ *BhushanV.,Sachdeva D.R. –FundamentalsofSociology;Pearson.*
- ✓ *DuvalIE.M.–MillerB.C.;MarriageandFamily Development;Harpercolling*
- ✓ *GoodeW.J.–The Family;Pearson.*
- ✓ *Kapadia–MarriageandFamilyinIndia*

ReferenceBooks:

- ✓ *IndiaSocialProblems–MadanG.R.*
- ✓ *IndianSocietyandSocialInstitutions–MukhiH.R.Surjeet.*
- ✓ *IndianSocialProblems. Vol.Iand II–G.R.Madan.*
- ✓ *Mukhr.,;Indian SocietyandSocial Institutions;SBDEnterprises.*

E Resources:

- ✓ <http://ndl.ethernet.edu.et/bitstream/>
- ✓ <https://www.researchgate.net/profile/Brent-Miller-6/publication/>
- ✓ <https://onlinelibrary.wiley.com/journal/17413737>

ModelQuestions:

1. DefineMarriage?(**Answerwithonesentence**)
2. Outlinethe importanceof marriage?(**Answermaximum50 words**)
3. Discussabouttypes ofmarriage?(**Answer maximum 250words**)

4. What is marital problem and explain about different marital problems? (**Answer maximum 800words**)

Course Outcome:

- The students will be enabled to understand the principles of household economics.
- The students will learn the importance and scope of consumer education and consumer protection measures.

Learning Outcome:

- The students will gain knowledge about household income and expenditure.
- The students will be educated on consumer education and problems.
- The students will learn the importance of consumer protection.
- The students will gain practical knowledge on banking system and consumer organizations.

Unit I: Household Income and Expenditure:

- Maintaining household accounts, budget: meaning, significance, types, items of budget and steps in formulating budget.
- Factors influencing expenditure, family savings: concept, importance, objectives, types of savings and institutions of savings.
- National income (GDP, NDP, GNP, NNP) and per capita income: meaning and significance in national growth.

Unit-II: Consumer Education and Problems

- Definition and role of consumers, consumer awareness and education - Concept, Objectives, Importance
- Consumer rights and responsibilities
- Consumer problems - Products and service-related problems and solution

Unit-III: Consumer Protection

- Basic legislative framework for consumer protection in India, consumer protection act 1986, alternative redressal mechanisms, mediation centers.
- Consumer organizations – role and functions
- Quality marks (Handloom Mark, AGMARK, FPO, FSSAI, BIS, ECOMARK, Hall Mark), standardization and quality control measures.

Unit IV: Practical

- Conduct a case study of a banker, post office to understand their services and products
- Learn to fill different bank forms for depositing money – fixed deposit or recurring deposit
- Preparing labels for any packaged food product
- Evaluate the packaging of any packaged food item

Textbooks:

- ✓ *Khanna S.R., Hanspal Kapoor S. and Awasthi H.K., Consumer affairs, Universities Press India Pvt Ltd.*
- ✓ *Nickell, P., and Dorsey, J. M., Management in family living, CBS Publishers, and Distributors*
- ✓ *Seetharaman P., Batra S. and Mehra, Family Resource Management, CBS Publishers and Distributors, New Delhi.*

Reference Books:

- ✓ *Sawhney H. K. and Mital, Family Finance and Consumer studies, Elite publishing House Pvt Ltd.*
- ✓ *Mishra N., Personal Finance and Consumer Studies, Kitab Mahal*
- ✓ *Seetharaman P. and Sethi M., Consumerism, Strength and Tactics, CBS Publisher, New Delhi*
- ✓ *Verges, Ogale and Srinivasan, Home Management.*

E-Resources:

- ✓ <http://ecoursesonline.iasri.res.in/course/view.php?id=661>.
- ✓ <https://www.vnmkv.ac.in/Content/Home/pdf/student-academic/RMCS-233.pdf>.
- ✓ <https://search.worldcat.org/title/Family-finance-and-consumer-studies/oclc/254529310>.
- ✓ <https://www.cusrinagar.edu.in/FolderManager/Syllabus/Personal%20PERSONALFINANCE%20CONSUMERSTUDIES.pdf>.

Model Questions:

1. The income and expenditure plan in a family is known as-----
(One word).
2. Write the meaning and concept of per capita income. (Maximum 50 words).
3. Discuss about the rights and responsibilities of a consumer.
(Maximum 250 words)
4. Describe the role and functions of different consumer organizations.
(Maximum 800 words)

Core XIII Community Health and Nutrition

Course Outcome:

- The course will enable the students to know about the concept of community health and nutrition and the nutritional problems.
- The students will learn about the assessment

of nutritional status and gain experience on the planning of nutrition and health education programs.

Learning Outcome:

- The students will understand the definition, concept and scope of community health and nutrition.
- The students will gain an insight into nutritional problems and their implications.
- The students will learn about the objectives and methods of assessment of nutritional status.
- The students will gain experience about diet planning of Kwashiorkor and Marasmic child and planning and implementation of nutrition education programs.

Unit I: Nutrition Education and Assessment of Nutritional Status

- Definition and concept of community health and nutrition, concept of nutrition education, methods and teaching aids used in nutrition education.
- Meaning, importance and objective of assessment of nutritional status
- Methods of Assessment: Direct (Anthropometry, Biochemical estimation, Clinical examination, and Biophysical examination) and Indirect (Diet survey, Vital Statistics)

Unit II: Nutritional problem and their implications

- Protein Energy Malnutrition -
Introduction, prevalence, classification, etiology, clinical features, nutritional requirement, treatment, and prevention.
- Iron Deficiency Anemia (IDA), and Iodine Deficiency Disease (IDD) –
Types, prevalence, etiology, symptoms, prevention/treatment and prophylaxis programs.
- Vitamin A Deficiency (VAD) and Fluorosis - Etiology, prevalence, symptoms, prevention/treatment and prophylaxis programs.

UnitIII: Nutritional Policies and Programs and Agencies to combat malnutrition

- Nutrition related Policies, Programs: National Nutrition Policy, ICDS, PDS, TPDS, Antyodaya Anna Yojana, National Food for Work Program
- National Agencies: ICAR, ICMR, NIN, NNMB
- International Agencies: WHO, UNICEF, FAO, CARE.

UnitIV: Practical

- Assessment of nutritional status of five children (1-5 years) by anthropometric measurements.
- Interpretation of data based on BMI of ten numbers of adolescents (boys/girls).
- Plan, prepare and calculate diet for kwashiorkor child/marasmus child/anemic adolescent girls.
- Visit to organizations implementing nutrition programs for children and women in your locality and prepare a report.

TextBooks:

- ✓ *Park J.E. and Park K. Textbook of preventive and social medicine, Publications.*
- ✓ *Park K. Park's Textbook of Preventive and Social Medicine M/S Banarasi Das Bhanot Publisher, Jabalpur, India.*
- ✓ *B. Srilakshmi, Nutrition Science New Age International (CP) Ltd, New Delhi.*
- ✓ *Bamji M. S. Krishnaswamy K. and Brahman G. N. C. (Eds), Textbook of Human Nutrition, Oxford and IBH*

Publishing Co Pvt. Ltd. New Delhi.

Reference Books:

- ✓ *Wadhwa A and Sharma S Nutrition in community – A Text Book, Elite Publishing House Pvt. Ltd New Delhi.*
- ✓ *Shukla, P. K., Nutritional problems of India, Prentice-Hall of India New Delhi.*
- ✓ *Biswal, G. and Lenka, C. Textbook of Food, Nutrition and Health.*
- ✓ *ICMR Dietary Guideline for Indian – A Manual National Institute of Nutrition, Indian Council of Medical Research Hyderabad.*
- ✓ *Jelliffe DB, Jelliffe ERP, Zarfar, A and Neumann CG, Community Nutritional Assessment with special reference to less technically developed countries, Oxford University Press Oxford.*

E -Resources:

- ✓ <http://www.who.int>

- ✓ <http://www.fao.org>
- ✓ <http://www.nin.res.in>
- ✓ <http://www.nutrition.gov>

Model Questions:

1. Write the full form of PEM. **(One word/sentence)**
2. Mention any two objectives of nutrition education. **(Maximum 50 words)**
3. Write short note on vital statistics. **(Maximum 250 words)**
4. Discuss about the etiology, symptoms, and nutritional management of kwashiorkor.
(Maximum 800 words)

Core XIV

Semester VI

Research Methodology

Course Outcome:

- The students will be oriented towards the importance and need of research in Home Science
- The students will be able to identify various issues in Home Science and will carry out research in the pertinent areas for societal development.

Learning Outcome:

- The students will become aware of meaning, purpose and types of research.
- The students will learn about various types of research designs.
- The students will gain an insight on sampling techniques.
- The students will be educated on research process.

Unit I: Research Methodology

- Research - Meaning, objectives and significance
- Types of research -
Descriptive Vs. Analytical, Applied Vs. Fundamental, Qualitative Vs. Quantitative, Conceptual Vs.

Empirical.

- Criteria of a good research.

Unit-II Research Design

- Research design - Meaning, concept, need
- Features of a good research design.
- Types of research design - Exploratory, Descriptive, Experimental

Unit-III Sampling Techniques and Data Collection:

- Sampling - Meaning and Types (Probability and Non-Probability Sampling)
- Collection of data - Primary and secondary data.
- Tools and techniques of data collection - observation, interview schedule, questionnaire, case study, Focus Group Discussion (FDG).

Unit IV: The Research Process

- Formulating the problem, formulation of objectives and hypothesis, preparing the research design, review of literature.
- Data analysis, measures of central tendency - Mean, median and mode.
- Data interpretation, bibliography and report writing.

Text Books:

- ✓ *Kothari C.R. and Garg G., Research Methodology: Methods and Techniques, New Age International Pvt. Ltd, New Delhi.*

- ✓ Bajpai S.R., *Methods of Social Survey and Research*, Kitab Ghar.
- ✓ Swain A.K.P.C., *A text book of Research Methodology*.

Reference Books:

- ✓ Kumar R., *Research Methodology, A step by step Guide for Beginners*, Sage Publication, New Delh
- ✓ Kelinger F.N. and Lee, H.B., *Foundations of Behavioral Research*, Harcourt College Publishers.
- ✓ Best J.W. and Kahn J.V., *Research in Education*.

E-Resources:

- ✓ <https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=8x0nJkh/R0vHkX1U70Z/CQ>
 - ✓ <https://ccsuniversity.ac.in/bridge-library/pdf/Research-Methodology-CR-Kothari.pdf>.
 - ✓ <https://www.euacademic.org/BookUpload/9.pdf>.
 - ✓ <https://mfs.mkcl.org/images/ebook/Fundamental%20of%20Research%20Methodology%20and%20Statistics%20by%20Yogesh%20Kumar%20Singh.pdf>.

Model Questions:

1. The measures of central tendency are mean, median and -----
(One word).
2. Write down the steps in research process. (Maximum 50 words).
3. Enumerate the features of a good research design. (Maximum 250 words).

4. What is sampling? Discuss about the types of sampling. (Maximum 800 words).

Core XV

Housing and Interior Design

Course Outcome:

- The students will gain knowledge in House Planning for different income levels
- The students will gain insight on elements and principles of design and their household application

Learning Outcome:

- The students will gain understanding of the basic principles of housing and house planning.
- The students will get familiarized with the elements of interior design
- The students will be educated on principles of interior design.
- The students will acquire practical knowledge of House planning for different income groups

Unit I: Housing and Principles of House Planning:

- Meaning, Importance, Types of Housing and Housing terms; Significance, functions, and types of houses; Selection of site and Factors influencing it- Location, Size and Shape, physical features, soil condition, sanitary condition, practical convenience
- Principles of House Planning I- Aspect, Privacy, Grouping, Roominess, Flexibility; Principles of

House Planning II – Circulation, Sanitation, Furniture Requirements, Prospect, Economy, Elegance

- Building plans for Family Living – Importance and advantages of planning space, Meaning and Concepts of building plans, Site plan, Floor plan, Elevation, Cross sectional view, Perspective view, Land Scape plan

Unit II: Elements of Design:

- Meaning and Concept of Interior design; Aims of Interior Design - Beauty, Expressiveness and Functionalism
- Elements of Design -
Meaning, importance, characteristics of each element and their use in designing -
Line, shape, form, space, size, texture and color
- Types of Motifs and arrangement - Motif development and fundamental steps in designing process

Unit III: Principles of Design

- Meaning, nature, types, and significance of design
- Principles of Design - Balance, rhythm, emphasis, proportion, harmony
- Flower Arrangement - History, meaning, types (line, mass, line-mass) and forms
(circular, crescent, vertical, horizontal, miniature), tools and equipment required for flower arrangement

Unit IV: Practical

- Draw floor plans of houses for Low/ Middle/ High Income Groups
- Draw different kitchen plans (L-shape, U-shape, Single wall)
- Make a flower arrangement using flowers and foliage (Circular, Crescent, Vertical, Horizontal, Miniature)
- Prepare a poster of different color combinations (Primary, Secondary and Tertiary)

Text Books:

- ✓ *Vergese, Ogale and Srinivasan, Home Management*

- ✓ *Mallick P., Textbook of Home Science*

Reference Books:

- ✓ *Parvez R., Housing and Space Management, Disha International Publishing House*
- ✓ *Renuka S. and Reddy M., Housing and Space Management, ICAR, New Delhi*

E-Resources:

- ✓ <http://ecoursesonline.iasri.res.in/course/view.php?id=653>.

- ✓ <http://ecoursesonline.iasri.res.in/course/view.php?id=213>.
- ✓ <https://www.g-wonlinetextbooks.com/housing-interior-design-2018/>.
- ✓ <https://resources.finalsite.net/images/v1683025189/stmak12mnus/ti8etxsfh1u6ru1jlqu/HousingandInteriorDesign.pdf>.

Model Questions:

1. The view of outside features of a house from its windows, door or balcony is known as -----
-----.(One word/sentence).
2. Write the significance and types of houses. **(maximum 50 words)**.
3. Discuss about the concept and aim of interior design. **(maximum 250 word)**
4. Describe the principles of design in detail. **(maximum 800 words)**

Semester-VII

Core XVI

Therapeutic Nutrition

Course Outcome:

- The students will gain knowledge on therapeutic nutrition.
- The students will get aware about nutritional related diseases.

Learning Outcome:

- The students will gain basic concept of diet therapy and types of therapeutic diets.
- The students will be able to learn the nutritional management of various diseases like diabetes mellitus, cardiovascular diseases, infections, and fever.
- The students will be able to learn the nutritional management of obesity, underweight, gastro-intestinal and liver diseases.
- The students will gain experience about the planning of diet in disease conditions.

UnitI:DietTherapy

- DietTherapy-
Meaningofdiettherapy,meaningandpurposeoftherapeuticdiet,factorstobeconsideredin modification of normal diet intotherapeuticdiet.
- TypesofTherapeuticDiet-Clearfluid,fullfluid,soft,regularnormaldiet.
- Dietarysupplements-Meaning,significance andtypesofdietarysupplements.

UnitII: DietinFever,CardiovascularDiseaseandDiabetesMellitus

- DietinFebrileCondition(TBandTyphoid)-Causes,types,andgeneraldietaryconsiderations.
- DietinCardiovascularDisease-
Prevalence,clinicaleffects,riskfactors,roleoffatinthedevelopmentof atherosclerosis, dietary management.
- Hypertension-Meaning,causes,types,symptoms,principlesofdiet,dietarymanagement.
- DietinDiabetesMellitus-
Prevalence,types,WHOetiologicalclassification,causes,symptoms,diagnosis,complications, and dietary management.

UnitIII:DietinObesityandUnderweight,GastrointestinalDiseasesandDiseasesofliver

- DietinObesity-
Meaning,causes,assessment,types,treatment,complications,dietarymanagement,weightmanagementguidelines.
- DietinGastrointestinal Diseases-PepticUlcer:
Meaning,causes,symptomsandclinicalfindings,dietarymanagement

Constipation: Meaning, types, dietary considerations.

- Diet in Disease of Liver- Infective Hepatitis: Meaning, symptoms, dietary management.

Cirrhosis of liver: Meaning, causes, symptoms, clinical findings and dietary management.

Unit IV: Practical

- Prepare therapeutic diets- clear fluid, full fluid, soft diet.
- Plan a day's menu, prepare, and serve for diabetes mellitus and hypertension.
- Plan a day's menu, prepare, and serve for obesity and peptic ulcer.
- Plan a day's menu, prepare, and serve for infective hepatitis and cirrhosis.

Text Books:

- ✓ *Shubhangini.A.Joshi; Nutrition and Dietetics, McGraw Hill Education (India) Private Limited.*
- ✓ *Srilakshmi.B; Dietetics, New Age International (p) Limited, publishers.*
- ✓ *Swaminathan.M; Advanced Text- Book on Food and Nutrition, Volume 1 and 2, The Bangalore reprinting and publishing co., LTD.*
- ✓ *Begum.M.R, A Textbook of Food, Nutrition & Dietetics, Sterling publications Pvt. Ltd.*

Reference Books:

- ✓ *Khanna, K. Gupta S, Seth R, Passi, S.J. Mahan, R. Puri, Textbook of Nutrition and Dietetics Phoenix Publishing House Pvt Ltd.*
- ✓ *Mahan LK and Escott Stump SK Krause's food & Nutrition Therapy, Saunders Elsevier.*
- ✓ *Lenka, C. Guidelines for Planning Therapeutic Diets. Aki Nik Publications.*
- ✓ *ICMR, Nutritive value of Indian Foods. National Institute of Nutrition, Indian Council of Medical Research Hyderabad*
- ✓ *Michael.J. Gibney et al; clinical nutrition Blackwell science*

E –Resources

- ✓ <http://www.who.int>
- ✓ <http://www.nutrition.gov>
- ✓ <http://egyankosh.ac.in>

✓ <http://ecourses.icar.gov.in>

Model Questions:

1. Define Dietary Supplements of therapeutic diet. **(One word/sentence)**
2. What do you mean by hypertension? **(maximum 50 words)**
3. Give the (WHO) classification of diabetes mellitus. **(maximum 250 words)**
4. Describe the causes, symptoms, and dietary management of liver cirrhosis. **(Maximum 800 words)**

Core XVII Early Childhood Care and Education

Course Outcome:

- Students will be able to focus on career opportunities in early childhood care and education.
- Students will understand the relevance of early childhood care for constructive future citizen.

Learning Outcome

- The students will be able to understand the importance of early childhood years and programs for early childhood development.
- The students will learn about the contributions of educational philosophers towards ECCE.
- The students will gain knowledge on physical setup, curriculum and personnel required for preschool.
- The students will be able to gain practical experience on preschool management.

Unit I: Early Childhood Care

- Early Childhood Care – Meaning, importance and scope of early childhood care in India.
- Child Rearing Practices –
Meaning, significance, aspects and factors affecting child rearing practices.
- Children's Environment – Meaning, importance and role of parents, family and community in creating stimulating environment for children.

Unit II: Early Childhood Care and Education in India:

- Meaning, significance and objectives of early childhood care and education in India.
- Contributions of educational philosophers- Global and Indian perspective: views

of educationists and philosophers: Pestalozzi, John Dewey and Maria Montessori, Sri Aurobindo, Rabindra Nath Tagore, Mahatma Gandhi.

- Provisions and Policies for Child Care and Development in India-Constitutional provisions, legislative provisions and national policy for children-2013, new education policy-2020.

Unit III: Physical Setup of Preschool:

- Pre-school building, essential of good building, plan for a pre-school building, and selection of play equipment.
- Curriculum for pre-school-Types, factors, determining, the effectiveness of the curriculum.
- Pre-school staff, personnel, pre-school records, and reports.

Unit IV: Practical

- Visit to any pre-school and prepare a report on physical set-up, curriculum and developmental activities.
- Prepare low-cost play equipment suitable for preschool.
- Prepare powerpoint presentation on any one preschool philosopher.
- Conduct a case study on child-rearing practices.

Text Books:

- ✓ *Development, care, and education of preschool children by Aparajita Chowdhury and Rita Chowdhury by Discovery Publication House Pvt. Ltd, New Delhi.*
- ✓ *Early childhood Care and Education, Mohanty, J and Mohanty, B, Deep & Deep publication, New Delhi.*
- ✓ *A text book on child development, Raajmahal P. Devadas, N. Jaya, published by Rajilberi for Macmillan India. Ltd.*
- ✓ *Kaul, V. Early childhood education program. National Council of Educational Research and Training, New Delhi.*

Reference Books:

- ✓ *Agarwal, S. P. and Usmani, M. M. Children's education in India: from Vedic times to twenty-first century New Delhi: Shipra.*

- ✓ *Canning, N. Play, and practice in the early years: Foundation stage. New Delhi: Sage.*
- ✓ *Durlak, J. A. School-based prevention programs for children and adolescents. N. Y.: Sage.*
- ✓ *Fleer, M. Early learning and development: Cultural-historical concepts in play. Cambridge: Cambridge University Press.*

E-Resources:

- ✓ https://wcd.nic.in/sites/default/files/national_ecce_curr_framework_final
- ✓ https://www.education.gov.in/shikshakparv/docs/background_note_ECCE.pdf
- ✓ https://ddceutkal.ac.in/Syllabus/MA_Education/Paper_19.pdf

Model Questions:

1. Define Early Childhood care? **(Answer in one Sentence)**
2. Outline the significance of child rearing practices? **(Answer in maximum 50 words)**
3. Discuss about the contribution of Indian Philosophers on Early childhood care education?

(Answer in maximum 250 words)

4. Explain about the provisions and policies for early childhood care education?
(Answer maximum 800 words)

Core XVIII Household Economics

Course Outcome:

- The students will be educated on concepts and importance of Household Economics.
- The students will learn about the national economic environment and constraints of economic growth.

Learning Outcome:

- The students will gain an insight on household economics.
- The students will learn about the economic theory and environment.
- The students will be oriented on standard of living, money, and banking.
- The students will understand the Indian economic environment and constraints of economic growth.

Unit I: Introduction to Household Economics:

- Meaning, concept and scope of household economics.
- Human wants – Definition, characteristics and classification.
- Utility and Demand - Law of diminishing marginal utility, law of equi-

marginal utility, law of demand, elasticity of demand and Engel's law of consumption.

Unit II: Standard of Living, Money and Banking:

- Standard of Living- Significance, standard of living, factors determining standard of living, causes of low standard of living.
- Money- Meaning, functions and types of money.
- Banking- Concept, functions and types (central and commercial banks).

Unit III: National Economic Environment:

- Constraints of Economic Growth- population growth, income distribution, poverty

unemployment,migration,foodsecurity

- ChangingNatureofBusinessWorld-E-CommerceandE-Business
- Developmental Programmes of Government of India- Pradhan MantriJan DhanYojana, PrimeMinister’sEmploymentGenerationProgramme,StartUpIndiaScheme:Objectives andachievement.

Unit IV: Practical

1. Prepareareportonadvantagesanddisadvantages ofpurchasing clothingitemsthroughonlineshopping (Price,Product quality,Size, Return facility,Durability)
2. PrepareaposterbasedonEngel’sLawofConsumption
3. Prepareachart on key categoriesof PublicExpenditure
4. Prepareonealbumonnewspaper cuttings onconstraintsofeconomicgrowth

Textbooks:

- ✓ *Shukul M. and Gandotra V., Home Management and Public Finance, Dominant Publishers, andDistributors*
- ✓ *AhujaH.L.,ModernMicroEconomics.SultanChand&sons*
- ✓ *DhingraI.C.andGargV.K., IntroductoryEconomicTheory.SultanChand&Sons*
- ✓ *MishraandPuri,Recentedition,IndianEconomy,HimalayaPublishing House.*

ReferenceBooks:

- ✓ *SundaramK.P.M.,IntroductiontoEconomics.RatanPrakashan*
- ✓ *MithaniD.M.,2010NewEdition,Macro-Economics.HimalayaPublishing House*

E-Resources:

- ✓ <http://ecoursesonline.iasri.res.in/course/view.php?id=661>
- ✓ <http://people.soc.cornell.edu/swedberg/2011%20The%20Household%20Economy.pdf>
- ✓ <https://www.wider.unu.edu/sites/default/files/wp159.pdf>.

ModelQuestions:

1. Human ----- areunlimited. **(Oneword)**.

2. Write the law of marginal utility. **(Maximum 50 words)**

3. Discuss about the meaning, functions, and types of money. **(Maximum 250 word)**

4. Describe the constraints of economic growth. **(Maximum 800 words)**

Core XIX

Rural Development

Course Outcome:

- Students will develop understanding on the importance of rural development.
- Students will understand the functions of rural institutions.

Learning Outcome:

- Understand the concept of rural sociology.
- Learn about the role of rural institutions.
- Gain knowledge on planning of the rural extension programmes.
- Students will gain practical experience on rural environment.

Unit I: Introduction to Rural Sociology

- Rural Sociology – Meaning, scope, importance
- Characteristics of rural society, rural and urban difference
- Rural Social Groups- Primary and secondary, reference groups, cultural interest groups, temporary and permanent groups

Unit II: Rural Institutions:

- Informal Institutions- Family, class, caste
- Formal Rural Institutions- Village school, gram panchayat, service co-operatives, mahila mandal, youth clubs
- Village Leaders- Identification of leaders, leadership phenomena, development of leaders

UnitIII:ProgrammePlanningandRuralEnvironment:

- Meaning,ProgrammePlanningProcess—Collectfacts,analyzesituation,identifyproblems, decide on the objectives, develop plan of work, execute plan, evaluation ofprogress.
- Importanceofextensionprogrammeandcharacteristicsofagood programme.
- Environment—Natural,artificial,social,psycho-socialenvironment.

Unit-IV: Practical

1. Prepareaflipchart/pamphlet/leaflet onruralsurroundings.
2. Prepareascriptfor afolk song/folk play aboutrural environment.
3. Visitto aco-operative societyand prepareareport.
4. Prepareanoutlineofan awarenessprogramme on health/social/gender.

TextBooks:

- ✓ *S.VSupe,AnIntroductiontoExtensionEducation.*
- ✓ *O.PDahama,O.PBhatnagar,EducationandCommunicationforDevelopment.*

ReferenceBooks:

- ✓ *G.LRay,Extension CommunicationandManagement.*
- ✓ *C.SatapathyandSabitaMishra,ExtensionTechniquesforRuralManagement.*
- ✓ *A.Reddy,Extensioneducation*

EResources:

- ✓ <https://egyanagar.osou.ac.in/prog>
- ✓ <https://www.india.gov.in/download-e-book-ministry-rural-development>
- ✓ <https://www.ruraluniv.ac.in/facilities?content=eresourc>

ModelQuestions:

1. DefineRuralSociology?(**onesentence**)
2. Writetheimportanceof Ruralsociology? (**Maximum 50words**)
3. Explainaboutthe roleofvillageschool?(**Maximum250words**)
4. Discussaboutthecharacteristicsofruralsociety? (**Maximum 800words**)

Fabric Care and Management

Course Outcome:

- Students will be able gain skill-based orientation in fabric care.
- This course will help the students to become self-reliant.

Learning Outcome:

- The students will learn about importance and types of fabric care.
- The students will know about types of equipment and reagents used in laundry process.
- The students will get an idea about techniques of fabric cleansing techniques.
- The students will gain practical knowledge on household laundry methods.

Unit I: Care of Fabrics

- Meaning, Importance, Types –
Permanent care labeling, coverage and exemptions, label permanency and placement, instructions and how labeling, testing and responsibility.
- Consumer Care Guide for Apparel – Home drying, non-machine washing, machine washable, ironing or pressing.
- Care of Fabrics – Brushing and airing, storing, drying.

Unit II: Laundry Equipment's and Reagents

- Laundry Equipment – Sink, boiler, tubs, buckets, enamel bowls and basins, spoons and containers – scrubbing brushes, scrubbing boards, beaters, suction – washer, dryers – dry-cleaning pump, ironing board, charcoal irons, electric iron, flat iron.
- Use of Cleaning Materials and Other Reagents – Ratan nut- shikakai, soaps and soap solutions, washing soda, borax, rock ammonia.

- Stains and Bleaching Agents –Types, general rules, process of stain removal of egg, grass, nailpolish,curry,ballpointinkandoxidizingbleaches,hydrogenperoxideandpotassiumpermangana e,sodium hydrosphere.

UnitIII:LaunderingMethodsandPrinciples

- MethodsofCleansing-
Applicationoffriction:(Handfriction,rubbingandscrubbing),applicationoflightpressure (Kneading andsqueezing,suction washing).
- MethodsofFinishing-Damping,ironing,pressingsteaming,mangling,calendaring.
- Laundering-Laundering ofcellulosefabrics,wool,andsilk.

UnitIV:Practical

- Prepareacatalogue/bookletonbleachingagentsusedincleaningand finishingoffabrics.
- Stainremoval(egg,grass,nailpolish,curry,ballpointink)fromclothbyusingstainremovalprocess.
- Prepareaninventoryofdifferentaundryequipments.
- Preparealistofchemicalsused forcleansingandlaunderingofcloths.

TextBooks:

- ✓ *CorbanP.B,Textiles-Fibertofabric.GreggDivision/McGrawHillBookCo,US.*
- ✓ *DurgaDeulkar,HouseholdTextiles&LaundryWork,Atma Ram&Sons,New Delhi.*
- ✓ *SusheelaDanTyagi.FundamentalsofTextilesandtheirCare,OrientBlackswanPrivateLimited.*

ReferenceBooks:

- ✓ *Joseph,M.L.Holt,RinehartandWinstonInc,Florida.*
- ✓ *VilenskyGEssentialsofTextilesbyTextileScience,CBSPublishersandDistributors,Delhi.*
- ✓ *Tortora,G.Phyllis.UnderstandingTextilesbyMcMillanmCo.USA.*
- ✓ *SekhriS.TextbookofFabricScience:Fundamentalstofinishingby(2013).PHILearning,Delhi.*
- ✓ *ManmeetSodhia,Advanced Draftingand Draping.*

E-Resources:

- ✓ <https://csauk.ac.in/wp-content/uploads/2022/08/Textile-fiber-NEW.pdf>
- ✓ <https://nios.ac.in/media/documents/srsec321newE/321-E-Lesson-27.pdf>
- ✓ <https://qphisar.ac.in/wp-content/uploads/2022/09/TEXTILE-FUNDAMENTALS.pdf>
- ✓ <https://blogmedia.testbook.com/blog/wp-content/uploads/2022/04/home-science->

ModelQuestions:

1. What is fabric care? **(One sentence)**
2. Write the importance of fabric care management? **(Maximum 50 words)**
3. Discuss about types of fabric care? **(Maximum 250 words)**
4. Discuss about different types of laundering methods and principles? **(Maximum 800 words)**

Course Outcome:

- The student will gain knowledge about food contamination and foodborne illnesses.
- The student will get insight on food laws and standards.

Learning Outcome:

- The student will learn about concept of food contamination, food toxicants and safe handling practices.
- The student will understand about different foodborne illnesses and food adulteration.
- The student will gain insight into different food laws, national and international food standards. The student will gain experience about detection of food adulterants and food safety standards used in different food products.

Unit-I: Introduction to Food Contamination and Food Safety

- Food contamination: Meaning, definition and concept.
- Food toxicants: Meaning and types
- Food safety: Meaning and safe food handling practices.

Unit-II: Food Borne Illnesses and Food Adulterations

- Foodborne illness (Salmonellosis, Staphylococcal poisoning, Perfringenes poisoning, Botulism): Agents, symptoms, and prevention.
- Food adulterants: Meaning and types
- Detection of adulterants in food stuffs

Unit-III: Food Laws and Food Standards

- General principles of food safety, voluntary standards and certification system - Bureau of Indian Standards (BIS), AGMARK.
- Food standardization and regulation agencies (National and International): Central Committee for Food Standards, International Organization for Standardization, Codex Alimentarius, Hazard Analysis Critical Control Point (HACCP).

- Food Evaluation-Meaning, methods of food evaluation (subjective and objective).

Unit-IV: Practical

1. Preparation of checklists for food safety measures for food handlers.
2. Market survey to study the different food safety standards.
3. Detection of adulterants in the following foods: Grains, dals, milk, black pepper, cinnamon, cloves, cumin seeds and honey.
4. Standardization of a food product using sensory evaluation.

Text Books:

- ✓ *Shubhangini A. Joshi; Nutrition and Dietetics, McGraw Hill Education (India) Private Limited.*
- ✓ *Srilakshmi B; Food Science, New Age International (p) Limited, publishers.*
- ✓ *Swaminathan M; Advanced Text Book on Food and Nutrition, Volume 1 and 2, The Bangalore printing and publishing co., LTD.*
- ✓ *Begum M.R, A Textbook of Food, Nutrition & Dietetics, Sterling publications Pvt. Ltd.*

Reference Books:

- ✓ *Cynthia A. Roberts. The Food Safety Information Handbook. Oryx press.*
- ✓ *Mahan L K and Escott Stump S. Krause's Food & Nutrition Therapy, Saunders Elsevier.*
- ✓ *Raday, S. Food Science and Nutrition, Oxford University Press.*
- ✓ *Gupta, V. The Food Safety and Standards Act.*

E -Resources:

- ✓ <http://www.fao.org>
- ✓ <http://www.fssai.govt.in>
- ✓ <http://www.foodsafety.odisha.nic.in>
- ✓ <http://egyankosh.ac.in>

Model Questions:

1. State any 3 foodborne illnesses. **(One sentence)**
2. Define food contamination. **(Maximum 50 words)**
3. Write short notes on staphylococcal food poisoning. **(Maximum 250 words)**
4. Define food toxicant. What are the different types of food toxicants? Mention the safe food handling practices. **(Maximum 800 words)**

Core XXII Exceptional Children

Course Outcome:

- Students will be aware about the vulnerable section of the society and develop attitudinal change.
- Students will be able to identify the talents of gifted children and focus on their talents.

Learning Outcome:

- The students will understand about the exceptional children and their classifications.
- The students will gain an in-depth knowledge on socially handicapped children, emotionally disabled children and orthopedically challenged children.
- The students will gain knowledge about children with speech defects and gifted children.
- The students will be aware of the status and situation of differently abled children and adolescents in India.

Unit I: Introduction to Exceptional Children

- Meaning, definitions, and classifications of exceptional children.
- Gifted Children: Definition, Classification, Educational methods used, Parental awareness and development competency in bringing up these children.
- Children with Sensory Deficits, Deaf and Dumb, Visually Impaired - Definition, causes, teaching methods and rehabilitation of all.

Unit-II: Physical Challenges

- Mentally Challenged Children - Definition, causes, classification, education and rehabilitation.
- Socially Handicapped Children (Juvenile delinquents) - Meaning, causes, behavioral symptoms, preventive measures taken, rehabilitation.
- Orthopedically Challenged Children - Definition, causes, treatment, and rehabilitation.

Unit III: Speech and Emotional disturbed children and Welfare Programme

- Children with Speech Defects-
Aphasic child, stammering, stuttering, articulatory defects, remedial measures, and speech therapy.
- Emotionally Disturbed Children—Common behavioral problems of children, Psychosis (Schizophrenia and Autism in children), Neurosis (Phobia, Obsession, and compulsion).
- Welfare programmes and policies for disabled children and adolescents in India.

Unit IV: Practical

- Identify physically handicapped children (at least five) and prepare a report.
- Prepare a case profile of an exceptional child (Age, Height, Weight, Physical defect, Problems, preferences, activities)
- List out the developmental tasks of a physically challenged child.
- Prepare a list of special materials and equipment required for exceptional child (Gifted/physically/emotional/sensory challenged).

Text Books:

- ✓ *Uday Shankar-Exceptional children. New Delhi: Sterling publishers.*
- ✓ *KC Panda-Exceptional Children.*
- ✓ *Mangal, S.K-Exceptional Children: An Introduction to special education. New Delhi: Prentice Hall of India.*
- ✓ *Kar, Chintamani-Exceptional Children: Their psychology and education. Sterling publishers Pvt. Ltd.*

Reference Books:

- ✓ *Hallahan, P, Daniel & Kauffman, M, James. Exceptional children; introduction to special education. Prentice-hall International (UK) Limited, London.*

- ✓ Chopra, G. *Early detection of disabilities and persons with disabilities in the community*. New Delhi: Engage Publications.
- ✓ Dhawan, M. *Education of Children with Special Needs*. New Delhi: Isha Books.

E-Resources:

- ✓ <https://niepid.nic.in/EXCEPTIONAL%20CHILDREN.pdf>.
- ✓ <https://egyankosh.ac.in/bitstream/123456789/23721/1/Unit-3.pdf>.
- ✓ https://www.sxccal.edu/wp-content/uploads/2023/08/MAEDCR33-Module-2_
- ✓ <https://www.hcpgcollege.edu.in/sites/default/files/Exceptional%20children>.
- ✓ <https://www.gadoe.org/Curriculum-Instruction-and-Teaching%20Modules/>

Model Questions:

1. Define Exceptional Child? **(Answer one sentence)**
2. What is the classification of exceptional children? **(Answer maximum 50 words)**
3. Define sensory deficit child and discuss the teaching methods? **(Answer maximum 250 words)**
4. Meaning of gifted children and discuss the classification and parental awareness and development competency in bringing up these children. **(Answer maximum 800 words)**

Core XXIII Entrepreneurship Development

Course Outcome:

- Students will be motivated to become entrepreneurs.
- Students will learn the skills of an entrepreneur.

Learning Outcome:

- Understand the concept related to entrepreneurship.

- Able to learn the characteristics of an entrepreneur.
- Gain knowledge on different resource mobilization for enterprise and SWOT analysis.
- Learn about skills to become a women entrepreneur.

Unit I: Entrepreneurship

- Definition, concept, and objective of entrepreneurship.
- Scope of entrepreneurship development in India.
- Types of enterprise – Merits and Demerits.

Unit II: The Entrepreneur

- Meaning, definition, characteristic of an entrepreneur.
- Factors Affecting Entrepreneurial Role –
Education, awareness, culture, social condition, inhabitant.
- Profile of an entrepreneur and prospective of entrepreneurial behaviour

Unit III: Women Entrepreneur

- Meaning and definition of women entrepreneur.
- Characteristics of a women entrepreneur and problems faced by women entrepreneur.
- Association promoting women entrepreneur –
World Association of Women Entrepreneurs (WAVE), Women Entrepreneurs Wing
NAYE, MSME, Krishi Vigyan Kendra (KVK).

Unit IV: Practical

- Write a case study report about a women entrepreneur.
- Prepare a small business plan.
- Prepare an album of entrepreneurs with their profiles.
- Write a report on an association promoting women entrepreneur within 1000 words.

Text Books:

- ✓ *G. L Ray, Extension Communication and Management*

- ✓ V.K Dubey and Indira Bishnoi, *Extension Education and Communication*
- ✓ Vasant Desai, *Entrepreneurial Development, Recent Edition*

Reference Books:

- ✓ Meredith, G. Getel (1982) *Practice of entrepreneurship*.
- ✓ Patel, V.C (1987): *Women Entrepreneurship- Developing New Entrepreneurs*, Ahmedabad, EDIL
- ✓ S.S Khanna, *Entrepreneurial Development, Recent edition*.

E-Resources:

- ✓ <https://www.vedantu.com/commerce/entrepreneurship-development-process>
- ✓ <https://leverageedu.com/blog/entrepreneurship-development/>
- ✓ <https://www.shiksha.com/online-courses/articles/entrepreneurship-development/>
- ✓ <https://wadhwanifoundation.org/what-is-entrepreneurship-development/>

Model Questions:

1. The word entrepreneur has come from _____. (One word)
2. What is entrepreneurship? (Maximum 50 words)
3. Discuss about the scope of entrepreneurship in India? (Maximum 250 words)
4. Define women entrepreneur and discuss the characteristics and problems faced by women entrepreneur? (Maximum 800 words)

MULTIDISCIPLINARY COURSES
FAMILY RESOURCE MANAGEMENT

Credits: 3

Lectures: 45 Hours

Full Mark: 100(Theory)

Course Outcome:

- CO1: Students will be oriented about the available human and non-human resources in the family and their management.
- CO2: Students will learn the importance of judicious management of resources and their conservation techniques for sustainability.

Learning Outcome:

- LO1: The students will gain an insight on Family Resource Management and its application.
- LO2: The students will be aware of the management process.
- LO3: The students will learn about judicious utilization of resources management for conservation and sustainability.

Unit-I: Resource Management in Family Setting:

- Family Resource Management- Concept, definition, and scope of family resource management.
- Resources-Meaning, classification, and characteristics of family resources, factors affecting utilization of resources.
- Decision making-Types of decisions, Steps of decision making.

Unit-II: Motivating Factors in Management and Management Process:

- Motivating Factors in Management-Motivation in management, Theories of motivation—Maslow's hierarchy of needs theory
- Motivating Factors-Values, goals and standards interrelatedness of values, goals and standards.
- Management Process-Definition and steps in management process-planning, organizing, controlling, and evaluating, qualities of a good home maker.

Unit-III: Resource Conservation:

- Money-Types of income, supplementing family income.

- Time-Concept and steps in time management; Factors to be considered in making time and activity plan.
- Energy-Efforts, Fatigue, Work simplification techniques and Mundel's classes of change.
- Space-Meaning, Importance, Functional storage space management.

TEXT BOOKS:

1. Seetharaman P., Batra S. and Mehra P., Family Resource Management, CBS Publishers & Distributors, New Delhi.
2. Nickell, P and Dorsey, J.M., Management in family living, CB S Publishers, and Distributors.
3. Grossl. H and Crandall E. W., Management for Modern Families.
4. Home Management-Education Planning Group, Arya publishing house, Delhi.

REFERENCEBOOKS

1. Vergese, Ogaleand Srinivasan, Home Management.
2. Mann M. K., Home Management for Indian Families.
3. Mallick P., Textbook of Home Science.
4. Devdas and Jaya, Introduction to Home Science.

E-RESOURCES:

- <https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=8x0nJkh/R0vHkX1U70Z/CQ==>.
- <https://nios.ac.in/media/documents/srsec321newE/321-E-Lesson-10.pdf>
- https://www.brainkart.com/article/Definition-and-Concept-of-Family-Resource-Management_33507/

MODELQUESTIONS:

1. ----- is the first process in the management process. **(one word)**
2. Write the meaning and types of decision making in a family.**(maximum 50 words)**
3. Describe the work simplification process.**(maximum 50 words)**
4. Discuss about the concept, definition, and scope of Family Resource Management. **(maximum 800 words)**

CHILD DEVELOPMENT

Credits: 3

Lectures:45Hours

FullMark:100 (Theory)

Course Outcome:

CO1- Students will be able to understand the crucial aspects of child development.

CO2-Students will understand about the developmental patterns of child development.

Learning Outcome:

LO1: The students will gain an insight on scientific methods of studying child development.

LO2:The students will be aware of the stages of prenatal development and factors affecting pre-natal development.

LO3:The students will understand the developmental patterns during early childhood years (0-5years).

Unit–I: Fundamentals of Child Development:

- Child Development- Meaning, definition, principles, stages, and methods of studying child development.
- Prenatal Growth and Development -Meaning, significance and stages of prenatal growth and development: Conception, period of ovum, period of embryo and period of fetus.
- PrenatalEnvironmentalInfluences-Maternalage, nutrition, drugs, irradiation, alcohol, smoking, maternal emotions, maternal health, Rh factor, diseases, and birth hazards.

Unit–II: Developmental Milestones (During First Five Years of Child's Life):

- Physical Development - Physical growth cycles, body size, body proportions, bones, teeth, muscles and fat, teeth, development of the nervous system.
- Motor Development –Meaning, principles and sequence of motor development.
- Speech Development – Meaning, pre-speech forms of communication, essentials in learning to speak, major tasks in learning to speak, speech disorders.

Unit–III: Developmental Milestones (During First Five Years of Child's Life):

- Emotional Development-Meaning, common emotional patterns, and characteristics of child hood emotions.
- Social Development – Meaning, process and importance of early social experiences. factors influencing social development.

- Cognitive Development-Meaning and importance, factors influencing cognitive development.

TEXT BOOKS:

1. Hurlock E.B.-*Child Development*; New Delhi; McGraw Hill.
2. Hurlock E.B.-*Developmental Psychology*; New Delhi; McGraw Hill.
3. Chowdhury, A-Text Book on Child Development and Family Relations, New Delhi: Academic Excellence.
4. Panda K.C.-*Elements of Child Development*; Kalyani Publishers.
5. Kuppaswamy B-*Text Book of Child Behavior and Development*; India; Konark Publishers Pvt. Ltd.

REFERENCEBOOKS:

1. Jaya N., and Rajammal P.D.-A Text Book of Child Development. New Delhi: Mc Millan Publishers.
2. Mussen P.H., Conger J.J, Kagan J. –Child Development and Personality; New York; Harpers and Row publishers.
3. Weiner I.B., Elkind D.-Child Development: A Core Approach; John Wiley & Sons Inc.
4. Papalia, Olds & Feldman-Human Development; McGraw Hill Humanities/Social Sciences/ Language.

E RESOURCES:

- <https://www.choc.org/primary-care/ages-stages/3-years/>
- <https://www.betterhealth.vic.gov.au/health/>.
- <https://raisingchildren.net.au/preschoolers/development/development>.
- <https://www.cdc.gov/ncbddd/childdevelopment/facts.html>
- <https://www.all4kids.org/news/blog/why-the-first-5-years-of-child>

MODELQUESTIONS:

1. Period of ovum lasts for _days.(One word)
2. Explain about the Principles of child development)? (Maximum 50 words)
3. Discuss about the stages of prenatal development?(Maximum 250 words)
4. Discuss about the factors affecting the physical growth and development in children.(Maximum 800 words)

FOOD AND NUTRITION

Credits: 3

Lectures:45Hours

FullMark:100(Theory)

Course Outcome:

CO1: The students will get basic knowledge on macro and micro nutrients and different types

of food and their nutritional contribution.

CO2: The students will gain practical knowledge on market survey and locally available food stuffs from each food group.

Learning Outcome:

- LO1: The students will learn the basic concepts in food, nutrition, and health.
- LO2: The students will gain an insight into the classification, functions, dietary sources, and daily requirements of various nutrients.
- LO3: The students will understand about different food groups and their nutritional contribution.

Unit-I: Basic Concepts in Food and Nutrition:

- Introduction to Food and Nutrition Science- Definitions (food, food science, food additive, fermented food, food fortification, functional food, nutrition, health, nutrients, nutritional status, optimal nutrition, nutrition security).
- Classification and Functions of Food- Physiological, psychological, and socio- cultural.
- Food Groups- Basic five and seven food groups, their nutritional contribution.
- Methods of Cooking- Different methods of cooking and their advantages and disadvantages:
Dry methods - Frying, Sautéing, Parching, Roasting, Grilling/Broiling, Toasting, and Baking. Moist methods- boiling, steaming, stewing, simmering, poaching, blanching, pressure cooking. Combination method- braising.

Unit-II: Macro Nutrients:

- Carbohydrates- Introduction, classification, functions, dietary sources, and daily requirement.
- Proteins- Introduction, classification, functions, dietary sources, and daily requirement.
- Lipids- Introduction, classification, functions, dietary sources and daily requirement.

Unit-III: Micro Nutrients:

- Fat Soluble Vitamins (A, D, E and K)- Introduction, functions, dietary sources, daily requirement, and deficiency diseases.

- Water Soluble Vitamins(Thiamin, Riboflavin, Niacin, Folate, Vitamin B12and Vitamin C)- Introduction, functions, dietary sources, daily requirement, and deficiency diseases.
- Minerals(Calcium, Iron, Zinc, and Iodine)-Introduction, functions, dietary sources, daily requirement, and deficiency diseases.

TEXT BOOKS:

1. Srilakshmi. B, Food Science, New Age International (P) Limited Publishers.
2. Srilakshmi. B, Nutrition Science, New Age International Pvt. Ltd.
3. N. ShakuntalaManay, M. Shadaksharaswamy, Foods Facts and Principles, New Age International (P) Limited Publishers.
4. Swaminathan. M, Advanced Text-Book on Food and Nutrition, Volume 1 and 2, The Bangalore printing and publishing co. LTD.

REFERENCEBOOKS:

1. Bamji MS, Krishna Swamy K. Brahman GNV. Textbook of Human Nutrition, Oxford and IBH publish Co Pvt. Ltd.
2. Norman. N Potter, Joseph H. Hotchkiss, Food Science,5th edition, CBS Publishers, and Distributors.
3. Mudambi S.R and Rajagopal M.V, Fundamentals of foods and Nutrition,New Age International Pvt. Ltd.
4. Gopalan, C. Rama Sastry, B.V., and Balasubramanian, S.C., Nutritive value of Indian Foods, National Institute of Nutrition, ICMR, Hyderabad.

E-RESOURCES:

1. <http://www.nutrition.gov>
2. <http://www.usda.gov>
3. <http://egyankosh.ac.in>
4. <http://ecourses.icar.gov.in>

MODELQUESTIONS:

1. Name the fat-soluble vitamins. (**One word**)
2. Define Nutrition.(**Maximum 50words**)
3. Discuss about the classification of carbohydrate.(**Maximum 250 words**)
4. Explain the classification and functions of food.(**Maximum 800words**)

SKILL ENHANCEMENT COURSE

LIFE SKILL EDUCATION

Course Outcome:

- **CO1:** Identify career opportunities in consideration of their own potential and aspirations.
- **CO2:** Gain self-competency and confidence.
- **CO3:** Participate in simulated interview.
- **CO4:** Analyses the role of digital literacy in professional life.
- **CO5:** Develop interpersonal skills and adopt good leadership behavior for self-empowerment and the empowerment of others.
- **CO6:** Demonstrate a set of practical skills such as time management, self-management, conflicts management, team leadership etc.
- **CO7:** Understand the importance of values in individual, social circles, career path and national life.

Unit I:

Introduction to Life Skills Education and Social Skills

- Concept, need and objectives of life skills education.
- Communication skill-types of communication, barriers to communication, strategies for effective communication.
- Interpersonal skills-determinants, maintaining and sustaining a relationship, conflict resolution.
- Digital literacy and social media-digital ethics and cyber security.

Unit II:

Life Skills for Self-Management and Career Planning

- Self-awareness-self-concept, self-esteem, time management and empathy.
- Emotional intelligence, social intelligence and spiritual intelligence.
- Choosing career-sources of career information, preparation of resume, interview facing and group discussion.

Unit III (Practical)

- Each student will be required to prepare and submit a report on any one of the following:
- Prepare a report on the implications of any two pillars of education in developing life skills education in India.

- Examine the opportunities and challenges in application of life skills education and write a report.
- Conduct a semi structured interview on parents exploring the challenges of parenting and life skills needed for effective parenting. Compare the gender difference of parenting.
- Conduct Case study on life history of great personalities who contributed towards universal values.

Sample Questions

- What is meant by Life skills?(1 Mark)
- Mention any two life skills laid down by WHO.(2 Marks, Within 50 words)
- Define Communication. Discuss strategies for effective communication.(5 Marks, Within 300 words)
- Critically reflect on Four Pillars of Education.(8 Marks, Within 500 to 800 words).

Suggested Readings

- ✓ Dahama O.P., Bhatnagar O.P, (2005). *Education and Communication for Development (2nd Edn.)*. New Delhi: Oxford & BH Publishing Co. Pvt. Ltd.
- ✓ Hendricks, P.A. Developing Youth Curriculum Using the Targeting Life Skills Model: Incorporating Developmentally Appropriate Learning Opportunities to Assess Impact of Life Skill Development (*Iowa State Extension Publication 4H-137A*, 1998). Ames, IA: Iowa State University.
- ✓ Konar, N.(2011). *Communication Skills for Professionals (Second Edition)*. New Delhi: PHI Learning Private Limited.
- ✓ Mangal, S.K., and Mangal, U.(2014). *Essentials of Educational Technology*, PHI Learning Pvt. Ltd. 3.
- ✓ Sampath, K, A., Panneerselvam, S.S.(2007). *Introduction to Educational Technology*. Sterling Publisher Pvt. Ltd.
- ✓ Verma, S. *Development of Life Skill-II*, Vikas Publishing House.
- ✓ <http://www.unesco.org>
- ✓ <http://www.unicef.org>
- ✓ <http://www.un.org>
- ✓ <http://www.who.int/en/>

INTRODUCTION TO STATISTICS AND DATA ANALYSIS

Course Outcome:

1. To learn basic statistical procedures for research.
2. To understand applications of various statistical techniques for analysis and interpretation of data.

3. 3.Gaining knowledge on Statistics & Computer Application will enable students to do qualitative and quantitative data analysis of their researchwork.

Unit-I:

- Classification & tabulation of Data: Meaning, objective and types of classification.
- Formation of discrete And continuous frequency distribution.
- Tabulation of data, parts of a table, General Rule of tabulation, Types of tables,
- Diagrammatical and graphical presentation of data: significance, types and limitation of different types of diagrams and graphs used for presentation of data.

Unit-II:

- Measure of Central tendency: Mean, Median, Mode and their uses with examples and their advantages and disadvantages.
- Measure of Dispersion: significance and methods used in studying dispersion (range, quartile deviation, mean deviation and standard deviations) with their uses, advantages and disadvantages.

Unit-III:

- Test of Relationship; Meaning, types and methods used to study correlation (simple Co-efficient of correlation, rank correlation.
- Testing of Hypothesis; Meaning, basic concept concerning testing of hypothesis, procedure for testing hypothesis, Errors in testing hypothesis.

Books Recommended

1. Statistical Methods – S.P.Gupta, Sultan Chand & Sons Publisher- NewDelhi
2. Research Methodology, Methods and Techniques – C.R. Kothari Wiley Eastern Limited –New
3. An Introduction to Statistical Methods – C.B.Gupta&V.Gupta- Vikas Publishing House PVTLtd.
4. Methodology and Techniques of Social Research – P.L.Bandarkar&T.S.Wilkinson –Himalaya Publishing House- Mumbai.
5. Research Methods & Measurements in Behavioural& Social Sciences – G.L.Bhatnagar – Agri. Cole. Publishing Academy, NewDelhi.
6. Statistics in Psychology & Education –Henry,E.Garett, David Heley andCo.

7. Experimental Design in Psychological Research –Edwards
8. The Quality of Life: Valuation in social Research – R. Mukherjee – Sage publications, NewDelhi.
9. Fundamentals of Statistics-D.N. Elhance.
10. Statistics in Psychology & Education-Garrett & Word

COMPUTER APPLICATION IN TEACHING LEARNING

Course Outcome:

- **CO1:** Learn basis of Basics of MS Windows.
- **CO2:** Demonstrate basic understanding of computer applications with reference to MS Windows, MS excel and MS PowerPoint.
- **CO3:** Generate spread sheets, charts and presentations.
- **CO4:** Design personal, academic and business documents using MS Office.
- **CO5:** Model the modes of development of self-learning materials and prepare different types of instructional material.
- **CO6:** Explain different OERs, MOOCs available for effective learning.
- **CO7:** Develop learners' e-portfolios.
- **CO8:** Classify various E-resources for effective learning.
- **CO9:** Describe the concept of artificial intelligence and its applications in teaching learning.
- **CO10:** Determine similarity index of the various documents like dissertations, theses etc.

Unit I: Basics of Computer Applications

- Basics of MS Windows: Desktop, Recycle bin, My Computer, Documents, Pictures, Music, Videos, Task Bar and Control Panel.
- MS-Word and its features: Creating, Editing, Formatting and Printing of Documents, Inserting, Word Art, Page Numbers, Mail Merge.
- MS-Excel and its features: Creating a new worksheet, selecting cells, Entering and editing Text, Numbers, Inserting Rows/Columns, changing widths and heights of row and columns, Formulae, referencing cells, changing of font sizes and colours.
- MS-PowerPoint and its features: Creating, Inserting and Deleting Slides of a Presentation. Adding Pictures, Inserting Objects, Audio, Video, Custom Animation and Hyper linking of documents.

Unit II: Introduction to E-learning

- Concept of e-learning, benefits of E-learning, Introduction to LMS using E-learning

- Approaches to e-learning: Offline, Online, Synchronous, Asynchronous, Blended learning and Mobile Learning.
- Security concerns related to interactive contents: Viewing, disabling and managing interactive content; securing the computer from viruses and other internet attacks.

Unit III: Practical

Each student is required to submit Practical/Project report/Assignments selecting any one of the following:

- Prepare a M. S. Word File of any content of your course and Present..
- Prepare a M. S. Excel File of any content of your course and Present..
- Overview of different Plagiarism detection tools and suggestive measures.
- Prepare a Power Point Presentation of any content of your course and Present..

Sample Question

1. What is meant by computer?(1 Mark)
2. Mention any two benefits of mobile learning.(2Mark,Within50 words)
3. Discuss the benefits of e- learning and LMS in teaching learning process.(3Mark,Within300 words)
4. Give an account of Artificial Intelligence with reference to classroom management.(8 Mark, within 500-800 words)

Reference Books:

- ✓ *Creating learning materials for open and distance learning: A Handbook for Authors and Instructional Designers (2005). Commonwealth of Learning. Vancouver: Canada*
- ✓ *Excel2020ineasysteps-MichaelPrice-TMH publications*
- ✓ *Foundations of Self-Learning Materials. http://wikieducator.org/Session_3.*
- ✓ *Garrison, D.R. and Anderson, T. (2003). e-learning in the 21st century: a framework for research and practice. London: Routledge.*
- ✓ *Haas, K.B. and Packer, H.Q. (1990): Preparation and use of audio-visualaids,3rd Edition, Prentice Hall, Inc.*
- ✓ *Jayaram, K and Dorababu, K.K.(2015). Self-learning materials in distance education system. International Journal of Current Research. Vol. 7, Issue, 10, pp.21929-21934.*
- ✓ *Minnick, D.R.(1989). A guide to creating Self Learning Materials. International Rice Research Institute Los Baños, Laguna, Philippines.*
- ✓ *MS Office2007in a Nutshell-Sanjay Saxena -Vikas Publishing House.*
- ✓ *Murthy, CR K and Santosh Panda(2002).Report of the works hopon strategies for revision of self-*

learning materials, IGNOU, New Delhi. (Unpublished).

- ✓ Oreyet.al.(2009).Education almedia and technology. New York: Springer Science Business Media.
- ✓ Rana, S.(1994):Open Learning in India, Common wealth Publishers, New Delhi.
- ✓ Roblyer, M.D.(2008).Integrating educational technology into teaching. New Delhi: Pearson.
- ✓ Rowntree, Derek (1986). Teaching through self-instruction, Kogan Page, London/Nichola Pub. Comp. New York.
- ✓ Senapaty, H.K. (2009). ICT integrated learning materials on basic school subjects from constructivist perspectives. Bhubaneswar: Regional Institute of Education, NCERT.
- ✓ UNESCO(2005).How ICT can create new, open learning environments: Information and communication technologies in schools: A handbook for teachers. Paris: UNESCO.
- ✓ UNESCO (2008). Capacity building for ICT integration in education. Retrieved from <http://portal.unesco>.
- ✓ UNESCO(2008).ICT Competency standards for teachers: Policy Framework. Retrieved from <http://portal.unesco>.
- ✓ Working in Microsoft Office –Ron Mansfield-TMH.

VALUEADDEDCOURSE

PRESCHOOL AND CRÈCH MANAGEMENT

Credit-3

Lecture-45Hours

Course Outcome:

CO1-Understandtheprinciplesofestablishment andmanagementofCrèche/Pre School.

Learning Outcome:

LO1:Studentswillgainexpertisetorunacrècheandpreschool.

LO2:Studentswillbeabletounderstandandmanagetheresourcesrequiredformanagingcreche and preschool.

LO3:Studentswillgain knowledgeaboutthefunctionsofvariousauthoritiesdealingwith crèche and

preschool.

Unit-I-IntroductiontoManagementofCrècheandPre-School:

- Meaning,NeedandImportance,DifferencebetweenCrèche,andPre-School.
- Site Selection, Types of rooms, Arrangement of rooms, Ventilation, Lighting, and safety.
- Play ground, Play Equipment-Types, Criteria for Selection, Safety Aspects, Storage Facility, Maintenance of Furniture and Equipment, Provision of safe drinking water and sanitary Facilities.

Unit--II-PersonnelManagementandRecord Keeping:

- RoleandQualitiesofteacher,caretakerandotherstaffinvolvedinwelfareandcare of children. Teacher Child Ratio, Record, Health Center facility
- Pre-Schoolprogrammesandcurriculum Planning.
- UseofAudio-VisualAidsforPre-Schoolchildren.

Unit-III-Practical:

- Fieldvisittoanestablishedcrèche/pre-school.
- Reportwriting

BooksRecommended:

- 1- Teachingandlearning:thecultureofpedagogy.NewYork:P.ClarkeSage
- 2- ThreadsofThinking:(FourthEdition)Nutbrown.C(2011),NewYork:SageGlobal

VALUE ADDED COURSE

FOOD PROCESSING AND PRESERVATION

Credits:3

Lectures-45Hours

Course Outcome:

- Tolearnaboutmethodsandprinciplesoffoodpreservation.
- StudentswillgainexpertisetoeestablishstartupunitonFoodpreservationandprocessing. LO2: Students will get knowledge on schemes providing Micro Credit Linkage.
- StudentswillbeacquaintingwithknowledgeofqualityCertification offoodproducts.

Unit-I-MethodsofFoodpreservationandProcessing:

- Concept, Scope and importance of Food Preservation, Classification of food preservatives and additives
- Different Methods of Food processing
- Packaging, Labelling ofprocessedfood products,

Unit–II–Settingupanewstart-upunit:

- Quality certification and branding
- Machineries and equipments required to set up the unit.
- Government schemes andmicrocreditlinkage(MKUYandMSME)

Unit-III-Practical:

- Preparationandpackagingofprocessedfoodproduct-Jam,Jelly,Sauce,Squash,RTS drink, Murraba, Candy, Pickle, Chips, Ragipapad.

- Field visit to a food processing unit.
- Report writing and presentation.

Recommended Books

Food Processing and preservation, G. Subhalaxmi, Sobha AUDIP, Padmini S Ghugra, New Age International Publishing.

ETHICS AND VALUES

Course Outcome:

- The module aims to generate a sensitivity among the students towards women
- Enable them to value the contributions of women, from family to the larger society
- To generate among them a distinct urge to respect women
- To appreciate that women should have equal status and equal entitlements as member of the society
- To create an awareness amongst students about the need for ensuring dignity and equality for the vulnerable sections of the society

Learning Objectives:

After going through the contents of the module and the classroom transactions on the contents, the students are expected to

- Have changes in their perceptions and practices towards women
- Develop proper attitude towards women and value their work and contribution
- Come forward to challenge unethical treatments against women
- End gender based hierarchy and hegemony, remove the feeling that women are counter to men and bring about a complementarity among the hitherto existing gender binary
- Allow women to realize their self worth and contribute their best for betterment of the society
- Pioneer in creating a gender equal society where the well being, happiness and security of the women will be well protected ; contributing towards a better and happier society
- Students would be able to appreciate values and ethics relating to vulnerable sections of the society.
- Students would learn to practice equality, diversity and social justice.
- Students would become more empathetic and compassionate towards vulnerable sections of the society.

UNIT –I WOMEN AND SOCIETY

- General introduction on Ethics and Values.
- Gender equality as an essential precursor to social progress,
- Pre-natal sex selection, Gendered practices in the family, Gender based division of labour in the family.
- Marriage and women, Marriage and women's consent, Child marriage, Practice of dowry, Women and family violence.

UNIT –II ISSUES RELATING TO CHILDREN

- Nutrition and health problems faced by children.
- Child Exploitation: Child labour, trafficking, Sexual exploitation

UNIT –I II WOMEN AT WORK AND THIRD GENDER

- Women's work: The Invisible hands, Exploitation of women at work.
- Gender Stereotyping at work, Glass ceiling
- Women and pay gap
- Sexual Harassment of women at work
- Working women and role conflict.
- Understanding the third gender and social justice for them.

VOCATIONAL COURSES

EARLY CHILDHOOD CARE& EDUCATION

Objectives:

- *To have a knowledge about the Importance of early childhood years & child rearing practices.*
- *To understand children's environment, Physical & psychological health care, importance of play & developing creativity in children is essential for optimum development of young children.*

Expected Outcomes

- *At the end of the course students will be able to gain knowledge on different aspects of early childhood care and education & can set up play schools, pre schools or Crèches.*

Unit-I: Early Childhood care & Education:

- Meaning, importance, objective, principles of ECCE
- Types of pre-schools/ programs – play centers, day care, kindergarten, balwadi, anganwadi, mobile crèches,
- Contribution of the following thinkers to the development of ECCE (their principles, application & limitation) in the context ECCE. Rousseau, Froebel, Montessori, Gandhi, Tarabai Modak, ECCE in India.

Unit-II: Organizational Set up:

- Building & Equipment- Location , site, size and arrangement of rooms, play ground, play equipment, storage facilities, maintenance of the equipments and furniture.
- Administrative set up – staff & personnel working at different level.
- Role ,responsibilities & essential qualities of teacher & other personnel.
- Record & report-significance, types.

Unit-III: Curriculum & Activities:

- Principles & planning of curriculum for pre-school, major goals, factors determining the effectiveness of the curriculum
- Activities of curriculum for physical development, healthful living, social & emotional

development, cognitive development & creative art & craft.

Books Recommended

1. Early Childhood care & Education (ECCE) – J.Mohanty&B.Mohanty – Deep & Deep Publication Pvt Ltd, New Delhi.
2. Pre-school Children – Development, care & Education – A.Chowdhury& R. Choudhury – New Age International Limited – Publishers, NewDelhi.
3. Pre-school Education- Philosophy & practice- G.Pankajam-The Indian Publications-AmbalaCantt.
4. Theory & Principles of Education- Bhatia & Bhatia – Doaba House,Delhi.
5. Introduction to Early Childhood Education-J.A.Brewer, Allyn & Bacon.Boston,
6. Early Childhood Education- Barbara Day – -Macmillan, NewYork.
7. Early Childhood Education-J.S.Garewal- Agra national Psychological CorporationPublishers.
8. Introduction to Early Childhood Education-Hilde brand Vena, -Macmillan-NewYork.
9. Early Childhood Education programme, V.Kaul NCERT, NewDelhi.
10. Guide to Nursery School Teacher – R. MuralidharanNCERT.

ENVIRONMENTAL CONSERVATION

Objectives:

- To acquire knowledge about components of environment and impact of population growth on environment.
- To understand causes and effects of environmental pollution and its impact on human health.

Expected Outcome:

- Studying environmental management will help to enrich knowledge about environment, population and environment, environmental pollution, and public health hazards due to pollution.

Unit-I: Environment:

- Components of environment, factors influencing environment
Elements of environment. Atmospheres: (Troposphere, Mesosphere, Ionosphere, Exosphere, Hydrosphere, Lithosphere, Biosphere),
- Physico-chemical factors in the environment, changes in environment, Natural resources- conservation & sustainable development.

Unit-II: Environmental Pollution:

- Definition, types of pollutants, Agents causing pollution,
- Classification, effects of pollution- Air pollution, sources, air pollutants, effects of air pollution & its control.
- Water Pollution: sources, water pollutants, effects of water pollution & its control.
- Noise Pollution: effect & control of noise pollution, Land degradation, causes, effect & control, waste disposal, legal provisions to control pollution.

Unit-III: Environment and Public Health:

- Epidemiology, transmission of communicable diseases, water, air, vector and food borne diseases.
- Environmental pollution & community health, chemical insecticides & its impact on health,

- toxic action of metals & biological substances, sanitation measure to prevent & control the spread of diseases, vector control.

Books Recommended

1. Environmental Studies- A.K.Patra, Kalyani Publishers, New Delhi.
2. Fundamentals of Environmental Studies-S.N.Tripathy&Sunakar Panda, Vrinda Publications (P) Ltd, Delhi.
3. Environment & Society- P.C.Mishra&R.C.Das, Macmillan India Limited, New Delhi.
4. Fundamentals of Environmental Studies- N.K.Tripathy, Taratarinin Pushtakalaya, Berhampur, Orissa.
5. Man & Environment- M.C.Dash&P.C.Mishra, Macmillan India Limited, Kolkata.
6. A Text Book on Environmental Pollution & Control- H.S.Bhatia, New Delhi.
7. Environmental pollution & Development: Environmental Law, policy & Role of Judiciary- C.Pal, Mittal Publishers, New Delhi.
8. Sociology of Environment-S.N.Power&R.B.Patil, Rawat Publishers, Jaipur.
9. Environmental Education Problems & prospects- R.Ghanta&B.D.Rao, Discovery, New Delhi.
10. The Impact of Environmental Degradation on People- Philip viegs&Geeta Menon, Inidan social Institut, New Delhi.
11. Sustainable development & Environment, vol. I- Amit khanna De *et al.* , Cosmo Publisher, New Delhi.
12. Environmental Degradation: Socio-economic Consequences, I.S.Chauhan&A.Chauhan, Rawat Publishers, Jaipur.

NURSERY MANAGEMENT

Objectives:

- To acquire knowledge about nursery management like propagation, bed preparation and packing of nursery plants.

Expected Outcome:

- Studying nursery management will help the students in developing and managing their own garden .

UNIT-I

- Propagation: importance and potentialities, sexual and asexual methods of propagation
- Advantages and disadvantages of Propagation.

UNIT-II

- Methods of vegetative propagation: Cutting, budding, layering, and grafting techniques.
- **Preparation of nursery beds, orchard layout, system of crop planting, pot mixture making.**

UNIT-III

- Preparation of different types of cutting, budding, layering and grafting.
- Uprooting, digging, labelling and packing of nursery plants.

BOOKS AND REFERENCES

1. Dr. Arunkumar Singh and Abhinav Kumar(2020). Propagation and nursery management
2. R.R. Sharma and Manish Shrivastav(2004). Plant propagation and nursery management.
3. B.S. Chundawat(2017). Plant propagation and nursery management.

