

Syllabus of B.A/ B.Sc. Home Science as one (Discipline: Major)

W.E.F. the Academic year 2022-23 & onwards

PREAMBLE:

Home Science is both science and social science-art related multi-disciplinary field of study. The Learning Outcomes-based Curriculum Framework (LOCF) for B.Sc/B.A (Home Science) degree programme has been designed to integrate the application of sciences and humanities to create a cadre of home scientists to improve the quality of life of individuals, family, community and nation. Home science program is predominantly practical oriented and therefore helps to develop and polish various skills to empower the cadre required towards innovation, incubation and entrepreneurship along with professional and employable skills. Hands on experience with Project work/internship/fieldwork would help and build capacities for conducting primary research among the students. The curriculum has been structured to prepare the undergraduates to achieve skills to move forward with the development of the society/community/nation and entrepreneurship. The Curriculum incorporates multidimensional fundamental, core and applied aspects of various disciplines with Graduate Attributes (GAs) such as disciplinary knowledge, laboratory/field driven practical's, the art of writing & communication, self-learning, critical thinking, analytical & problem solving abilities, use of ICT, application of knowledge, lifelong learning, research-related skills, team spirit, multicultural competencies, leadership qualities, global vision, professional commitment and sensitizing with Sustainable Development Goals (SDGs) of United Nations. It also aims to build future ready professionals who would be socially responsible global citizens contributing to the overall development of the country. The model curriculum presented has a multidisciplinary approach keeping the New National Education Policy 2020.

Model Curriculum:

Name of the Degree Program: B.A./B.Sc. Honours

Discipline Core: Home Science

Total Credits for the Program: 176 Starting year of implementation: 2021-22

Program Outcomes:

By the end of the program the students will be able to:

(Refer to literature on outcome-based education (OBE) for details on Program Outcomes)

- 1. Deliver quality tertiary education through learning while doing.
- 2. Reflect universal and domain-specific values in Home Science.
- 3. Involve, communicate, and engage key stakeholders.
- 4. Preach and practice change as a continuum.
- 5. Develop the ability to address the complexities and interface among of self, societal and national priorities.
- 6. Generate multi-skilled leaders with a holistic perspective that cuts across disciplines.
- 7. Instill both generic and subject-specific skills to succeed in the employmentmarket.
- 8. Foster a genre of responsible students with a passion for lifelong learning and entrepreneurship.
- 9. Develop sensitivity, resourcefulness and competence to render service to families, communities, and the nation at large.
- 10. Promote research, innovation and design (product) development favoring all the disciplines in Home Science.
- 11. Enhance digital literacy and apply them to engage in real time problem solving and ideation related to all fields of Home Science.
- 12. Appreciate and benefit from the symbiotic relationship among the five core disciplines of Home Science Resource Management, Food Science and Nutrition, Textiles and Clothing, Human Development and Family Studies and Extension and Communication.

Assessment: Weightage for assessments (in percentage)

Type of Course	Formative Assessment / IA	Summative Assessment
Theory	60	40
Practical	25	25
Projects	-	-
Experiential Learning (Internships etc.)	-	-

Contents of Courses for Ba/B.Sc. Home Science as Major Subject Model II A

Semest	er Course No.	Course Category	Theory/ Practical	· · · · · · · · · · · · · · · · · · ·		Marks	
						S.A	I.A
	HSCT 1.1		Theory	4	Principles of Food and Nutrition	60	40
4	HSCP 1.1	DSC A 1	Practical	2	Principles of Food and Nutrition	25	25
1.	HSCT1.2	OE- 1	Theory	3	Food Preservation	60	40
	HSCT 2.1		Theory	4	Fundamentals of Human Development	60	40
2.	HSCP 2.1	DSC A2	Practical	2	Fundamentals of Human Development	25	25
	HSCT 2.2	OE- 2	Theory	3	Teaching Materials For Early Childhood Education	60	40
	Ex	it Option wi	th Certificate	e in Ho	me Science (48 Credits)		
	HSCT 3.1		Theory	4	Early Childhood Care and Education	60	40
3.	HSCP 3.1	DSC A 3	Practical	2	Early Childhood Care and Education	25	25
	HSCT 3.2	OE- 3	Theory	3	Income Generating Skills	60	40
	HSCT 4.1	DSC A 4	Theory	4	Introduction to Textiles	60	40
4.	HSCP 4.1		Practical	2	Introduction to Textiles	25	25
	HSCT 4.2	OE- 4	Theory	3	Fashion Designing	60	40
	Е	xit Option w	vith Diploma	in Hor	ne Science (96 Credits)		
	HSCT5.1	DSC A 5	Theory	3	Resource Management and Consumer Economics	60	40
5	HSCP5.1		Practical	2	Resource Management and Consumer Economics	25	25
	HSCT5.2	DSC A 6	Theory	3	Communication and Extension Education	60	40
	HSCP5.2		Practical	2	Communication and Extension Education	25	25
-	HSCT5.3	VOC-1	Theory	3	Special Education	60	40
	HSCT6.1	DSC A 7	Theory	3	Human Development and Family Dynamics	60	40
	HSCP6.1		Practical	2	Human Development and Family Dynamics	25	25
-	HSCT6.2		Theory	3	Interior Decoration	60	40
6	HSCP6.2		Practical	2	Interior Decoration	25	25
	HSCT6.3		Theory	3	Designing Interior Spaces	60	40

	HSCT7.1	DSC A 9	Theory	3	Traditional Textiles and Costumesof India	60	40
	HSCP7.1		Practical	2	Traditional Textiles and Costumesof India	25	25
	HSCT7.2	DSC A10	Theory	3	Children with Developmental Challenges	60	40
	HSCP7.2		Practical	2	Children with Developmental Challenges	25	25
	HSCT7.3	DSC A 11	Theory	3	Nutritional Management in Health and Disease	60	4(
	HSCP7.3		Practical	2	Nutritional Management in Health and Disease	25	25
	HSCT7.4	DSE 1	Theory	3	Ergonomics in Design	60	40
	HSCT7.5	DSE 2	Theory	3	Public Health Nutrition	60	40
7.	HSCT7.6		Theory	3	Research Methodology	60	40
	HSCT8.1	DSC A12	Theory	3	Clothing and Fashion Illustration	60	40
	HSCP8.1	1	Practical	2	Clothing and Fashion Illustration	25	2
	HSCT8.2	DSC A 13	Theory	3	Entrepreneurship Development	60	40
	HSCP8.2		Practical	2	Entrepreneurship Development	25	25
	HSCT8.3	DSC A 14	Theory	3	Guidance and Counselling	60	40
	HSCP8.3		Practical	2	Guidance and Counselling	25	2
8.	HSCT8.4	DSE 3	Theory	3	Food Service Management	60	40
	HSCT8.5		Theory	6	Research Project OR		
					Any two of the following electives	60	40
					/ Internship		
					(A) Food Preservation and Safety		
					(B) Energy Conservation		
					(C) Extension Management		
					(D) Gerontology		

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^{*}In lieu of the research Project, two additional elective papers/ Internship may be offered.

Curriculum Structure for the Undergraduate Degree Program Ba/B.Sc. Home Science

Total Credits for the Program: 176 Credits

Starting year of implementation: 2021-22

Name of the Degree Program: BA/BSc Degree/Honors

Discipline/Subject: Home Science as one Discipline A

Program Articulation Matrix:

This matrix lists only the core courses. Core courses are essential to earn the degree in that discipline/subject. They include courses such as theory, laboratory, project, internships etc. Elective courses may be listed separately.

Sem	Title /Name of the course	Program outcomes that the course addresses (not more than 3 per course)	Pre-requisite course (s)	Pedagogy	Assessment
1	DSC A 1 Principles of Food and Nutrition	PO – 4 PO – 5 PO – 7	12+/Equivalent Pass	Demonstrationlecture	Formative and Summative Assessment
	OE- 1 Food Preservation	PO- 3 PO- 8 PO- 9	12+/Equivalent Pass	Demonstration lecture	Formative and Summative Assessment
2	DSC A2 Fundamentals of Human Development	PO – 4 PO – 6 PO – 8	12+/Equivalent Pass		Formative and Summative Assessment
	OE-2 Teaching Materials for Early Childhood Education	PO- 1 PO- 3 PO- 8	12+/Equivalent Pass	Demonstration lecture	Formative and Summative Assessment

Syllabus for B.Sc. Home Science as Major Subject & B.Sc. (Hons)

B.SC. HOME SCIENCE

SEMESTER 1

Course Title: PRINCIPLES OF FOOD AND NUTRITION (DSC A1)							
Total Contact Hours: 60Hrs	Course Credits: 4						
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 3 Hrs						
Model Syllabus Authors:	Summative Assessment Marks: 60 marks						

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes: (COs)

At the end of the course the student should be able to:

- 1. Understand the role and functions of nutrients, their requirements and the effect of deficiency and excess.
- 2. Understand the concept of an adequate diet and the importance of meal planning for all agegroup

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand the role and functions of nutrients, their requirements and the effect of deficiency and excess	X		X						x			
Understand the concept of an adequate diet and the importance of meal planning for all age group			X	X							х	

B.SC. HOME SCIENCE

SEMESTER 1

Title of the Course: PRINCIPLES OF FOOD AND NUTRITION

Course : DSC A1	
Number of Theory Credits	Number of lecture hours/semester
4	60

CONTENT	60 Hrs.
Unit – 1 Introduction to Nutrition	12 Hrs
Chapter No. 1: Definition of nutrition, Malnutrition and Health, Functionsof food, Food groups -Types of food pyramids	6 Hrs
Chapter No. 2: Balanced diet - Meal planning – steps in meal planning	6 Hrs
Unit – 2 Nutrients	18 Hrs
Chapter No. 3: Nutrients Macro and Micro nutrients- classification, Sources, functions and deficiency. A. Carbohydrates, B. Proteins C. Fats D. Minerals – Calcium, Iron, Iodine. E. Vitamins – Fat soluble vitamins – A,D, E & K Water soluble vitamins – vitamin C Thiamine, Riboflavin, Niacin	15 Hrs
Chapter No. 4: A) Water – Functions, sources and water balance	
B) Fibre – Functions and sources,	
C) Energy – factors affecting BMR	3 Hrs
Unit – 3 Methods of Cooking	15 Hrs
Chapter No. 5. Methods of cooking- Advantages and disadvantages a) Water – Boiling, steaming, pressure cooking b) Oil/Fat – Shallow frying, deep frying c) Air – Baking	4 hrs
Chapter No. 6. Nutrition through lifecycle Nutritional requirement, dietary guidelines: Adulthood, Pregnancy, Lactation, Infancy -Complementary feeding, Pre-school, Adolescence, Old age.	11 hrs
Unit – 4 Food Preservation	15 Hrs
Chapter No. 7 - Food Preservation- Objectives and principles-Methods: dehydration, temperature regulation ,using preservatives like salt and sugar	8 hrs

Chapter No. 8 - Food Handling and storage - freezing thermal and non-thermal methods, Canning	7hrs
Unit – 4 Food Preservation	15 Hrs
Chapter No. 7 - Food Preservation- Objectives and principles-Methods: dehydration, temperature regulation, using preservatives like salt and sugar	8 hrs
Chapter No. 8 - Food Handling and storage - freezing thermal and non-thermal methods, Canning	7hrs

Formative Assessment = 100 marks								
Assessment Occasion /	Weightage in Marks							
Test 1	15							
Test 2	15							
Assignment + Project	5 + 5							
Total	60 marks + 40 marks = 100 marks							

Practical Course: 2 Credits 30 Hrs

List of Experiments to be conducted

Unit 1: a) Weights and Measures

b) Food pyramids

Unit 2: Methods of cooking

- a) Boiling, steaming
- b) Pressure cooking, shallow and deep fat Frying
- c) Dry heat -baking

Unit 3: Identification of nutrient rich foods and preparation of any three nutrient rich foods

Unit 4: Food preservation – salt, sugar and dehydration.

REFERENCES

- 1. Srilakshmi B, (2007), Dietetics. New Age International publishers. New Delhi
- 2. Srilakshmi B, (2002), Nutrition Science. New Age International publishers. New Delhi
- 3. Swaminathan M. (2002), Advanced text book on food and Nutrition. Volume I. Bappco.
- 4. Gopalan.C.,RamaSastry B.V., and S.C.Balasubramanian (2009), Nutritive value of Indian Foods.NIN.ICMR.Hyderabad.
- 5. Mudambi S R and Rajagopal M V, (2008), Fundamentals of Foods, Nutrition & diet therapy by New Age International Publishers, New Delhi

B.A/ B.Sc. HOME SCIENCE

SEMESTER 1

Course Title: FOOD PRESERVATION (OE1)							
Total Contact Hours: 45 Hrs	Course Credits: 3						
Formative Assessment Marks: 40 marks	Duration of ESA/Exam: 3 hrs						
Model Syllabus Authors:	Summative Assessment Marks : 60 marks						

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35%

Course Outcomes (COs):

At the end of the course the student should be able to:

- 1. Know the principles of preservation behind the methods of preservation
- 2. Understand the stages of sugar cookery, quality of pectin and acidity in the development of preserved food products
- 3. Acquire skills to formulate food based products
- 4. Explore the principles of preservation in fruits and vegetables based products
- 5. Skills to prepare cereals and pulse based preserved products and develop new products with retention of quality course

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / ProgramOutcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Know the principles of preservation behind the methods of preservation			х		Х							
Understand the stages of sugar cookery, quality of pectin and acidity in the development of preserved food products				X	X							
Acquire skills to formulate food based products							Х	Х				
Explore the principles of preservation in fruits and vegetables based products							х		Х			
Skills to prepare cereals and pulse based preserved products and develop new products with retentionof quality course					X		Х					

B.A/ B.Sc. HOME SCIENCE SEMESTER 1

Title of the Course: FOOD PRESERVATION

Course: OE 1							
Number of Theory Credits	Number of lecture hours/semester						
3	45						

CONTENT	45 Hrs				
Unit-I Concept of Food Preservation	10 Hrs				
Chapter No.1- Importance of Food Preservation, Types of Food spoilage by Microorganisms and by Enzymes, Basic Principles of Food Preservation Food preservatives- Use of Salt, Acid, Sugar, natural food preservatives and artificial preservatives					
Chapter No. 2- Starting a food preserving unit, Product Promotion strategies andmarketing skills	5 Hrs				
Unit-II Preparation of dehydrated products	20 Hrs				
Chapter No.3 Methods of drying & dehydration , different types of driers , freeze drying- lyophilization , packing & storage	5 Hrs				
Chapter No. 4- Drying methods for the selected products -Rice, Sago, Wheat, Maida, Rice flakes, black gram dhal, green gram dhal, Horse gram dhal Roots and Tubers. Preparation of salted, dehydrated, preserves (Traditional Indian varieties of chips, Papads, Khakharas etc and Masala Powders, onion, garlic, ginger powder etc.)	7 Hrs				
Chapter No. 5- Hands on experience :Drying of vegetables- peas, potato, carrot French beans, Reconstitution of dried vegetables, Drying & preparation of powders-garlic, ginger, spices mix etc	8 Hrs				
Unit -III Preservation by Using Sugar, Chemicals, Salts and Fermentation	15 Hrs				
Chapter No. 7 - Role of Pectin in Preserved foods, Stages in Sugar Cookery, Sugar Concentrates – Principles of Gel Formation.					
Hands on Experience: Preparation of Jam, Jelly, Marmalades, Sauce and Squash, Preserves, Candied, Glazed, Crystallized Fruits, Toffee, Evaluation of pH, Acidity and pectin quality, Preparation and Preservation of Fruit Juices, RTS					
Visit to Fruits and Vegetable processing industry					
Chapter No. 8 - Pickling – Principles Involved and Types of Pickles, Chemical Preservatives – Definition, Role of Preservation, Permitted Preservatives, FSSAI guidelines, Foods fermented by Yeasts and Bacteria, Wine and Cheese Making	3 Hrs				
Chapter No. 9 - Hands on experience: Pickle making, Visit to Commercial Pickle Manufacturing/ Food Industry / Wine industry	4 Hrs				

Formative Assessment = 100 marks						
Assessment Occasion / type	Weightage in Marks					
Test 1	15					
Test 2	15					
Assignment + Project	5 + 5					
3 Total	60 marks + 40 marks = 100 marks					

Reference:

- 1. Maney S (2008). Foods, Facts and Principles, 3 rd Edition Published by Wiley Eastern, New Delhi. Usha Chandrasekhar (2002) Food Science and Application in Indian Cookery, Phoenix Publishing House P. Ltd., New Delhi.
- Raina U, Kashyap S, Narula V, Thomas S Suvira, VirS, Chopra S (2010) Basic Food Preparation: A Complete Manual, 4th Edition, Orient Black Swan Ltd, Mumbai
- 3. Srivastava R.P. (2012), Fruit and vegetable preservation Principles and Practices, International Book Distributing Co., (IBDC), New Delhi.
- 4. Maria Parloa (2009), canned fruit, preserves and jellies: Household methods of preparation, US Department of Agriculture, Washington. 5
- 5. Shafiur, Rahman, M. (2007), Handbook of Food Preservation, 2 nd edition, CRC press, New Delhi

B.A./B. Sc. HOME SCIENCE SEMESTER 2

Course Title: Fundamentals of Human Development (DSC A2)							
Total Contact Hours: 60 Hrs.	Course Credits: 4						
Formative Assessment Marks: 40 marks	Duration of ESA / Exam: 3 hrs.						
Model Syllabus Authors:	Summative Assessment Marks: 60 marks						

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35% CourseOutcomes (COs):

At the end of the course the student should be able to:

- 1. Explain the need and the importance of studying human growth and development acrosslife span.
- 2. Identify the biological and environmental factors affecting human development.
- 3. Describe the characteristics, needs and developmental tasks of different stages in thehuman life cycle
- 4. Discuss the special features characteristic of each stage and its impact on the next stage
- 5. Explain the broad theoretical perspectives of different researchers.

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1- 12)

Course Outcomes (COs) / Program Outcomes (POs)		2	3	4	5	6	7	8	9	10	11	12
Explain the need for and importance of studying human growth and development across life span.		X		X	X						X	
Identify the biological and environmental factors affecting human development.								X	X		X	
Describe the characteristics, needs and developmental tasks of different stages in the human life cycle								X		Х		Х
Discuss the special features characteristic of each stage and its impact on the next stage			X	X								
Explain the broad theoretical perspectives of different researchers.			X	X					X			

B.A./B.Sc. HOME SCEINCE SEMESTER 2

Title of the Course: FUNDAMENTALS OF HUMAN DEVELOPMENT

Course : DSC A2	
Number of Theory Credits	Number of lecture hours/semester
4	60

CONTENT	60 Hrs			
Unit – 1 Introduction	20 Hrs			
Chapter No. 1 Human Development – Definition, needs, and Scope; Domains of Development:	3 Hrs			
Chapter No. 2 - Concept and principles of Growth and development; Factorsinfluencing growth and development.	5 Hrs			
Chapter No. 3 - Methods of studying Human development, Prenatal development	3 Hrs			
Chapter No. 4 - Fertilization, Pregnancy–Signs, Symptoms, Complications, Discomforts; Stages of Prenatal Development	5 Hrs			
Chapter No. 5 Child Birth - Process and types, Birth complications	4 Hrs			
Unit – 2 Infancy and Early childhood Years				
Chapter No. 6. Infancy - Definition, Significance, Developmental Tasks, and developmental milestones; Physical growth, reflexes and perceptual abilities, Immunization Schedule;				
Chapter No. 7. Early Childhood Years- Definition, Developmental tasks; physical, motor, intellectual, language, emotional, social developmental milestones. importance of preschool education and Significance of play for all-round development				
Chapter No. 8. Piaget's cognitive Theory and Erik Erickson's Personality Theory.				
Unit – 3 Middle Childhood Years				
Chapter No. 9 The Middle Childhood Years - Definition, Developmental tasks. Highlights of Physical, Social, Emotional, Intellectual development. Significance of school and functions; Importance of extra-curricular activities,				
Peers - Importance and Influence, Interest development				
Chapter No. 10 Role of Parents and Disciplinary Techniques; Role of siblings, peers and others in the development; Behavior problems	8 Hrs			

Formative Assessment = 100 marks							
Assessment Occasion / type	Weightage in Marks						
Test 1	15						
Test 2	15						
Assignment + Project	5 + 5						
3 Total	60 marks + 40 marks = 100 marks						

Practical: 2 Credits 60 Hrs

List of Experiments to be conducted

- 1. Prepare an album on the stages of prenatal development.
- 2. Organize a lecture/workshop for parents on importance of the nutrition/ Needs of preschool children.
- 3. Develop an activity to foster cognitive development in school children

Formative Assessment							
Assessment Occasion/ type	Weightage in Marks						
Test 1	15						
Test 2	15						
Assignment /Project	5+5						
Total	60 marks + 40 marks = 100 marks						

REFERENCES

- 1. Berk, L.E. (2005). Child development (5th ed.). New Delhi: Prentice Hall.
- 2. Bhangaokar, R.,&Kapadia, S. (in press). Human Development Research in India: A historical overview. In G. Misra (Ed.), Hundred years of Psychology in India. New Delhi:Springer.
- 3. Feldman, R., & Babu, N. (2009). Discovering the life span. New Delhi: Pearson
- 4. Kakar, S. (1998). The inner world. Psychoanalytic study of childhood and society in India. Delhi: Oxford University Press.
- 5. Kapadia, S. (2011). Psychology and human development in India. Country paper. International Society for the Study of Behavioural Development Bulletin Number 2, SerialNo. 60, pp.37-42.
- 6. Keenan, T., Evans, S., & Crowley, K. (2016). An introduction to Child development. Sage.
- 7. Lightfoot, C., Cole, M., & Cole, S. (2012). The development of children
- 8. (7thed.).NewYork: Worth Publishers.

- 9. Santrock, J. (2017). A topical approach to life span development (9th ed.). NewNY.:Mcgraw-Hill Higher Education.
- 10. Singh, A. (2015). Foundations of Human Development: A life span approach. ND: Orient Black Swan.
- 11. Walsh, B.A., Deflorio, L., Burnham, M.M., & Weiser, D.A. (2017). Introduction to Human Development and Family Studies. NY: Routledge
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- 14. Suriakanthi. A. (2015) 'Child Development' Kavitha Publications, Gandhigram, Tamil Nadu.

B.A./B.Sc. HOME SCIENCE SEMESTER - 2

Course Title: TEACHING MATERIALS FOR EARLY CHILDHOOD EDUCATION (OE 2)					
Total Contact Hours: 45 Hrs Course Credits: 3					
Formative Assessment Marks: 60 marks Duration of ESA/Exam: 3 Hrs					
Model Syllabus Authors:	Summative Assessment Marks: 40 marks				

Course Pre-requisite(s): Standard 12 and its equivalence with minimum 35% Course Outcomes (COs):

At the end of the course the student should be able to:

- 1. Understand the importance of teaching learning materials.
- 2. Understand the different teaching methods & materials for early years
- 3. Understand the different teaching methods & materials developmentally challenged children

Course Articulation Matrix: Mapping of Course Outcomes (COs) with Program Outcomes (POs 1-12)

Course Outcomes (COs) / Program Outcomes (POs)	1	2	3	4	5	6	7	8	9	10	11	12
Understand the importance of teaching learning materials		X		Х			X					
Understand the different teaching methods & materials for earlyyears			X				Х		X			
Understand the different teaching methods & materials Developmentally challenged children			X				X		X			

B.Sc. HOME SCIENCE SEMESTER 2

Title of the Course: TEACHING MATERIALS FOR EARLY CHILDHOOD EDUCATION

Course: OE 2	
Number of Theory Credits	Number of lecture hours/semester
3	45

CONTENT	45 Hrs
Chapter No. 1- Objectives of Teaching-Learning Materials, Orientation on different methods and materials used for teaching young children and studying the techniques of different methods.	15 Hrs
 The oral communication methods: (stories, songs, Music, description, explanation, etc.) and conversational methods (conversation, heuristic conversation, questioning on a special subject, etc.). 	
 Exploratory learning methods: direct exploration of objects and phenomena (systematic and independent observation, small experiments, etc.) and indirect exploration (demonstration through pictures, films, etc.). 	
 Methods based on the pupils' direct voluntary action (exercises, practical work, etc.) and simulated action (didactic games, learning through drama, etc.). 	
 Use of natural materials (plants, shells, seeds, insects, rocks, sand, etc.) 	
 Intuitive materials (cast and clay models, Puppets, blocks, puzzles, mazes,etc) 	
 Figurative aids (pictures, photographs, atlas books, maps, albums, table games, etc.) Printed teaching aids (children's books, workbooks, etc.). Printedteaching aids 	
Digital material (audio & videos)	

Unit-II – Development of Materials for Early years	13 Hrs
Chapter No. 2- Design and development of developmentally appropriate play materials to foster all round development in children using indigenous materials, Developing stories, songs with music and rhythm appropriate for infancy through early childhood Chapter No. 3 - Creative Activities - importance, Types and values promoted, method of giving instructions. Process of scripting for puppet playsand creative drama.	8 Hrs 5 Hrs
 a) Painting – free hand, finger, thread, wax resist &spray b) Printing -block, leaf, stencil, thumb c) Pasting – collage, paper mosaic, sand d) Miscellaneous-etching, marbling, dough modelling 	
Unit –III- Development of Materials for developmentally challengedchildren	12 Hrs
Chapter No. 4- Creating teaching learning materials for developmentally challenged children (Blind, Dumb & deaf, Learning disabilities, Speech disorders, Mentally retarded, Gifted children, Slow learners)	8 Hrs
Chapter No. 5 - Designing & developing digital play materials like videos, audio aids or audio- Visual aids	4 Hrs

Formative Assessment = 100 marks		
Assessment Occasion / type	Weightage in Marks	
Test 1	15	
Test 2	15	
Assignment + Project	5 + 5	
3 Total	60 marks + 40 marks = 100 marks	

Reference:

- 1. Contractor, M., 1984, Creative drama and puppetry in education, National book trust of India, Delhi
- 2. Devadas P. Rajammal and N. Jaya (1996), "A Textbook on child development", Mac Millan India Ltd. New Delhi.
- 3. Nasim Siddiqi, Suman Bhatia and Suptika Biswas (2007) Early Childhood Care and Education Book IV, DOABA HOUSE, New Delhi.
- 4. Sen Gupta, M. (2009). Early Childhood Care and Education. New Delhi: PHI Learning Pvt.Ltd.
- 5. Soni,R., 2015,Theme based early childhood care and education programme- A ResourceBook, NCERT.
