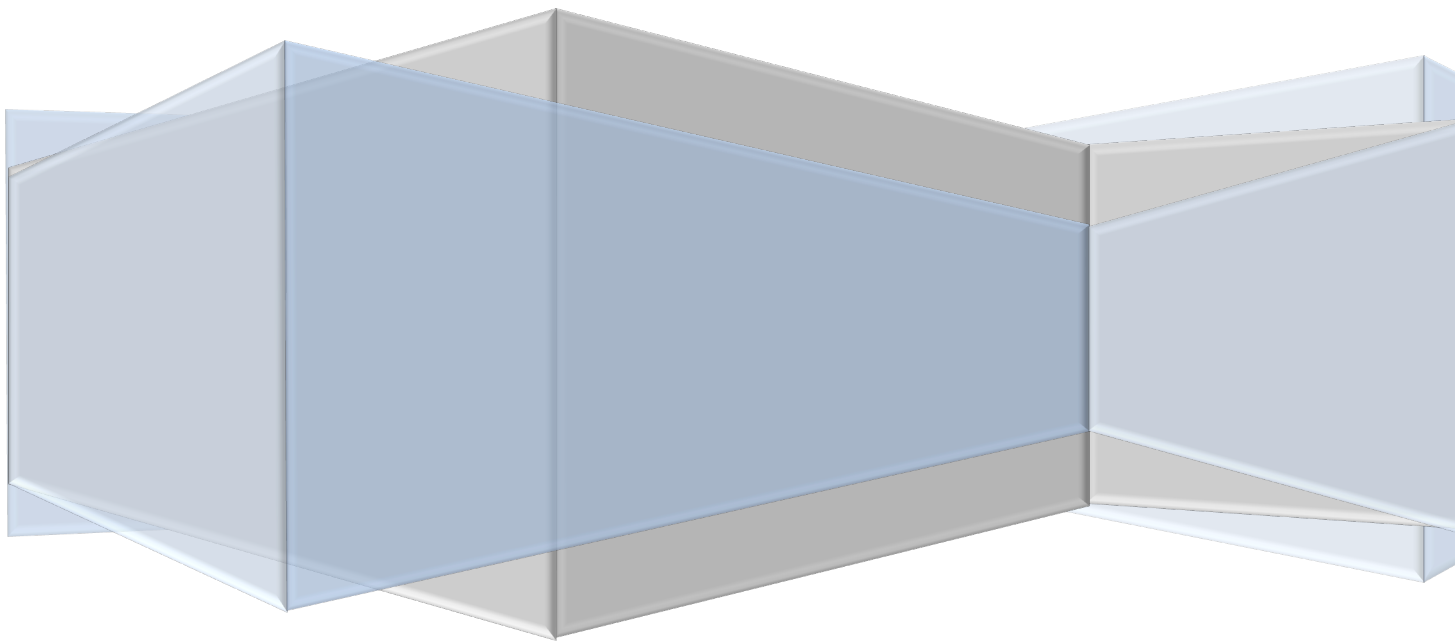


**Five Year Integrated B.Sc.
and M.Sc. Course in
Family and Community
Sciences**



**Five Year Integrated B.Sc. and M.Sc. Course in
Family and Community Sciences**

INTRODUCTION

Family and Community Sciences is both science and social science-art related multi-disciplinary field of study. Five year integrated program has been designed to integrate the application of sciences and humanities to empower students and therefore to improve the quality of life of individuals, family, community and nation. This 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 will help and build capacities for conducting primary research among the students. The curriculum has been structured to prepare the students 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, the art of writing and 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 will be socially responsible global citizens contributing to the overall development of the country.

The model curriculum presented has a multidisciplinary approach keeping the New Education Policy of 2020 in mind.

Learning Outcomes Descriptors and Programme Outcomes for a Bachelor's degree (Honours/ Honours with Research) or the Post- Graduate Diploma (Level 6)

Descriptor Knowledge and understanding: The graduates should be able to demonstrate the acquisition of:

- P.O. 1.** advanced knowledge about a specialized field of enquiry, with depth in one or more fields of learning within a broad multidisciplinary/ interdisciplinary context.
- P.O. 2.** a coherent understanding of the established methods and techniques of research and enquiry applicable to the chosen fields of learning.
- P.O. 3.** an awareness and knowledge of the emerging developments and issues in the chosen fields of learning,
- P.O. 4.** procedural knowledge required for performing and accomplishing professional tasks associated with the chosen fields of learning.

Descriptor General, technical and professional skills required to perform and accomplish tasks: The graduates should be able to demonstrate the acquisition of:

- P.O. 5.** a range of cognitive and technical skills required for performing and accomplishing complex tasks relating to the chosen fields of learning,
- P.O. 6.** cognitive and technical skills relating to the established research methods and techniques,
- P.O. 7.** cognitive and technical skills required to evaluate complex ideas and undertake research and investigations to generate solutions to real-life problems,
- P.O. 8.** generate solutions to complex problems independently, requiring the exercise of full personal judgement, responsibility, and accountability for the output of the initiatives taken as a practitioner.

Descriptor Application of knowledge and skills: The graduates should be able to demonstrate the ability to:

- P.O. 9.** apply the acquired advanced technical and/or theoretical knowledge and a range of cognitive and practical skills to analyze the quantitative and qualitative data gathered drawing on a wide range of sources for identifying problems and issues relating to the chosen fields of learning,
- P.O. 10.** apply advanced knowledge relating to research methods to carry out research and investigations to formulate evidence-based solutions to complex and unpredictable problems.

Descriptor Generic learning outcomes: The graduates should be able to demonstrate the ability to:

- P.O. 11.** listen carefully, read texts and research papers analytically, and present complex information in a clear and concise manner to different groups/ audiences,
- P.O. 12.** communicate technical information and explanations, and the findings/ results of the research studies relating to specialized fields of learning,
- P.O. 13.** present in a concise manner one's views on the relevance and applications of the findings of research and evaluation studies in the context of emerging developments and issues.
- P.O. 14.** meet own learning needs relating to the chosen fields of learning,
- P.O. 15.** pursue self-paced and self-directed learning to upgrade knowledge and skills that will help

accomplish complex tasks and pursue a higher level of education and research.

The graduates should be able to demonstrate:

- P.O. 16.** a keen sense of observation, enquiry, and capability for asking relevant/ appropriate questions,
- P.O. 17.** the ability to problematize, synthesize and articulate issues and design research proposals,
- P.O. 18.** the ability to define problems, formulate appropriate and relevant research questions, formulate hypotheses, test hypotheses using quantitative and qualitative data, establish hypotheses, make inferences based on the analysis and interpretation of data, and predict cause-and-effect relationships,
- P.O. 19.** the capacity to develop appropriate tools for data collection,
- P.O. 20.** the ability to plan, execute and report the results of an experiment or investigation,
- P.O. 21.** the ability to acquire the understanding of basic research ethics and skills in practicing/doing ethics in the field/ in own research work, regardless of the funding authority or field of study,
- P.O. 22.** examine and assess the implications and consequences of emerging developments and issues relating to the chosen fields of study based on empirical evidence.
- P.O. 23.** make judgement in a range of situations by critically reviewing and consolidating evidence,
- P.O. 24.** exercise judgement based on evaluation of evidence from a range of sources to generate solutions to complex problems, including real-life problems, associated with the chosen field(s) of learning requiring the exercise of full personal responsibility and accountability for the initiatives undertaken and the outputs/outcomes of own work as well as of the group as a team member.

Descriptor Constitutional, humanistic, ethical, and moral values: The graduates should be able to demonstrate the willingness and ability to:

- P.O. 25.** Embrace and practice constitutional, humanistic, ethical, and moral values in life.
- P.O. 26.** adopt objective, unbiased, and truthful actions in all aspects of work related to the chosen field(s) of learning and professional practice.
- P.O. 27.** present coherent arguments in support of relevant ethical and moral issues.
- P.O. 28.** participate in actions to address environmental and sustainable development issues.
- P.O. 29.** follow ethical practices in all aspects of research and development, including avoiding unethical practices such as fabrication, falsification, or misrepresentation of data or committing plagiarism.

Descriptor Employability and job-ready skills, and entrepreneurship skills and capabilities/ qualities and mindset: The graduates should be able to demonstrate the acquisition of knowledge and skill sets required for:

- P.O. 30.** adapting to the future of work and to the demands of the fast pace of technological developments and innovations that drive a shift in employers' demands for skills, particularly with respect to the transition towards more technology-assisted work involving the creation of new forms of work and rapidly changing work and production processes.
- P.O. 31.** managing complex technical or professional activities or projects, requiring the exercise of

full personal responsibility for the output of own work as well as for the outputs of the group as a member of the group/team.

P.O. 32. exercising supervision in the context of work having unpredictable changes.

Programme Specific Outcomes of Integrated Course of Family and Community Sciences

1. Help formulate graduate attributes, qualification descriptors, programme and course learning outcomes that are expected to be demonstrated by the holder of a qualification,
2. Enable prospective students, parents, employers and others to understand the nature and level of learning outcomes (knowledge, skills, attitude and values) or attributes a graduate of a programme should be capable of demonstrating on successful completion of the programme of study,
3. Maintain national standards and international comparability of learning outcomes and academic standards to ensure global competitiveness, and to facilitate student/graduate mobility,
4. Provide higher education institutions an important point of reference for designing teaching-learning strategies, assessing student learning levels, and periodic review of programmes and academic standards.

STRUCTURE OF FIVE YEAR INTEGRATED COURSE

CREDIT STRUCTURE

SEMESTER- I

S. No.	Course Code	Course Title	L	T	P	Credit	Int.	Ext.
THEORY								
1.		Nation Building / Linguistics	2	0	1	3	40	60
2.	SEC-1	Choice as per electives offered				3	40	60
3.	FCS101	Basics of Nutrition	2	0	1	3	40	60
4.	FCS102	Fundamentals of Human Development-I	2	0	1	3	40	60
5.	FCS103	Introduction to Textiles	2	0	1	3	40	60
6.		Lab / Practical work		0		7	40	60
TOTAL						22		

SEMESTER-II

S. No.	Course Code	Course Title	L	T	P	Credit	Int.	Ext.
THEORY								
1.		Nation Building / Linguistics	2	0	1	3	40	60
2.	SEC-2	Choice as per electives offered				3	40	60
3.	FCS104	Introduction to Resource Management	2	0	1	3	40	60
4.	FCS105	Communication & Extension	2	0	1	3	40	60
5.	FCS106	Fundamentals of Human Physiology	2	0	1	3	40	60
6.		Lab / Practical Work				7	40	60
TOTAL						22		

SEMESTER-III

S. No.	Course Code	Course Title	L	T	P	Credit	Int.	Ext.
THEORY								
1.	FCS107	Basics of Food Science	2	0	1	3	40	60
2.	FCS108	Fundamental of Human Development-II	2	0	1	3	40	60
3.	FCS109	Fundamentals of Clothing Construction	1	0	2	3	40	60
4.	FCS110	Resource Management: Concepts & Contexts	2	0	1	3	40	60
5.	FCS111	Communication Theory	2	0	1	3	40	60
6.		Lab / Practical work				7	40	60
TOTAL						22		

SEMESTER-IV

S. No.	Course Code	Course Title	L	T	P	Credit	Int.	Ext.
THEORY								
1.	FCS112	Participatory Program Management	2	0	1	3	40	60
2.	FCS113	Early Childhood Education	2	0	1	3	40	60
3.	FCS114	Fundamental of Fashion Illustration	1	0	2	3	40	60
4.	FCS115	Applied Chemistry	2	0	1	3	40	60
5.	FCS116	Community Nutrition	2	0	1	3	40	60
6.		Lab / Practical work				7	40	60
TOTAL						22		

SEMESTER-V

S. No.	Course Code	Course Title	L	T	P	Credit	Int.	Ext.
THEORY								
1.	FCS117	Family Meal Management	2	0	1	3	40	60
2.	FCS118	Early Childhood Education in India- Socio-cultural Contexts	2	0	1	3	40	60
3.	FCS119	Fabric Construction Techniques	2	0	1	3	40	60
4.	FCS120	Family Finance	2	0	1	3	40	60
5.	DSE-I (Any One Course)	FCS121	2	0	1	3	40	60
		FCS122	2	0	1			
		FCS123	2	0	1			
		FCS124	2	0	1			
6.		Lab / Practical work				6	40	60
7.		Field Visit / Educational Tour				1		
TOTAL						22		

SEMESTER-VI

S. No.	Course Code	Course Title	L	T	P	Credit	Int.	Ext.
THEORY								
1.	FCS125	Nutritional Biochemistry	2	0	1	3	40	60
2.	FCS126	Dying & Printing of Textiles	2	0	1	3	40	60
3.	FCS127	Developmental Challenges in Children	2	0	1	3	40	60
4.	FCS128	Consumer Behavior	2	0	1	3	40	60
5.	DSE-II (Any One Course)	FCS129	2	0	1	3	40	60
		FCS130	2	0	1			
		FCS131	2	0	1			
		FCS132	2	0	1			
6.		Lab / Practical work				7	40	60
TOTAL						22		

SEMESTER-VII

S. No.	Course Code	Course Title	L	T	P	Credit	Int.	Ext.
THEORY								
1.	FCS133	Research Methodology	2	0	0	2	40	60
2.	DSE-III (Any One Course)	FCS134	2	0	1	3	40	60
		FCS135	2	0	1			
		FCS136	2	0	1			
		FCS137	2	0	1			
3.	DSE-IV (Any One Course)	FCS138	2	0	1	3	40	60
		FCS139	2	0	1			
		FCS140	2	0	1			
4.	DSE-V (Any One Course)	FCS141	2	0	1	3	40	60
		FCS142	2	0	1			
		FCS143	1	0	2			

5.		Colloquium				2	40	60
6.		Educational Tour / Field Visit				2	40	60
7.		Lab / Practical Work				7	40	60
TOTAL						22		

SEMESTER-VIII

S. No.	Course Code	Course Title	L	T	P	Credit	Int.	Ext.
THEORY								
1.	FCS144	Dissertation / Project				22	40	60
TOTAL						22		

SEMESTER-IX

S. No.	Course Code	Course Title	L	T	P	Credit	Int.	Ext.
THEORY								
1.	FCS145	Children with disabilities	2	0	1	3	40	60
2.	FCS146	Development Communication	2	0	1	3	40	60
3.	FCS147	Institutional Food Management	3	0	0	3	40	60
4.	FCS148	Scientific Writing	3	0	0	3	40	60
5.	DSE-VI (Any One Course)	FCS149 Law Policy & Program for women & Children	2	0	1	3	40	60
		FCS150 Instrumentation in Nutrition	3	0	0			
		FCS151 Entrepreneurship Management	2	0	1			
6.		Lab / Practical work				7	40	60
TOTAL						22		

SEMESTER-X

S. No.	Course Code	Course Title	L	T	P	Credit	Int.	Ext.
THEORY								
1.	FCS152	Advanced Human Nutrition	2	0	1	3	40	60
2.	FCS153	Fashion Retailing & Merchandising	3	0	0	3	40	60
3.	DSE-VII (Any One Course)	FCS154 Counseling for Child Development	2	0	1	3	40	60
		FCS155 Techniques of Food Preservation	0	0	3			
		FCS156 Textile Testing	2	0	1			
4.	DSE-VIII (Any One Course)	FCS157 Skills for working with Children	2	0	1	3	40	60
		FCS158 Hygiene and Disease	3	0	0			
		FCS159 Range Development	1	0	2			
5.		Lab / Practical work / Project				10	40	60
TOTAL						22		

SEMESTER-I

Course Code: FCS101

Basics of Nutrition

(Credits: Theory-2, Practical-1)

Course Description:

Fundamentals of human nutrition enable students to understand and think critically about the complex interrelationships between food, nutrition, health, and environment. The course “basic nutrition” aims at the learning of normal nutrition related to physical development and health for all ages of the life cycle. This course emphasizes the function of nutrients and their requirements, digestion, absorption, and metabolism including the chemistry of macronutrients and micronutrients, their absorption, storage, and metabolism. Nutrition course curricula also covers the nutritional information, dietary advice, and food safety information for better utilisation.

Course Objectives:

- Understand the vital link between foods, nutrition, and health.
- Enumerate the sources and functions of the different macro and micro nutrients.
- Understand the relation of the nutritional requirements in terms of recommended dietary allowances (RDA) to nutrition and health.
- Gain knowledge on functions, requirements, and effects of deficiency of nutrients
- To understand the term BMI, BMR and energy balance.
- To understand the energy value of food and various method to calculate it

Course Outcomes:

On successful completion of this course will enable students to

- To explain the vital link between foods, nutrition, health, functions, requirements and the effects of deficiency of nutrients
- Summarize and discuss the sources and functions of the different macro and micro nutrients.
- Able to relate the nutritional requirements in terms of recommended dietary allowances (RDAs) to nutrition and health.

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry

PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Explain link between food, nutrition, health, and nutrient deficiency.
CO2	Summarize sources and functions of nutrients.
CO3	Relate nutritional requirements to health and RDA.
CO4	Describe energy, BMI, BMR, and energy balance.
CO5	Apply knowledge to design balanced diets.

CO-PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	2	2	1	3
CO2	3	2	3	2	3	2	2	1	2
CO3	3	2	3	3	3	2	2	1	3
CO4	3	2	3	3	3	2	2	1	3
CO5	3	3	3	3	3	3	3	2	3

Unit-I: Introduction of Nutrition Science, Food Groups, Food Pyramid Balanced Diet

- Definition and terms used in Food Science and Nutrition
- Definition, Classification and Functions of Foods, Basic Food Groups and Need for Grouping Foods and Application of Food Groups in Planning Adequate/Balanced Diets

Unit –II: Energy

- Conceptual understanding of Energy and its Units
- Measurement of Energy:
 - BMR
 - RMR
 - Thermic Effect of feeding and physical activity RDA

Unit-III: Macronutrients

Types Source, Function, Dietary requirements of:

- Carbohydrates
- Proteins
- Lipids

Unit- IV: Vitamins

- Types, sources, functions, Dietary requirements, Deficiency and Toxicity of:
 - Fat Soluble vitamins
 - Water soluble vitamins

Unit- V: Minerals

- Type, source, functions, Dietary requirements, Deficiency of:
 - Macro minerals: Calcium, magnesium, sodium, potassium
 - Micro Minerals: Iron, Zinc, Magnese, iodine
 - Tace minerals: Selenium, cobalt, Chromium

Practical:

1. Classify foods on the basis of nutrition, protein, Iron, calcium, vitamin A, vitamin C.
2. Measurement of Energy and BMR through different methods.
3. List sign and symptoms of different deficiency diseases.

References:

1. Maney S (2008). *Foods, Facts and Principles*, 3rd Edition Published by Wiley Eastern, New Delhi.
2. Usha Chandrasekhar (2002) *Food Science and Application in Indian Cookery*, Phoenix Publishing House P. Ltd., New Delhi.
3. 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.
4. Srilakshmi, B. (2017) *Nutrition Science*, New Age International (P) Ltd., New Delhi,.
5. Mahtab, S. Bamji, Kamala Krishnasamy, Brahmam G.N.V (2012) *Text Book of Human Nutrition*, Third Edition, Oxford and IBH Publishing Co. P. Ltd., New Delhi.

6. SunetraRoday (2017). *Food Science and Nutrition*, Oxford University Press, New Delhi.
7. Longvah, T, Ananthan, R., Bhaskarachary, K., Venkaiah, K (2017). *Indian Food Composition Tables (IFCT)*, Indian Council of Medical Research, National Institute of Nutrition, Hyderabad.

Course Code: FCS102

Fundamentals of Human Development-I

(Credits: Theory -2, Practical-1)

Course Description:

The course introduces students to the concept of human development by explaining about the evolution and history of the field of Human Development. It then moves on to discuss the various schools of thought that gave rise to different theoretical frameworks to understand human development. It gives us an overview of the various psychosocial, cognitive, social and learning theories of human development. It also explains basic developmental principles and factors like heredity and environment which influence growth and development.

Course Objectives:

- Develop an understanding about the history and future of the field of Human Development
- Learn about the principles of growth and development
- Understanding the debates, issues and various perspectives in human development
- Understand the different theoretical frameworks fundamental to Human Development and Family studies
- Learn about the human development theories

Course Outcomes:

- Explain the need and importance of studying human growth and development and the scope of human development
- Explain the debates, issues and various perspectives in human development
- Identify the biological and environmental factors affecting human development.
- Explain the broad theoretical perspectives and frameworks of HDFs
- Apply the theoretical approaches to work with human being across life span

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
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PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Explain the importance and scope of studying human growth and development.
CO2	Discuss debates, issues, and perspectives in human development.
CO3	Identify biological and environmental factors affecting development.
CO4	Describe major theoretical frameworks of Human Development and Family Studies.
CO5	Apply theoretical approaches to work with humans across the lifespan.

CO–PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	2	2	2	1	2
CO2	3	2	3	2	2	2	2	1	2
CO3	3	2	3	3	3	2	2	1	3
CO4	3	2	3	3	3	2	2	1	3
CO5	3	3	3	3	3	3	3	2	3

Unit-I: History and Evolution of the Field of HDFS (Human Development and Family studies)

- Who is a child? What is development?
- History and future of the field of Human Development
- Focus and scope of the discipline of HDFS
- Growth and development – concepts, determinants and principles
- Principles of growth and development

Unit-II: Debates and issues in Human Development

- Nature vs. nurture
- Continuity vs. discontinuity
- Organismic vs. Mechanistic
- Stability vs. change
- Early vs. Later experience

Unit-III: Perspectives in HDFS

- The Life Span perspective
- Humanistic perspective
- Evolutionary perspective
- Symbolic Interaction
- Systems

Unit-IV: Theoretical Frameworks and Theories

- Biological-maturational
- Environmental learning
- Constructivist
- Culture-contextual

Unit-V: Overview of theories of human development

- Freud's theory of psychosexual development
- Erikson's theory of psychosocial development
- Piaget's theory of cognitive development
- *Bronfenbrenner's* ecological systems theory
- Vygotsky's Socio-cultural theory
- Learning theories (Watson, Skinner, Bandura)

Practical:

1. Prepare an album on the principles of growth and development.
2. Prepare an album on debates in human development

3. Prepare an album outlining the theories of any three theorists
4. Visit to an Anganwadi/ old age homes to understand the various theoretical frameworks.

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, Serial No. 60, pp.37-42*.
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7. Lightfoot, C., Cole, M., & Cole, S. (2012). *The development of children* (7th ed.). New York: Worth Publishers.
8. Santrock, J. (2017). *A topical approach to life span development* (9th ed.). New NY.: Mcgraw-Hill Higher Education.
9. Singh, A. (2015). *Foundations of Human Development: A life span approach*. ND: Orient Black Swan.
10. Walsh, B.A., Deflorio, L., Burnham, M.M., & Weiser, D.A. (2017). *Introduction to Human Development and Family Studies*. NY: Routledge

Course Code: FCS103

INTRODUCTION TO TEXTILES

(Credits: Theory-2, Practical-1)

Course Description:

An introduction to textiles course covers the fundamental classification of the textiles along with the physical analysis of the fibre and yarn of different textiles. The course is designed to help the students understand the basics of textiles, the processes and technology used for manufacturing it. It explains about the properties and end uses of fibre, yarn, fabric and there co-relation. The course is based on systematic dissemination of textile science information followed by practical experiments for the students in the areas of identification of textiles.

Course Objectives:

- Obtain a broad understanding of textiles
- Develop understanding of technical terms involved in textiles.
- Get acquainted with the properties and uses of various textile fibres.
- Develop the skills for identification of fibres
- Understand different types of yarns
- Acquire knowledge of methods of laundry and stain removal.

Course Outcomes:

- Develop an understanding of concepts and basics of textiles.
- Understands and define the key textile terms.
- Develop critical understanding of the techniques of yarn
- Identify the fibres and yarn for its appropriate use.

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning

PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Understand basic concepts and classification of textiles.
CO2	Define key textile terms and identify properties of different fibres.
CO3	Analyze techniques and processes involved in yarn and fabric formation.
CO4	Identify various textile fibres and yarns for appropriate end-use.
CO5	Apply knowledge of textile care, laundry methods, and stain removal.

CO-PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	2	2	1	2
CO2	3	2	3	2	3	2	2	1	2
CO3	3	2	3	3	3	2	2	1	3
CO4	3	2	3	3	3	2	2	1	3
CO5	3	3	3	3	3	3	3	2	3

Unit-I. Introduction to Textiles

- Definition of textile fibres and terminology
- Classification of textile fibres
- Basic unit and polymer bonds in textile fibre
- Primary and secondary properties of textile fibre.
- Physical and Chemical properties of fibre.

Unit-II: Natural Fibres

- Natural fibres (Molecular structure, production, properties and end uses)
 - Cellulosic (Cotton, Jute), Linen, other minor cellulosic fibre.
 - Protein (Silk, Wool), speciality hair fibre.

Unit-III: Man-made fibres

- Man-made fibres (Polymer system Manufacturing process, chemical spinning, properties and end uses)
 - Nylon
 - Polyester
 - Acrylic

- Rayon and others

Unit-IV: Spinning & Yarn

- Yarns
 - Classification of yarns: simple, ply and cord
 - Types of Yarn: Textured and novelty
 - Twist in yarn: “s” and “z”, number of twist
 - Properties of yarn: strength, extension, fineness, length, diameter, composition.
 - Blending

Unit-V. Laundry, storage and care of textiles

- Introduction, Types, Uses
- Water, Soaps, Detergents
- Methods and care during laundering of different textiles

Practical:

1. Fibre identification: Identification of natural and manmade fibres by following three methods i.e. microscopic test, burning test and solubility test.
2. Study of different types of Yarn
3. Care of Textiles
 - a. Stain removal
 - b. Starching using different types of starches

References:

1. Booth, J.E. (1996). *Principles of Textile Testing*. New Delhi: CBS Publishers & Distributors Pvt. Ltd.
2. Corbman, P.B. (1983). *Textiles: Fibre to Fabric*. McGraw-Hill Publishers.
3. Collier, B.J., & Epps, H.H. (1998). *Textile testing and analysis*. Prentice Hall Publishers.
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5. D’Souza, N. (2014). *Fabric Care*. New Delhi: New Age International Publishers.
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11. Madhulika, P. (2013). *Weaving*. New Delhi: Random Publishing.
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SEMESTER-II

Course Code: FCS104
Introduction to Resource Management
(Credits: Theory-2, Practical-1)

Course Description:

Resources and their management is the ultimate goal of all families. The Course introduces the conceptual and contextual meaning of resources. Presenting optimal initiatives and equipping students with appreciable management acumen to imbibe the contexts in their family system and the environment is the major scope.

Course Objectives:

- Learning to identify and manage the use of resources available for functional use
- Comprehending the purpose of managing resources.

Course Outcomes:

- Understanding on the concepts related to family resource management
- Appreciation of the significance of management process in efficient use of resources

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Understand fundamental concepts and scope of family resource management.
CO2	Explain approaches and ethical principles involved in managing resources.
CO3	Describe theories of motivation and their role

	in management decisions.
CO4	Identify types, characteristics, and factors influencing resource utilization.
CO5	Apply strategies for resource optimization and conservation.

CO-PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	2	2	1	2
CO2	3	2	3	2	3	2	2	1	2
CO3	3	2	3	3	3	2	2	1	3
CO4	3	2	3	3	3	2	2	1	3
CO5	3	3	3	3	3	3	3	2	3

Unit-I: Introduction to Resource Management in Family Settings

- Introduction to home management- meaning, definitions, conceptual framework, need and philosophy
- Concept, definition, universality and scope of family resource management

Unit-II: Approaches to resource management

- Ethics in management of resources- essential qualities for success
- Motivating factors in management- Values, Standards and Goals- meaning, types/classification and influences

Unit-III: Theories of Motivation

- Maslow's hierarchy of needs theory; human wants – nature and role in management

Unit-IV: Resources:

- Concept, classification and characteristics of family resources
- Factors affecting utilization of family resources

Unit-V: Maximizing use of resources and resource conservation

- Natural resources: renewable and non – renewable resources, methods of harnessing renewable resources for residential use.

Practical:

1. Comprehend and rewrite on values held and goals set – different age groups
2. Harnessing natural resources: model making – solar devices, windmills, rainwater harvesting, water conservation measures
3. Conservation of community and natural resources for optimization: Portfolio

References:

1. Bhargava, B. (2005). *Family Resource Management and Interior Decoration*, Jaipur: Apple Printer and V. R. Printers
2. Deacon, R. F., and Firebaugh, F.M. (1975). *Home Management: Contexts and Concepts*. Boston: Houghton Mifflin Company.
3. Fitzsimmons, C. (1950). *The Management of Family Resources*. California: W. H. Freeman Co.
4. Gandotra, V., and Jaiswal, N. (2008). *Management of Work in Home*, New Delhi: Dominant Publishers and Distributors. (ISBN No. 81-7888-526-3)
5. Grandjean, E., and Kroemer, K.H.E. (1999). *Fitting the Task to the Human - A Text Book of Occupational Ergonomics*, New York: Taylor and Francis

Course Code: FCS105
COMMUNICATION AND EXTENSION
(Credits: Theory-2, Practical-1)

Course Description:

The Course introduces to the students the concept of Communication and Extension. It will orient the students with creation, transmission and application of knowledge designed to bring out planned changes in the behavior of people. Communication is an exciting and challenging field of human interaction.

Course Objectives:

- Understand the concept of Communication and its role in exchange of information
- Learn about the concept of extension and extension approaches.
- Enhance the students in the selection and use of media in different socio-cultural environment.

Course Outcomes:

- Gain knowledge on the need and importance of communication and its significance in exchange of information
- Perceive the importance of extension education
- Acquire knowledge on the extension approaches

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Understand the concept, role, and importance of communication in society.

CO2	Explain different types, patterns, and elements of communication.
CO3	Identify suitable media and approaches for effective communication in various contexts.
CO4	Demonstrate knowledge of extension principles, methods, and systems.
CO5	Apply communication and extension strategies for social and behavioral change.

CO–PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	2	2	2	2	2	2	2
CO2	3	3	3	2	2	2	2	2	2
CO3	3	3	3	3	3	2	2	2	3
CO4	3	3	3	3	3	2	2	2	3
CO5	3	3	3	3	3	3	3	3	3

Unit-I: Communication Concept

- Meaning, definition, nature, scope and importance of communication
- Functions of communication – information function, command or instructive function, influence or persuasive function and integrative function.
- Elements of Communication – three elements – source, message, receiver, four elements – encoding, decoding, sender and receiver, five elements – communicator, communicate, message, channel and feedback

Unit-II: Types of Communication

- Means of Communication – Oral, Written, Sign / signal, action, object
- Types of Communication – Formal and Informal Communication
- Pattern - one way, two way, circular

Unit-III: Communication and Media

- Communication media – Print and electronic media
- Advantages and Limitations of communication media

Unit-IV: Effective Communication

- Characteristics- Clear, correct, complete and precise message, reliability, consideration of therecipient

- Skills- Observance, clarity and Brevity, Listening and Understanding, self-efficacy and selfconfidence
- Significance- Team work, Team building, problem solving and decision making skills, facilitate creativity and reduces misunderstanding
- Concepts relating to communication– perception, fidelity, communication gap, Empathy, Homophily, heterophily

Unit-V: Communication and Extension

- Concept, need, functions, principles and scope of extension
- Steps in extension teaching
- Elements of extension communication system
- Communication methods in extension – group method, mass method and individual method
- Advantages and limitations of communication and extension

Practical:

1. Apply communication theory in the implementation of programme
2. Interaction with villagers and understand the felt and unfelt need
3. Carryout a case study using any one extension approach

References:

1. Dahama, O.P and Bhatnagar O.P. (1995). Education and Communication for Development. New Delhi: Oxford and IBH Co.
2. Gupta, D. (2007). Development Communication in Rural Sector. New Delhi: Mukhopadhyay Abhijeet Publication
3. Nisha, M. (2006). Understanding Extension Education. New Delhi: Kalpay Publications
4. Reddy, A.A. (2001). Extension Education. Bapatla: Sri Lakshmi Press
5. Rogers Everett, M. (2003). Diffusion of Innovations, 5th Ed. New York: The Free Press
6. Singh, U.K and Nayak, A.K. (2007). Extension Education. New Delhi: Common Wealth Publishers
7. Wilson, M.C., and Gallup, G. (1955). Extension Teaching Methods. Washington: US Department of Agriculture

Course Code: FCS106
Fundamentals of Human Physiology
(Credits: Theory-2, Practical-1)

Course Description:

This course aims to develop understanding of how the human body functions in terms of human physiological systems from the cellular levels to the human body as a whole. Further course focuses on measurement of human responses to internal and external stimuli and applies this knowledge to the promotion of human health.

Course Objectives:

- Obtain an insight into the structure and functions of cells, tissues and organs in human body
- Understand the anatomy and physiology of the various systems in the human body
- Comprehend the functions of systems of the human body
- Gain knowledge on endocrine, nervous and reproductive System

Course Outcomes:

- Gain the basic knowledge of human anatomy and physiology.
- Define the main structures composing human body.
- Explain structure and functions of cells, tissues and organs ,systems of the human body
- Relate structure and functions of tissue.
- Provide excellent preparation for careers in the health professions and/or biomedical research.

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Understand the structure and function of cells, tissues, and organ systems.
CO2	Explain the anatomy and physiology of major systems in the human body.
CO3	Relate the functioning of various systems to homeostasis and health.
CO4	Demonstrate knowledge of endocrine, nervous, and reproductive systems.
CO5	Apply physiological knowledge in health-related professions and research contexts.

CO-PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	2	2	1	3
CO2	3	2	3	2	3	2	2	1	3
CO3	3	2	3	3	3	2	2	1	3
CO4	3	2	3	3	3	2	2	1	3
CO5	3	3	3	3	3	3	3	2	3

Unit-I: Introduction to Human Body

- Basic concepts of organs, tissue and cell,
- Cell structure, cellular organelle and their functions,
- Blood- Composition, blood groups and Functions,
- Structure and Functions of lymph System

Unit-II: Cardiovascular System, Circulatory Systems and Respiratory Systems

Cardiovascular System

- Structure and functions of heart
- Properties of Cardiac Muscle and Functional Tissues

Respiratory System

- Physiological Anatomy of Respiratory Tract
- Mechanism of Respiration

Unit-III: Digestive System and Excretory Systems

Digestive System

- Principal organs of the digestive system – Mouth, tongue, Teeth, Esophagus, Stomach, Small Intestine, Large Intestine, Rectum, Anus- structure & function
- Principal accessory organs- salivary glands, liver, gall bladder, pancreas- structure & function
- Role of gut hormones & enzymes in digestion and mechanisms involved in absorption of food

Excretory System

- Structure of Excretory System- Kidney, Nephron, Urinary Bladder
- Urine Formation, Composition of Urine, micturition, Glomerular Filtration Rate(GFR)

Unit-IV: Endocrine, Nervous and Reproductive System

Endocrine Systems

- Introduction to Endocrinology
- Functions and Hormones secreted by:
 - Pituitary Gland
 - Thyroid Gland
 - Parathyroid Gland
 - Adrenal Gland
 - Sex Gland
- Endocrine Functions of Pancreas.

Nervous System

- Structure and functions of Neuron, Brain and Central nervous system(Autonomic Nervous System, Parasympathetic Nervous System).

Unit-V: Reproductive System

- Structure, hormones secreted and functions of Male and Female Reproductive Organs
- Physiology of Menstruation - estrogen verses progesterone

Practical:

1. Microscope and its uses.
2. Observations of epithelial, connective, muscular and nervous tissues through permanent slides.
3. Demonstration of Body systems through Models.

4. Determinations of Blood pressure by Sphygmomanometer.
5. Detection of Blood group (Slide method).
6. Urine related tests.
7. Measurement of Haemoglobin levels.

References:

1. Chatterjee C.C (2016), *Human Physiology Volume I*, Medical Allied Agency, Kolkata
2. Chatterjee C.C (2004), *Human Physiology Volume II*, Medical Allied Agency, Kolkata.
3. Sembulingam, K. (2000) *Essentials of Medical Physiology*, Jaypee Brothers Medical Publishers
4. (P) Ltd., New Delhi
5. Chaudhri, K. (1993) *Concise Medical Physiology*, New Central Book Agency (Parental) Ltd., Calcutta.
6. Kathleen J. W. Wilson, Anne Waugh, Allison Grant. Ross and Wilson Anatomy (2014), *Physiology in Health and Illness*. 12th Edition, Elsevier Publication, New Delhi

SEMESTER-III

Course Code: FCS107
BASICS OF FOOD SCIENCE

(Credits: Theory-2; Practical-1)

Course Description:

The course “Basics of Food Science” aims at developing the basic understanding of food and nutrition; it’s the effect on human health and newer advances in food technology. This course encompasses the physiological, biochemical and social aspects of food and discusses the relationship between metabolites and human health. Moreover, the Course is focused on the advances in the most emerging area of applied food science and provides a detailed insight into understanding the composition and structure of different food groups. The knowledge and skills helps to utilize food and nutrients as the powerful tools for physical, mental and social well-being.

Course objectives:

- Study the different methods of cooking foods
- Obtain knowledge of different food groups, their composition and nutrients present in the foods.
- Understand the vital link between foods, nutrition and health
- Gain knowledge on functions, requirements and effects of deficiency of nutrients

Course outcomes:

A successful completion of this course will enable students to:

- Summarize critically discuss and understand both fundamental and applied aspects of food Science and nutrition.
- Able to explain functions of specific nutrients in maintaining health
- Identifying nutrient specific force and apply the principles from the various factors of foods and related disciplines to solve practical as well as Real world problems
- Use current information Technologies to locate and apply evidence-based guidelines and protocol and get imported with critical thinking to take leadership roles in the field of health, diet special nutritional needs and nutritional counselling.

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Explain fundamental and applied aspects of food science and nutrition.
CO2	Discuss the functions of specific nutrients in maintaining health.
CO3	Apply principles of food science to solve real-world problems.
CO4	Use evidence-based information to address special nutritional needs.
CO5	Demonstrate leadership and critical thinking in food science and diet planning.

CO-PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	2	2	1	3
CO2	3	2	3	2	3	2	2	1	3
CO3	3	2	3	3	3	2	2	1	3
CO4	3	2	3	3	3	2	2	1	3
CO5	3	3	3	3	3	3	3	2	3

Unit-I: Culinary terms and Methods of Cooking

- An Overview of culinary terms
- Different Modes of heat transfer like Radiation, Conduction and Convection
- Moist heat methods like Boiling, Simmering, Poaching, Steaming, Pressure cooking
- Dry heat methods: Air as medium of cooking: Grilling, broiling, roasting, Baking ,
- Fat as medium of cooking: Sautéing, Shallow fat frying, Deep fat frying
- Combined (Moist and dry) Methods: Braising, Stewing
- Other cooking methods:-Microwave cooking, and Solar cooking.

- Advantages and Disadvantages of Cooking methods

Unit-II: Nutritional Significance of Cereals, Pulses and legumes

Basic Concepts, classification, composition, nutritive value and Role in Cookery

- Cereals and Cereal Products- a.) Types of cereals: wheat, rice, millets, b) Cereal Products- Flaked rice, puffed rice, wheat flour) Principles and properties of Cereals and its utility: Germination (Amylase Rich Foods- ARF), fermentation, Parboiling, Gelatinization, Dextrinization, Gluten formation)
- Pulses and Legumes
- Fruits, and Vegetables,

Unit-III: Nutritional Significance of fruits and vegetables

- Definition and Classification of vegetables
- Composition and Nutritive value of vegetables
- Storage of vegetables
- Definition and classification of fruits
- Composition and Nutritive values of fruits
- Storage of fruits
- Effect of cooking on fruits and vegetables

Unit-IV: Nutritional Significance of Milk and Milk products and Meat and Meat products

- Milk and Milk Products: including Fortified milk & its importance
- Eggs-Basic structure of an egg and biological value, Quality evaluation and grading of eggs
- Meat, poultry and fish
- Spices & Condiments -Importance and functional properties.

Unit-V: Nutritional Significance of:

- Nutritive value and properties of sugar
- Sugar cooking
- Composition and Nutritive value of Fats and Oils
- Redefining and processing of Fats

- Ranciding
- Effect of heating on Fats and Oils

Practical:

1. Market survey of locally available food items like cereals, pulses, fruits and vegetables, milk and milk products, fats and oils, nuts and oilseeds, sugar and jaggery, meat, fish, and poultry and miscellaneous food items like biscuits, jams, jellies, ketchup etc. and their cost
2. Classify foods on the basis of nutrients:-Protein, Iron, Calcium, Vitamin A, Vitamin C
3. Controlling techniques: Weights and measures - standard and household measures for raw and cooked foods
4. Weights and Measures, Determination of Edible Portion of Foods, preparing market order and table setting
5. Food Preparation, understanding the principles involved, nutritional quality and portion size of 5-7 commonly consumed recipes in each food group

References:

1. Maney S (2008). *Foods, Facts and Principles*, 3rd Edition Published by Wiley Eastern, New Delhi.
2. Usha Chandrasekhar (2002) *Food Science and Application in Indian Cookery*, Phoenix Publishing House P. Ltd., New Delhi.
3. 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.
4. Srilakshmi, B. (2017) *Nutrition Science*, New Age International (P) Ltd., New Delhi,.

5. Mahtab, S. Bamji, Kamala Krishnasamy, Brahman G.N.V (2012) *Text Book of Human Nutrition*, Third Edition, Oxford and IBH Publishing Co. P. Ltd., New Delhi.
6. Sunetra Roday (2017). *Food Science and Nutrition*, Oxford University Press, New Delhi.
7. Longvah, T, Ananthan, R., Bhaskarachary, K., Venkaiah, K (2017). *Indian Food Composition Tables (IFCT)*, Indian Council of Medical Research, National Institute of Nutrition, Hyderabad.

Course Code: FCS108

FUNDAMENTALS OF HUMAN DEVELOPMENT-II

(Credits: Theory-2, Practical-1)

Course Description:

The course introduces students to the concept of human development by discussing about the various Indian thinkers that gave rise to different theoretical frameworks to understand human development. It explains prenatal development and the birth process and provides an overview of the different stages in the human life cycle starting from conception to old age. It further discusses the principles of working with human beings and methods of studying human development. It also helps the students to develop a professional attitude towards working with human being and explore career opportunities in human development.

Course Objectives:

- Learn about the concept of child development by studying about the different Indian Thinkers on Child Development
- Understand prenatal development and the birth process
- Learn about the characteristics, needs and developmental tasks of different stages in the human life cycle
- Develop professional attitude for working with human beings across life span and exploring career opportunities in Human Development

Course Outcomes:

- Explain the need and importance of studying human growth and development across life span.
- Identify the biological and environmental factors affecting prenatal development.
- Describe the characteristics, needs and developmental tasks of different stages in the human life cycle
- Apply the theoretical approaches to work with human being across life span
- Becoming Human development professionals in various domains of life

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Explain the patterns and principles of growth and development across different life stages.
CO2	Describe the physical, cognitive, emotional, and social development during childhood and adolescence.
CO3	Analyze major developmental tasks and challenges during adulthood and old age.
CO4	Interpret the influence of family, culture, and environment on human development.
CO5	Apply developmental theories and knowledge in professional and social contexts.

CO-PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	2	2	1	2
CO2	3	2	3	2	3	2	2	1	2
CO3	3	2	3	3	3	2	2	1	3
CO4	3	2	3	3	3	2	2	1	3
CO5	3	3	3	3	3	3	3	2	3

Unit-I: Indian Thinkers (selected) on Child Development

- Mahatma Gandhi
- Rabindranath Tagore
- Jiddu Krishnamurti
- Gijubhai Badeka and Tarabai Modak
- Hansa Mehta
- Amita Verma

- Sarojini Naidu
- Mina Swaminathan

Unit- II: Prenatal Development and Birth Process

- Prenatal Development – stages, factors affecting prenatal development, diagnostics techniques
- Birth Process
- Stages of birth
- Types of delivery (natural, c-section, breech, home vs. assisted delivery)
- Immediate care of newborn, adjustments made by newborn, types of feeding - natural and artificial, weaning, infant and mother mortality and morbidity, immunization schedule.

Unit-III: Stages in the Human Life Cycle: An Overview

- Characteristics, needs and developmental tasks of individuals in relation to physical, cognitive, socio- emotional domains of development in the following life stages:
- Neonate (birth-1 month)
- Infancy (1 month-2 years)
- Early childhood (2-6 years)
- Middle childhood (6-12 years)
- Adolescence (12-19 years)
- Emerging and Young adulthood (19-40 years)
- Middle age / mature adulthood (40-65 years)
- Late adulthood / Old age (65 years and above)

Unit-IV: Professional Skills for working with Human Beings

- Research Methods
- Case study, interview, naturalistic observation, laboratory observation experimental methods, cross sectional and longitudinal and sequential studies
- Ethics of research with human subjects – written consent, privacy, no harm, no plagiarism, debriefing

Unit-V: Self-awareness and contextual sensitivity

- Building professional attitudes
- Understanding development in different contexts and circumstances
- Developing contextual sensitivity and preparation for field experiences
- Personal and Professional issues involved in a career as HDFS professional (Identify entry level jobs, career path and job tasks/requirements)

Practical:

1. Carry out case studies to know more about the different life stages, e.g., school going children, adolescents, middle adults.
2. Engaging in games and activities that enhance self-understanding in building professional skills.
3. Observations of infant child rearing practices in families from different social classes.
4. Interviews of adolescent girls and boys to understand their life style and behaviour based on gender and socio-economic status

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, Serial No. 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* (7th ed.). New York: Worth Publishers.
8. Santrock, J. (2017). *A topical approach to life span development* (9th ed.). New NY.: McGraw-Hill Higher Education.
9. Singh, A. (2015). *Foundations of Human Development: A life span approach*. ND: Orient Black Swan.

10. Walsh, B.A., Deflorio, L., Burnham, M.M., & Weiser, D.A. (2017). *Introduction to Human Development and Family Studies*. NY: Routledge

Course Code: FCS109

FUNDAMENTALS OF CLOTHING CONSTRUCTION

(Credits: Theory-1, Practical-2)

Course Description:

The course provides basic principles for clothing manufacturing techniques. It is designed to develop knowledge of tools and equipments used in clothing construction. It deals with different types of seams and seam finishes. It further explains about the selection and use of sewing equipment. The knowledge of fundamentals of clothing construction will enable the students to make sound decisions related to material resources through the application of clothing construction and application skills. This will prepare students for advanced studies and professional employment in the areas of clothing and textiles.

Course Objectives:

- Develop an understanding about the basics of clothing construction
- Learn about the principles involved in clothing construction.
- Know about various sewing equipment that are essential in a sewing room.
- Learns to construct samples of different seams ,seam finishes, fullness.

Course Outcomes:

A successful completion of this course will enable students to

- Understand basic principles of clothing construction.
- Comprehend the importance and function of clothes.
- Utilize design components in garment construction
- Gain an insight of various sewing machines and other sewing equipment's available in the market, their functioning & common problems faced while usage.
- Understand various garment construction process.
- Co-ordinates fabrics, patterns and supportive materials

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills

PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Understand basic tools, equipment, and terms used in clothing construction.
CO2	Explain the properties and selection of fabrics for garment making.
CO3	Demonstrate skills in basic hand and machine stitches used in construction.
CO4	Apply principles of drafting, pattern making, and garment construction.
CO5	Evaluate the fit, finish, and quality of constructed garments.

CO-PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	2	2	1	2
CO2	3	2	3	2	3	2	2	1	2
CO3	3	2	3	3	3	2	2	1	3
CO4	3	2	3	3	3	2	2	1	3
CO5	3	3	3	3	3	3	3	2	3

Unit-I: Introduction

- History of Clothing.
- Functions and theories of clothing

Unit-II: Sewing Machines

- Types of sewing machines
 - Mechanical Sewing Machine.
 - Electronic Sewing Machine.
 - Computerized or Automated Sewing Machine.
 - Embroidery Machine.
- Parts of sewing machine
 - Types and function
 - Maintenance
 - Common problems and its remedies.

Unit-III: Tools and Equipments

- Tools and equipment used for clothing construction
- Measuring tool
- Marking tool
- Cutting tool
- Stitching tool
- Finishing tool

Unit-IV: Stitches, seams and seams finishes

- Temporary stitches
- Permanent stitches
- Different types of seams.
- Different types of seams finishes
- Fullness, placket, neckline, fastners

Unit-V: Socio Psychological Aspects of Clothing

- Factors affecting selection of clothing.
- Selection of fabric for different purposes and family clothing.

Practical:

1. Preparation of fabric for cutting
 - a. Preshrinking
 - b. Identification and straightening of grain.
2. Tools and Equipment used in Garment Construction: Squares and Scales, French curves – for armhole, necklines etc.
3. Preparing sample of Basic hand stitches
4. Preparing sample of Seams finishes
5. Preparing sample of Fullness
 - a. Darts-Single point, Fish dart
 - b. Tucks- Pin tucks, wide tucks, corded tucks, crossed tucks
 - c. Pleats- Knife, box, inverted box, accordion pleat
 - d. Gathers – Hand and machine

- e. Shirring
- f. Ruffles and frills
- 6. Neckline finishes- Binding and facing
- 7. Plackets: Faced and continuous bound
- 8. Snap button and fastener attachment
- 9. Basic hand embroidery

References:

1. Armstrong, Pearson. (1995), Pattern making for Fashion Design, Fairchild Publication, New York 1995 (Indian Ed.)
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3. Dorothy wood, the practical encyclopaedia of sewing, Anneess publishing Ltd, London.
4. Holman, Gillian. (1997), Pattern Cutting Made Easy, BSP.
5. Janace E. Bubonia. (2012), Apparel production terms and processes, Fairchild Books, New York.
6. Kallal, Mary Jo, (1985), Clothing Construction, Mc Millan Publishing Company, New York.
7. Norma Hollen, Jane Saddler, Anna L. Langford & Sara, J.,(1988) Textiles 6th ed., Macmillan Publication, New York
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10. Thomas, A, (1986), the Art of Sewing UBSPD Publishers Distributors Ltd. New Delhi.

Course Code: FCS110

RESOURCE MANAGEMENT: CONCEPTS AND CONTEXTS

(Credits: Theory-2, Practical-1)

Course Description:

Resources and their management is the ultimate goal of all families. The Course introduces the resource management in micro level family settings in the changing world in a simple format with experiential learning to the learners. Presenting optimal initiatives and equipping students with appreciable management acumen to imbibe the contexts in their family system and the environment is the major scope.

Course Objectives:

- Setting realistic goals and being practical and prudent in the use and management of limited resources by making intelligent decisions
- Becoming money, time and energy conscious in daily living

Course Outcomes:

- Imbibing nuances of human values and standards for successful management and decision making
- Focus on management of human energy as a family resource

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Explain the meaning, importance, and scope

	of resource management in family and community contexts.
CO2	Discuss key concepts, principles, and approaches of effective resource management.
CO3	Identify and classify different types of resources and their characteristics.
CO4	Analyze the factors influencing resource planning, allocation, and utilization.
CO5	Apply resource management concepts to improve quality of life and sustainable living.

CO–PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	2	2	1	2
CO2	3	2	3	2	3	2	2	1	2
CO3	3	2	3	3	3	2	2	1	3
CO4	3	2	3	3	3	2	2	1	3
CO5	3	3	3	3	3	3	3	2	3

Unit-I: Functions of Management: An Overview

- Decision Making- the crux of management, Types of decisions; factors of control, role of values, standards and goals in decision making process

Unit-II: Management Process

- Management process: Definitions and steps in management process: Planning, Controlling, Organizing and Evaluation

Unit-III: Managing Resources for Family

- Significance of managing resources of the family
- Relation of Family Resource Management to other areas of Family and Community Sciences.

Unit-IV: Resource Management Process

- Management process applicable to specific resources:

- Money- sources of income, meaning of income and expenditure, steps in money management, Budgeting- budget items, methods of handling money
- Time – concept of time schedule, time norms and peak loads
- Energy – Types of effort (Manual, pedal, visual etc)., Concept of body posture, drudgery and fatigue, fatiguing activities, classification of activities (sedentary, moderate and heavy), use of labour saving devices in management of time and energy, methods of alleviating fatigue

Unit-V: Work Simplification

- Principles of Work simplification, Mundel's Classes of Change, time and motion studies, working heights at different levels

Practical:

1. Preparation of time plans for self and family
2. Drafting family budget for different income groups
3. Time and Motion Studies for simplifying work- Flow process chart etc
4. Trial experiments on time and energy management using different household appliances
5. Determining working heights for different individuals at different levels

References:

1. Gross.I.H., Crandall, E. W. and Knoll, M. M.(1980). *Management for Modern Families*. New Jersey: Prentice Hall Inc. terling Publishers.
2. Koontz, H., and O'Donnel C. (2005), *Management – A Systems and Contingency Analysis of Managerial Functions*. New York: McGraw-Hill Book Company
3. Nickell, P., Rice, A. S., and Tucker, S.P. (1976).*Management in Family Living*. New York: John Wiley& Sons Inc
4. Rao V.S.P., and Narayana P.S. (2008). *Principles and Practices of Management*. New Delhi: Konark Publishers Pvt. Ltd.(ISBN 13: 9788122000283)
5. Seetharaman, P., Batra, S., &Mehra, P. (2005). *An Introduction to Family Resource Management*. New Delhi: CBS Publishers & Distributors (ISBN 13: 9788123911861)

6. Shukul, M., and Gandotra, V . (2006). *Home Management and Family Finance*. New Delhi: Dominant Publishers and Distributors.(ISBN No. 81-7888-403-8)
7. Singh, S. (2007). *Ergonomics Integration for Health and Productivity*. New Delhi/ Udaipur: Himanshu Publication
8. Swanson, B. (1983). *Introduction to Home Management*. New York: Macmillan Publishing Co. Inc.
9. Varghese, M. A., Ogale. N. and Srinivasan K. (1985). *Home Management*. New Delhi: New Age International (P) Limited, Publishers (ISBN 13: 9780852269046)

Course Code: FCS111
COMMUNICATION THEORY
(Credits: Theory-2, Practical-1)

Course Description

The Course introduces to the students the concept of Communication Theory. It will orient the students with creation, transmission and application of knowledge designed to bring out planned changes in the behavior of people. Communication is an exciting and challenging field of human interaction.

Course Objectives

- Understand the concept of communication and its role in exchange of information
- Examine the models and barriers to communication
- Learn about the communication theory

Course Outcomes

- Gain knowledge on the need and importance of communication and its significance in exchange of information
- Analyse the models of communication and role of media in societal development
- Acquire knowledge on communication theory.

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Explain fundamental communication concepts, models, and processes.
CO2	Discuss different types, channels, and

	functions of communication.
CO3	Analyze major communication theories and their relevance to society.
CO4	Apply communication theories to real-world contexts and media practices.
CO5	Evaluate communication effectiveness and develop strategic messages.

CO–PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	3	2	2	3	2	2	2	2
CO2	3	3	3	2	3	2	2	2	2
CO3	3	3	3	3	3	2	2	2	3
CO4	3	3	3	3	3	3	2	2	3
CO5	3	3	3	3	3	3	3	3	3

Unit- I: Communication

- Definition and scope of communication
- Process and functions of communication
- Verbal and non-verbal communication
- Types of communication: intrapersonal, inter personal, group communication and mass communication.

Unit-II: Communication Models

- Models of Communication-Aristotle Model, Shanon – Weaver Mode, Berlo Model, ScharmmModel
- Barriers to Communication – semantic, psychological, organizational and personal

Unit-III: Extension Models and Approaches

- Models- Innovation transfer model,
- Social education model,
- Indigenization model,
- Socialaction/conscientation models,
- Empowerment participation model,
- Combination models

Unit-IV: Normative Media Theories

- Normative media theories: Authoritarian, Libertarian, Social responsibility, Soviet media theory,

Unit-V: Development Media Theory

- Development media theory,
- Democratic participant theory. McLuhanism, Magic bullet theory,
- Agenda Setting Theory, cognitive dissonance theory, concept of selectivity, framing theory, media credibility, cultural integration and cultural pollutions

Practical:

1. Application of language theory in the different process of communication

References:

1. Dahama, O.P and Bhatnagar O.P. (1995). Education and Communication for Development. New Delhi: Oxford and IBH Co.
2. Gupta, D. (2007). Development Communication in Rural Sector. New Delhi: Mukhopadhyay Abhijeet Publication
3. Nisha, M. (2006). Understanding Extension Education. New Delhi: Kalpay Publications
4. Reddy, A.A. (2001). Extension Education. Bapatla: Sri Lakshmi Press
5. Rogers Everett, M. (2003). Diffusion of Innovations, 5th Ed. New York: The Free Press
6. Singh, U.K and Nayak, A.K. (2007). Extension Education. New Delhi: Common Wealth Publishers
7. Wilson, M.C., and Gallup, G. (1955). Extension Teaching Methods. Washington: US Department of Agriculture

SEMESTER-IV

Course Code: FCS112
PARTICIPATORY PROGRAMME MANAGEMENT
(Credits: Theory-2, Practical-1)

Course Description:

This Course is extended to equip the students with both specialized knowledge and practical skills in participatory project planning, monitoring and impact. Improving strategic thinking and decision making skills of students in planning, implementing and evaluating various programmes related to developmental sector is further envisaged.

Course Objectives:

- Understand the concept and process of programme planning
- Comprehend PRA techniques adopted in the villages to locate local resources
- Learn the Characteristics, tools and techniques of evaluation and recording
- Gain knowledge on project management techniques

Course outcomes:

- Understand programme planning and related models
- Identify the needs of the community and develop programmes
- Analyze techniques of implementing a programme
- Examine assessment of programmes and documentation.

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Explain the concepts, principles, and importance of participatory development.
CO2	Describe various participatory approaches, methods, and tools in programme planning.
CO3	Analyze the stages and strategies of participatory programme management.
CO4	Apply participatory techniques in planning, implementation, and evaluation of programmes.
CO5	Demonstrate leadership, teamwork, and decision-making skills in participatory settings.

CO-PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	3	2	2	2
CO2	3	2	3	2	3	3	2	2	2
CO3	3	2	3	3	3	3	2	2	3
CO4	3	3	3	3	3	3	3	3	3
CO5	3	3	3	3	3	3	3	3	3

Unit-I: Concept of Extension Programme Planning

- Meaning, nature, scope and principle of programme planning
- Elements, functions and criteria for developing a plan
- Importance of planned change
- Programme development cycle and its components

Unit-II: Participatory Planning

- Importance of peoples' participation in programme planning.
- Formation of Self Help Groups.
- Principles, methods, tools and techniques of PRA and application of PRA methods in field studies.
- Supportive techniques – secondary sources, direct observation, and semi structured interviews, case studies and stories, drama, games, role play, scenario, workshops, triangulation, continuous analysis and reporting.
- Presentation techniques – Ranking, scoring and diagrammatic

Unit-III: Project Management Techniques

- Project management techniques

- Strength, weakness, opportunity and challenges (SWOC)
- Network analysis –critical path method (CPM), Programme (project) Management and Review Technique (PERT)
- Training personnel in PRA techniques

Unit-IV: Extension Evaluation and Follow up

- Definition, nature, types, purpose and characteristics of evaluation
- Phases, tools and techniques of evaluation, uses of evaluation
- Need and methods of follow up

Unit-V: Documentation

- Need for reporting and recording
- Types of records
- Analysis and document preparation
- Procedures for recording – records and registers to be maintained
- Training personnel in PRA techniques, project management, evaluation and documentation.

Practical:

1. Critical review of evaluation studies on women and rural development programmes.
2. Analysis of monitoring and evaluation of developmental programmes.
3. Preparation and implementation of home improvement work plan.
4. Organizing and evaluating programmes for women and children at village level.

References:

1. Bandarkar, P.I. and T.S. (2000). Methodology and Techniques of Social Research. Mumbai: Himalaya Publishing House
2. Dhama, O.P, and Bhatnagar O.P. (1991) Communication for Development. New Delhi: Oxford & IBH Publishing Co. Pvt. Ltd
3. Narayanaswamy, N. (2009). Participatory Rural Appraisal: Principles, Methods and Applications. New Delhi: Saga Publications
4. Neeta Mekherjee. (1997). Participatory Rural Appraisal: Methodology and Applications. New

Delhi: Concept Publishing Company

5. Pankajam, G. (2000). Extension-Third Dimension of Education. New Delhi: Gyam Publishing House
6. Prasanna,C.(1980). Project Planning, Appraisal, Budgeting and implementation. NewDelhi: Tata Megow Hill Publishing Company Ltd
7. Ray, G.L. (2015). Extension Communication and Management. Ludhiyana: Kalyan Publishers.
8. Sandhu, A.S. (2015). Extension Programme Planning. New Delhi: Oxford & IBH Publishing Co.Pvt.Ltd

Course Code: FCS113

EARLY CHILDHOOD EDUCATION

(Credits: Theory-2, Practical-1)

Course Description:

This course explores the range of issues related to Early Childhood Care and Education (ECCE). The focus of the course is on understanding the importance of early years and early interventions. The course further aims to familiarize students with indigenous (Indian) models of ECCE, pedagogical approaches and programmatic trends as they evolved in the Indian context.

Course Objectives:

- Know the importance of early childhood years and significance of intervention programs for early childhood development.
- Familiarize with indigenous (Indian) models of Early Childhood Education and explore the current early childhood research, theoretical trends and issues.
- To learn about different curriculum models and pedagogical approaches in early childhood education.
- Understand the role of play in the early childhood development of children
- Impart knowledge on programme planning for young children.
- Develop insight into the historical developments – global and Indian including the current programs and policies in ECCE.
- Develop awareness of ECCE programs in different contexts in India.

Course Outcomes:

- Explain the importance of early childhood years and significance of intervention programs for early childhood development.
- Describe the historical developments – global and Indian including the current programs and policies in ECCE.
- Identify various indigenous (Indian) models of Early Childhood Education and apply it to understand the current early childhood research, theoretical trends and issues.

- Analyse curriculum models and pedagogical approaches in early childhood education.
- Create developmentally appropriate programs for young children.

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Explain the aims, principles, and significance of early childhood education.
CO2	Describe stages of early childhood development and their educational implications.
CO3	Discuss curriculum planning, teaching methods, and learning environments for young children.
CO4	Analyze policies, programmes, and institutions supporting early childhood education.
CO5	Apply child-centered approaches to promote holistic development and learning.

CO–PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	3	2	1	2
CO2	3	2	3	2	3	3	2	1	2
CO3	3	2	3	3	3	3	2	2	3
CO4	3	2	3	3	3	3	2	2	3
CO5	3	3	3	3	3	3	3	3	3

Unit-I: Introduction to Early Childhood Care Education (ECCE)

- Concept, meaning, scope and significance of ECCE
 - Developmental perspective

- Neuroscience perspective
- Human rights perspective

Unit-II: Expansion from ECE to ECCE to ECD

- Aims and objectives of ECCE– General and specific
- Types of ECCE service delivery – Formal and informal; Government funded, Philosophy oriented, Laboratory nursery school, Franchise oriented

Unit-III: Early Childhood Curriculum

- Definition and concept of curriculum
- Curriculum approaches – subject centred, learner centred, community centred
- Developmentally Appropriate Practice (DAP) – definition and core considerations, myths and consequences of developmentally inappropriate ECE practices
- Components and essential features of developmentally appropriate ECCE curriculum
- Planning a developmentally appropriate curriculum- approaches, key principles and types of plans

Unit-IV: Play and its importance

- Play and its characteristics
- Theories of play-surplus energy theory, recreational theory, recapitulation theory
- Stages and types of play
- Role of play in overall development of children
- Teacher's role in creating environment and promoting play
- Use of play way approach in the curriculum for young children

Unit-V: Innovative ECCE Models

- Nutan Bal Shikshan Sangh, India
- Daxinamurti Bal Mandir, India
- Gram Bal Shikshan Kendra, India
- Lok Jumbish Program, India
- Mirambika, India

- Reggio Emilia Approach, Italy
- TeWhariki Model, New Zealand

Practical:

1. Planning developmentally appropriate curriculum for young children and list the activities for each domain to promote all round development in young children.
2. Develop an album on the types of play and the role of play in the overall development of children.
3. Prepare an album on the types of nursery school in the light of the innovative ECCE models
4. Observation of early childhood programs at government and non-governmental institutions.

References:

1. Agarwal, J. C. (2007). *Early childhood care and education: principles and practices*. New Delhi: Shipra
2. Agarwal, S.P. and Usmani, M. (2000). *Children's education in India: from vedic times to twenty first century* New Delhi: Shipra.
3. Canning, N. (2010) *Play and practice in the early years: Foundation stage*. New Delhi: Sage.
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5. Fler, M. (2010). *Early learning and development: Cultural–historical concepts in play*. Cambridge: Cambridge University Press.
6. Kaul, V. (2009). *Early childhood education programme*. National Council of Educational Research and Training, New Delhi
7. OECD. (2004). *Curricula and pedagogies in early childhood education and care*. Retrieved from <http://www.oecd.org/education/school/31672150.pdf>

- 8.Purkait, B.R. (2005). *Milestones in modern Indian education*. Kolkata: New Central Book Agency.
- 9.Swaminathan, M.(ed.) (1998).*Thefirstfive years: A critical perspectives onearly childhood care and education in India*. New Delhi: Sage.
- 10.Sarangapani, P.M. (2009). Quality, feasibility and desirability of low cost private schooling: what is the evidence? *Economic & Political Weekly*, 44(43), 67–69.

Course Code: FCS114

FUNDAMENTALS OF FASHION ILLUSTRATION

(Credits: Theory – 1, Practical – 2)

Course Description:

It prepares students for a career in fashion illustration related fields through the exploration of a wide range of traditional and contemporary approaches to drawing and image creation. They will develop their drawing skills and experiment with different medium and have the opportunity to learn a wide range of illustrations and visual communication skills. Individual interpretation and creative drawing skills are emphasized.

Course Objectives:

- Students will learn drawing of fashion postures with garments, fabric textures and their presentation.
- Students will understand the basics of fashion sketching and communicating fashion ideas through drawing.

Course Outcomes:

- After mastering the female croquis, students will learn to draw female croquis in various fashion postures.
- Various types of fabrics are rendered with different techniques and color medium.

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Understand the principles and importance of fashion illustration in the design process.
CO2	Demonstrate basic drawing skills including proportions, anatomy, and garment rendering.
CO3	Apply color theory, texture, and fabric representation techniques in illustrations.
CO4	Create fashion sketches and storyboards to

	communicate design ideas effectively.
CO5	Develop a portfolio showcasing creativity and professional illustration skills.

CO–PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	2	2	1	2
CO2	3	2	3	2	3	2	2	1	2
CO3	3	2	3	3	3	2	2	1	3
CO4	3	3	3	3	3	2	2	2	3
CO5	3	3	3	3	3	3	3	2	3

Unit-I : Fashion Terminology

- Fashion
- Style
- Classic
- Fad
- Trends
- Design etc.

Unit-II: Textile Motifs and Classifications

- Different types of motifs
 - Natural
 - Geometrical
 - Stylized
 - Abstract
 - Ethnic etc.
- Placement of motifs

Unit-III : Elements of Design

- Line
- Form/Shape
- Space
- Texture
- Color
 - Prang's Color Theory
 - Munsell Color Theory
 - Knowledge of Tint, Tone & Shade

Unit-IV: Principle of Design

- Balance
- Harmony
- Rhythm
- Emphasis
- Proportion

Unit-V: Garments and Accessories

- Different types of
 - Pant
 - Skirt
 - Silhouette
 - Accessories

Practical:

1. Review of Fashion Illustration
2. Fashion Illustration
3. Front view
4. Back View
5. $\frac{3}{4}$ view
6. Side view
7. Different Postures
 - a. Ethnic Dresses
 - b. Casual Dresses
 - c. Ready to wear dresses
 - d. Accessories
 - e. Rendering of denims, net, velvet and other flowy fabrics.

References:

1. Darek Brazeil- Becoming a successful illustrator
2. Zeegan Lawrence – Illustrations
3. Dr. Sushma Gupta, Neeru Garg & Renu Saini - Textbook of Clothing and Textiles
4. Anne Allen and Julion Seama – Fashion Drawing: The Basic Principles
5. Rita Gersten – Innovative Fashion Sketching

Course Code: FCS115
APPLIED CHEMISTRY
(Credits: Theory-2, Practical-1)

Course description:

The course “Applied Chemistry” aims at developing the basic understanding of introduction, origin, role and source of organic compounds. It combines pharmacology, chemistry, and biology to investigate health, illness, and pharmacological therapy.

Course objectives:

- Obtain an insight into classification, nomenclature and purification of organic compounds.
- Obtain knowledge of preparation, properties and uses of different organic compounds.
- Develop an understanding of the basic terms and concepts related to pesticides, drugs and medicines used at home.

Course Outcomes:

- Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in Analytical, Inorganic, Organic and Applied Chemistries.
- Students will be able to explore new areas of research in both chemistry and allied fields of science and technology.
- Students will appreciate the central role of chemistry in our society and use this as a basis for ethical behaviour in issues facing chemists including an understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.
- Students will be able to explain why chemistry is an integral activity for addressing social, economic, and environmental problems.
- Students will be able to function as a member of an interdisciplinary problem solving team.
- Students will be able to design and carry out scientific experiments as well as accurately

record and analyse the results of such experiments.

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Explain fundamental chemical principles relevant to everyday life and applied sciences.
CO2	Describe the structure, properties, and reactions of organic and inorganic compounds.
CO3	Apply chemical knowledge to food science, textiles, environment, and health.
CO4	Perform basic chemical calculations and interpret experimental data.
CO5	Demonstrate safe laboratory practices and ethical responsibilities in chemistry-related work.

CO-PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	2	2	1	3
CO2	3	2	3	2	3	2	2	1	3
CO3	3	2	3	3	3	2	2	1	3
CO4	3	2	3	3	3	2	2	1	3
CO5	3	3	3	3	3	3	3	2	3

Unit-I: Chemistry- Introduction, origin, role and source of organic compounds

- Classification, nomenclature and purification of organic compounds. Empirical, molecular and structural formulae of organic compounds.

Unit-II: Alcohol and Ethers

- **Alcohol:** Preparation, properties and uses of glycol and glycerol. Fermentation.
- **Ethers:** Preparation, properties and uses of diethyl ether.

Unit-III: Esters and Acids

- **Esters:** Preparation, Properties and uses of ethyl acetate, Saponification of oils and fats.
- **Acids:** Preparation, properties and uses of formic acid, acetic acid and oxalic acid.

Unit-IV: Amines and Carbohydrates

- **Amines:** Primary, secondary and tertiary amines.
- **Carbohydrates:** Classification, properties and configuration of glucose, fructose, galactose.

Unit-V: Household Chemistry

- Study of some common pesticides and their use in the home.
- Metals and their Alloys in Household Use: Iron, gold, silver, aluminium, copper and steel.

Practical:

1.Qualitative Analysis of Organic Compounds: Test for following compounds and their Identification:

- i. Alcohol: Methanol and Ethanol
- ii. Acids: Formic acid, Acetic acid, Oxalic acid and Citric acid
- iii. Carbohydrates: Glucose, Fructose, Sucrose, Lactose and Starch.

2.Quantitative Analysis of biochemical compounds:

- i. Draw a calibration graph for fructose using resorcinol reagent
- ii. Estimation of amino acid by formal titration
- iii. Estimation of protein calorimetrically
- iv. Estimation of glucose in the biological sample
- v. Estimation of vitamin in the biological sample

References:

1. Srivastava H.C. (2013). Nootan ISC Chemistry Class XI, 7th edition, Nageen Prakashan Pvt. Ltd.
2. Srivastava H.C. (2013). Nootan ISC Chemistry Class XII, 7th edition, Nageen Prakashan Pvt. Ltd.
3. Tandon O.P., Virmani A.K. (2018). A Textbook of Organic Chemistry for NEET, GRB Publishers
4. NCERT (2006). NCERT Chemistry Class 11&12, National Council of Education Research and Training
5. Dandekar, S. (2011.) Medical Biochemistry. B.L. Churchill Livingstone (P) Ltd. New Delhi, India.
6. Nelson, D. L. (2003). Lehninger Principles of Biochemistry. Macmillan Worth Publishers, India.
7. Deb, A.C. (2004). Biochemistry. Book Agency (P) Ltd. Calcutta, India.
8. Satyanarayana, U. (2009). Biochemistry. Books and Allied (P) Ltd. Calcutta, India.
9. Robert, K. (2006). Harper's illustrated Biochemistry. McGraw Hill, Boston.

Course Code: FCS116

COMMUNITY NUTRITION

(Credits: Theory-2, Practical-1)

Course Description:

This course deals with methods used to discover nutritional problems in the community, the different strategies and education programs that may be implemented in order to improve nutritional status and health. It will familiarize the students with the concepts of public health aspects of malnutrition- both under-nutrition and over-nutrition, health care system of the community, and food and nutrition security. The students will acquire knowledge about the causes, consequences, and preventive strategies for nutritional problems in the community and also strategies for improving the nutritional and health status of communities. The purpose of this course is to enable the students to understand the concept and methods of nutritional status assessment of a community. This will help them to comprehend the nutrition concerns among communities, the correct screening criteria for malnutrition, along with strategies to combat and prevent them.

Course Objectives:

- Understand the concept and current concerns of community nutrition.
- Comprehend the national health care delivery system.
- Get exposed to population dynamics and economics of malnutrition and how it impacts national development
- Understand the causes and consequences of nutritional problems in the community.
- Be familiar with the concept of food and nutrition security

Course Outcomes:

A successful completion of this course will enable students to:

- Understand the causes, consequences, and preventive strategies for nutritional problems in the community.
- Comprehend the strategies for improving nutrition and health status of communities.
- Acquire knowledge about the concept of food and nutrition security and the various programmes for improving food and nutrition security.
- Understand the concept and purpose of nutritional status assessment in community setting.
- Explain nutritional concerns among vulnerable sections of the community and strategies to combat them.
- Gain knowledge with regard to standard methods and techniques for assessing nutritional status.
- Become familiar with the use of indices and indicators for screening and consequent identification of malnutrition in the community.
- Explain the linkages between nutrition, environment, health, and disease

- Recognize the importance of malnutrition as a conditioning factor in relation to many diseases in community
- Get acquainted with the roles of national & international agencies in community nutrition
- Explain importance of extension programmes for the betterment of quality of life in rural areas and develop skills for effective communication.

Programme Outcomes (POs)

PO Code	Programme Outcome (Short Description)
PO1	Disciplinary Knowledge
PO2	Communication Skills
PO3	Critical Thinking
PO4	Research and Inquiry
PO5	Application of Knowledge
PO6	Ethics and Social Responsibility
PO7	Lifelong Learning
PO8	Teamwork and Leadership
PO9	Environment and Sustainability

Course Outcomes (COs)

CO Code	Course Outcome
CO1	Explain the concept, scope, and importance of community nutrition.
CO2	Describe nutritional problems affecting communities and their determinants.
CO3	Analyze nutritional assessment methods and data interpretation for populations.
CO4	Discuss national and international nutrition programmes and policies.
CO5	Apply community-based strategies for improving nutritional status and public health.

CO-PO Mapping Matrix (Simple)

CO \ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	3	2	2	2	3	3	2	1	3
CO2	3	2	3	2	3	3	2	1	3
CO3	3	2	3	3	3	3	2	1	3
CO4	3	2	3	3	3	3	2	2	3
CO5	3	3	3	3	3	3	3	3	3

Unit-I: The Community

- Concept of community
- Structure of rural and urban community
- Concept of community nutrition and its scope
- Inter relationship between community members

Unit-II: Major Nutritional Problems of the Indian Community

- Low birth weight
- Protein Energy Malnutrition
- Vitamin A deficiency disorders in India
- Iodine deficiency disorders
- Lathyrism

Unit-III: Nutritional Assessment

- Techniques of dietary surveys
- Anthropometric measurements
- Biochemical and clinical methods

Unit-IV: Nutrition Education:

- Meaning of nutrition education and its importance
- Organization of nutrition education programme for the community
- Problems counter in organizing a programme and their remedies
- Evaluation and follow up

Unit-V: Nutritional Programme in India:

- **Role of nutritional agencies:** national, international, and voluntary agencies. Role of kitchen garden, dairy, fisheries in improving the nutritional status of the people

Practical:

1. Planning and executing nutritional education programme at a rural centre
2. Community service to make aware target population about nutrition related problems.
3. Development and pilot testing of questionnaire for socio-economic measures.
4. Identification of recognition of signs and symptoms of common macronutrient deficiencies like Protein Energy Malnutrition

5. Identification of recognition of signs and symptoms of common micronutrient deficiencies like anaemia, dermatitis, xerophthalmia, bitot's spot.

References:

1. Maney S (2008). *Foods, Facts and Principles*, 3rd Edition Published by Wiley Eastern, New Delhi.
2. Usha Chandrasekhar (2002) *Food Science and Application in Indian Cookery*, Phoenix Publishing House P. Ltd., New Delhi.
3. 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.

SEMESTER-V

Course Code: FCS117
FAMILY MEAL MANAGEMENT

(Credits: Theory-2, Practical-1)

Course Description:

Course investigates how nutrition requirements and challenges change throughout the human lifecycle and how alteration in nutritional requirements impact on human health. The course also investigates the influence of nutrition prior to and during conception and to highlight the importance of good maternal nutrition during pregnancy and lactation and the impact of poor nutritional balance on fetal and infant development and maternal health. The course will cover the assessment of normal growth and body development during childhood and adolescence and will conclude with a full review of current literature and research on nutrient needs and factors affecting the nutritional status of adults and the elderly.

Course Objectives:

- Study the growth and development during various stages of life span
- Understand the basics for recommending the dietary allowances
- Study nutritional needs at different stages of life span
- Gain experience in planning adequate diets for different age groups and for different income groups.

Course Outcomes:

- Design food plans and assess the adequacy of diets to meet the nutritional needs of humans at various stages of life cycle.
- Assess nutrition issues and conditions and also recommend nutrition intervention and support to promote the health and wellbeing.
- Have the knowledge, both to develop and critique nutritional interventions designed to improve human health and well-being at specific age associated time points.
- On completion of the course students will be able to critically assess nutritional requirements and nutritional health status of an individual.

Unit-I: Introduction to RDA and Balanced Diet

- Basic concept and purposes of Recommending the Dietary Allowances,
- Factors Affecting Recommended Dietary Allowances
- Requirements and Recommended Dietary Allowances for various age groups
- Uses of ICMR- RDA in planning balance diet
- Exchange system and Dietary Diversity

Unit-II: Nutrition in Pregnancy and Lactation

- Physiological Changes occurring during Pregnancy
- Importance of Food and Nutritional Care and Requirement during pregnancy
- General Dietary and nutritional Problems and Complications,
- Physiology and Hormones involved in Lactation
- Nutritional Requirements during lactation

Unit-III: Nutrition in Infancy

- Growth and Development of Infants,
- Nutritional Requirements during Infancy.
- Supplementary Feeding Foods,
- Feeding Problems and Complications.

Unit-IV: Nutrition in Childhood and Adolescence

- Growth and Development of Pre School, School Going Children and Adolescence.
- Food and Nutritional Requirements,
- Growth Spurt during Adolescence.
- Nutritional and Behavioural Problems and Eating Disorders

Unit-V: Nutrition for Adults and Elderly

- Reference Man and Reference Woman,
- Food and Nutritional Requirements for Adults doing Different Activities
- Processes of Aging,
- Food and Nutritional Requirements of Elders,
- Nutrition Related Problems of Old Age,
- Dietary Guidelines and diet Modifications.

Practicals:

1. Planning, Preparing and Evaluating Menu during Pregnancy
2. Planning, Preparing and Evaluating Menu during Lactation
3. Planning, Preparing and Evaluating Menu for Infants (Supplementary Foods)
4. Planning, Preparing and Evaluating Menu for Preschoolers
5. Planning, Preparing and Evaluating Menu for School Going Children
6. Planning, Preparing and Evaluating Menu for Adolescents
7. Planning, Preparing and Evaluating Menu for Adults
8. Planning, Preparing and Evaluating Menu for Elderly

References:

1. Mahtab, S, Bamji, Kamala Krishnasamy, Brahman, G.N.V. (2012) *Text Book of Human Nutrition*, Third Edition, Oxford and IBH Publishing Co. P. Ltd., New Delhi.
2. Srilakshmi, B. (2013), *Dietetics*, New Age International (P) Ltd., New Delhi.
3. Sunetra Roday (2017). *Food Science and Nutrition*, Oxford University Press, New Delhi.
4. Longvah, T, Ananthan, R, Bhaskarachary, K, Venkaiah, K. (2017). *Indian Food Composition Tables (IFCT)*, Indian Council of Medical Research, National Institute of Nutrition, Hyderabad.
5. Shakuntala Manay, Shadaksharaswamy. M (2013) *Foods, Facts and Principles*, New Age International Pvt Ltd Publishers, 2nd Edition) Ltd., New Delhi.
6. Swaminathan, M. (2012), *Advanced Textbook on Food and Nutrition*, Vol. 1, Second Edition, Bangalore Printing and Publishing Co. Ltd., Bangalore.

Course Code: FCS118
EARLY CHILDHOOD EDUCATION IN INDIA:
SOCIO-CULTURAL CONTEXTS

(Credits: Theory-2 & Practical-1)

Course Description:

This course explores the history of Early Childhood Care and Education (ECCE) in India highlighting its socio-cultural contexts. The focus of the course is on understanding the contribution of the educational philosophers in the area of early childhood care and education and applying the theoretical knowledge for designing interventions for early years. The course further aims to familiarize students with the different programs and policies pertinent to ECCE in India. They will also get to learn about different curriculum models and pedagogical approaches in early years of development and programmatic trends as they evolved in the Indian context.

Course Objectives:

- Understand the History of Early Childhood Care and Education in India.
- Study the contribution of the educational philosophers of Early Childhood Education
- Develop insight into the historical developments – global and Indian including the current programs and policies in ECCE.
- To learn about different curriculum models and pedagogical approaches in early childhood education.
- Develop awareness of ECCE programs in different contexts in India.
- Impart knowledge on programme planning for young children.

Course Outcomes:

- Explain the History of Early Childhood Care and Education in India and relate it with the ECCE in the present context.
- Practical application of the thinking of educational philosophers of ECCE

- Describe the historical developments – global and Indian including the current programs and policies in ECCE.
- Analyse curriculum models and pedagogical approaches in early childhood education.
- Create developmentally appropriate programs for young children.

UNIT-I: ECCE in India: Socio-cultural contexts

- History of Early Childhood Care and Education in India.
- Overview of ECCE in pre and post-independence period. Preschool education in the pre and post-independence era (very brief). How the international trends have influenced the national trends.

Unit-II: Contributions of educational philosophers

- Contributions of educational philosophers: global and Indian perspective- views of educationists and philosophers: Comenius, Rousseau, Pestalozzi, Froebel, Robert Owen, McMillan Sisters, John Dewey and Montessori, Sri Aurobindo, Tagore, Gijubhai Badheka, Tarabai Modak, Mahatma Gandhi.

Unit-III: Policies in ECCE

- National Policy on Education (1986) Programmes / schemes and innovations in ECCE – ICDS, Balwadis, mobile crèches
- National Curriculum Framework 2005
- National Policy on Early Childhood Care and Education 2013
- Curriculum Framework for Early Childhood Care and Education 2012/2013

Unit-IV: New Education Policy, 2020

- Principles of NEP 2020
- NEP 2020 in the context of early childhood care
- Benefits of NEP for children and education.

UNIT-V: Early Childhood Curriculum

- Definition and concept of curriculum
- Curriculum approaches – subject centred, learner centred, community centred
- Developmentally Appropriate Practice (DAP) – definition and core considerations, myths and consequences of developmentally inappropriate ECE practices
- Components and essential features of developmentally appropriate ECCE curriculum
- Planning a developmentally appropriate curriculum- approaches, key principles and types of plans

Practical:

1. Conduct workshops in any two of the following:
 - 1.1 Developing worksheets to teach readiness concepts
 - 1.2 Enhancing social and language skills
 - 1.3 Music, movement and drama for children
2. Prepare a developmentally appropriate plan and its implementation
3. Prepare low cost play materials/equipment's.

References:

1. Purkait, B.R. (2005). *Milestones in modern Indian education*. Kolkata: New Central Book Agency.
2. Swaminathan, M.(ed.) (1998). *The first five years: A critical perspectives on early childhood care and education in India*. New Delhi: Sage.
3. Sarangapani, P.M. (2009). Quality, feasibility and desirability of low cost private schooling: what is the evidence? *Economic & Political Weekly*, 44(43), 67–69.
4. Sarangapani, P.M. (2010). Comparative education in India: Why it is missing and why we need it. *Journal of Education Planning and Administration* 24(4): 363-378.
5. Saraswathi, T.H., Menon, S. & Madan, A. (eds.) (2018) *Childhoods in India traditions, trends and transformations*. New Delhi. Routledge.

6. Sharma, K.K., & Miglani, P. (2016). *Gender, school and society*. Patiala: Twenty First Century Publications.
7. Early Childhood Care and Education (n.d.) Retrieved from http://epgp.inflibnet.ac.in/epgpdata/uploads/epgp_content/home_science/10._early_childhood_care_education_and_development/14._aurobindo,_gijubhai_badheka,_tarabai_modak/et/6716_et_et.pdf
8. Singh, A. (1995). *Playing to learn: A training manual for early childhood education*. Chennai: M. S. Swaminathan Research Foundation.
9. Venkataraman, B. (2009). Education for sustainable development. *Environment: Science and Policy for Sustainable Development*, 51(2), 8-10.

Course Code: FCS119
FABRIC CONSTRUCTION TECHNIQUES

(Credits: Theory-2 & Practical-1)

Course Description:

This course provides basic principles for fabric construction techniques. It is designed to develop skill in students to understand and learn the method of developing fabric by using different techniques. It deals with fundamental of weaving machinery and processes. It further explains about different weaving pattern and principles of creating design through weaving and knitting. The knowledge of fabric construction techniques will enable the student to identify different types of fabrics for application in different fields.

Course Objectives:

- Develop an understanding about the basic of fabric construction technique.
- To gain knowledge and understanding of fundamental of weaving machinery and processes.
- Know about the basic concept of loom and weaving.
- Learn about other methods of fabric construction.

Course Outcomes:

- Students will learn different techniques of fabric construction.
- Students will be able to understand weaving and other fabric construction techniques.

Unit-I: Introduction to Fabric Construction process

- Introduction of fabric
- Fabric construction processes

Unit-II: Basic concepts of Weaving

- Loom and its various parts
- Motions of loom
- Types of loom- handloom and power loom, shuttle and shuttle less loom
- Concept of weaving
- Basic weaves- plain, twill, satin

Unit-III: Fancy weave/decorative weave

- Dobby weave
- Jacquard weave
- Swivel weaves
- Lappet weave
- Pile weave
- Double faced weave
- Leno weave and others.

Unit-IV: Knitting

- Concept of knitting
- Needle use in knitting, knitting machines
- Methods of knitting- warp knit and weft knit

Unit-V: Non woven and other methods of fabric construction

- Non woven fabric- felts and bonded fabric
- Other methods- braided fabric, laces, net, and tufting etc.

Practical:

1. Observe the EPI (ends per inch), PPI (picks per inch), and weave structure of different types of woven fabric through pick glass.
2. Collect the swatch of different weaves structure.
3. Prepare the graph book of different weaving pattern.

References:

1. Ajgaonkar D.B. Knitting Technology, Universal Publishing Corp-Mumbai.Spun Yarn Technology, Eric Oxtoby Butterwo
2. AmalsarF.M.Fabric Structure and Cloth Analysis.
3. Corbman, B. Fibre to Fabric
4. Grociki Z.J. Watson Textile Design and Colour, London Newness Butter Wo1q1qrths.
5. William Watson Advanced Textile Design London Longmans Green and Co.Ltd.

Course Code: FCS120

FAMILY FINANCE

(Credits: Theory-2, Practical-1)

Course Description:

Family finance is important to manage family budget. In this course student will learn family finance in family settings.

Learning Objective:

- Provide situations to understand significance of family income and expenditure and saving for future

Learning Outcome:

- Students will review the benefits of planned financial management

Unit-I: Household Income and Expenditure

- Household Income – Types, Sources, Supplementation of family income, use of family income, per capita income

Unit-II: Expenditure

- Household expenditure: Items of expenditure, mental and written plans, Factors influencing expenditure pattern, expecting exigencies and tackling them
- Account maintenance: methods of account keeping like balance sheets, account books, ledgers, income-expenditure records

Unit-III: Family Budget

- Process of budgeting- steps in drafting a family budget, balancing income and expenditure, ways to meet emergent expenses

- Personal finance management: Tax implications: significance in budgeting, measures adopted and instruments used to ensure tax benefits, calculation of personal income tax for an individual's monthly income
- Engel's Laws of consumption, drafting well balanced family budgets

Unit- IV: Credit practices

- Consumer credit- Concept, meaning, need, sources, credit cards, credit services availed by the family members, types of loans availed by families
- Mortgages: Definition and conceptual meaning, significance in meeting emergent needs of expenditure

Unit-V: Family Savings

- Financial security arrangements: Family savings and investments- need ,principles, channels of investment
- Savings and savings institutions, merits and demerits of each Guidelines for wise savings practices

Practical:

1. Evaluation and designing of advertisements in the print media including products, services and social ads.
2. Evaluation and designing of informative and attractive labels for different type of food products.
3. Case study of banks and post offices to understand their services and products
4. Learning to fill different bank forms for depositing money, start fixed deposit or recurring deposit

References:

1. Gangawane, L. V., and KhilareV. C. (2007).*Sustainable Environmental Management: Dr Jayshree Deshpande Festchrift Volume*. Delhi: Daya (ISBN 13: 9788170354741)
2. Gupta, C.B., and Nair, R.N. (2004). *Marketing Management*. New Delhi: Sultan Chand and Sons
3. Kathiresan, S., and Radha, V. (2004). *Marketing*. Chennai: Prasanna Publishers

4. Khanna S.R., Hanspal S., Kapoor S., & Awasthi H.K. (2007). *Consumer Affairs*. New Delhi: Universities Press India Pvt. Ltd.
5. Nair R., and Nair S, R. (2003). *Marketing*. New Delhi: Sultan Chand and Sons
6. Nair, S (2002). *Consumer Behaviour*. New Delhi: Sultan Chand and Sons
7. Pattanchetti, C.C., and Reddy (2002). *Principles of Marketing*. Coimbatore: Rainbow Publishers
8. Sawhney, H.K., &Mital, M. (2007). *Family Finance & Consumer Studies*. New Delhi: Elite Publishing House Pvt. Ltd.
9. Seetharaman, P., and Sethi, M. (2001). *Consumerism: Strength and Tactics*. New Delhi: CBS Publishers.
10. Verma, B.P. (2003). *Civil Engineering Drawing, Drawing and House Planning*. New Delhi: Khanna Publishers
11. Wagner, S. (2003). *Understanding Green Consumer Behaviour*. Routledge (ISBN 9780415316194)

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-1): FCS121

CHILD RIGHTS

(Credits: Theory -2, Practical-1)

Course Description:

The course prepares students in the area of child Right. It explores critical questions about the meaning & implications and acquaints students with key issues, debates and questions pertaining to Child Rights.

Course Objectives:

- Understanding Right of children and laws related to children in India
- Providing in depth understanding of children in difficult circumstances.

Course Outcomes:

- The students will develop an understanding of rights of children in India.
- The students will gain insights about the status of children in difficult circumstances.

Unit-I: Understanding Child Rights

- Meaning of Child Rights and Convention on the Rights of the Child
- Disadvantage and exclusion

Unit-II: Laws and Policies related to Child Rights in India

- Demographic profile of the child in India
- Protection and promotion of child rights: Laws and policies

Unit-III: Children in Different Circumstances

- Street children, working children and homeless children
- Child abuse

Unit-IV: Child trafficking

- Definition of Child trafficking
- Types of Child trafficking solution
- Solutions

Unit-V: Rights and justice for Children

- Children in conflict with law
- The right of Children in conflict with the law
- Justice for children in conflict with the law

Practical:

1. Preparing a power point presentation on the laws and policies framed for the protection and promotion of child rights
2. Interaction with children in difficult circumstances like child labours, rag pickers etc.
3. Preparing an album on the different types of child abuse and suggesting remedies for the same.

References:

1. Bajpai, A.(2006). *Child Rights in India: Law, Policy and Practice*. Oxford University Press.
2. Chopra, G.(2015). *Child Rights in India: Challenges and Social Action*. New Delhi: Springer
3. Satyarthi, K. & Zutshi , B. (2006). *Globalization, Development and Child rights*. New Delhi: Shipra Publications.
4. Chopra. G, (2015).Child Rights in India: Challenges and Social Action. New Delhi: Springer. Chapter1, pg1-23, Chapter2, pg25-43
5. Chopra.G,(2015).Child Rights in India: Challenges and Social Action. New Delhi: Springer.Chapter4, pg77-95, Chapter5, pg101- 131, Chapter7, pg 165-179

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-1): FCS122

PUBLIC HEALTH NUTRITION

(Credits: Theory-2, Practical-1)

Course description:

The focus of this course is to identifying health and nutrition problems and integrating nutritional services with medical and social services within the community. This course will provide basic knowledge and skills relevant to the practice of community nutrition, role of nutrition in health promotion and perspectives for resolving community nutrition problems. It will focuses on national and state community nutrition programs, determinants of health outcomes, measurement of nutrition and health status, food and nutrition policy, legislative issues and management of community programs.

Course objectives:

- Know the basics of public health nutrition
- Understand the need of prioritizing nutrition issues
- Assess the nutritional and Health Status of an individual and the community.
- Learn nutritional programmes and policies to overcome malnutrition
- Understand various national and International nutritional organizations for combating malnutrition
- Apply ICT in the formulation of community nutrition education programme

Course outcomes:

- Develop understanding the concepts and knowledge required for the delivery of community nutrition services for program planning, intervention and program evaluation
- Gaining knowledge on nutritional programmes and policies overcoming malnutrition
- Understanding the national, international and voluntary nutritional organizations to combat malnutrition

- Able to organize community nutrition education programme with the application of computers.
- Apply immunological intervention programmes to overcome epidemic of communicable diseases.

Unit-I: Introduction to Public Health Nutrition

- Meaning and Scope of Public Health Nutrition
- Roles and responsibilities of public health nutritionists
- Definitions of optimum health, malnutrition (under nutrition, overweight, obesity, micronutrient deficiency), food and nutrient supplements, nutrition education, morbidity, mortality rates, Importance of nutrition throughout the life cycle
- Dual burden of malnutrition, consequences and strategy to overcome malnutrition
- Sustainable Development Goals (SDGs)
- Concept of Food and Nutrition security and its relevance in current scenario.

Unit-II: Nutritional Assessment

Introduction, Definition of Nutritional Status, Instruments, Standard of Reference, Age Assessment, Measurement Techniques, Weight, Linear Measurement/Height, Circumferences, Objective and Classification of nutritional assessment Methods Overview of nutritional status assessment methods:

- **Anthropometry measurements**
 - Techniques commonly used in public health (weight for age, weight for height, height for age & BMI for age), Comparison of indices with references/ standards.
- **Biochemical Estimation** Name of assessment of parameters, Reference value/Desirable Level of nutrients
- Lipids & Lipoproteins, Carbohydrates (blood and urinary glucose), Protein, Vitamin A (serum retinol, carotene), Vitamin D, B-complex vitamins, including Folic acid & Vitamin B12, Vitamin C
- Iodine (T3, T4, urinary excretion), Iron (Hb, HcT, serum iron, transferrin, ferritin), Sodium, potassium and chloride, Fluoride.

- **Clinical Examination of common nutritional deficiencies :** Specific nutrient Deficiency signs & symptoms (Vitamin A, Iron, Iodine, Zinc U, B complex vitamins etc.), Grouping of signs
- **Dietary Survey and Types of Nutritional Survey**
 - Dietary intakes methods and understanding their usage and limitations in different field situations: 24-hour diet recall methods; Food frequency method; Weighed food inventory.
 - Rapid assessment methods for dietary intake
 - Dietary Diversity Score for Household, Individual, women and children
- **Indirect Nutritional Assessment parameters**
 - Vital Statistics, Age Specific Mortality Rate, Morbidity and Cause of Specific Mortality.

Unit-III: Social & behaviour change communication

- **Concepts, components and process of communication for nutrition health promotion**
 - Definitions of Formal – non-formal communication, Participatory communication
 - Components of BCC(Sender, Message, Channel, Receiver)
 - Various types of communication – interpersonal, mass media, visual, verbal/ non-verbal.
 - Social ecological model and communication for development (C4D) approach
- **Concepts and Theories of Social and Behaviour change Communication**
 - Definitions and need of SBCC Three characteristics ,Ten overarching principles for developing SBCC program or campaign
 - Steps for developing a successful Social and Behaviour change communication program

Unit-IV: National, International and Voluntary Organizations to combat Malnutrition

Role of Nutrition in Achieving Global Targets

- Optimal Infant and Young Child Feeding: Significance of the first 1000 days of life
- Improving maternal, infant and young child nutrition – WHO Global Targets 2025
- Nutrition Intervention programmes in India
- Integrated Child Development Services (ICDS): ICDS Mission Mode, ICDS mission in various states
- Role of AWW; Supplementary Nutrition, Bal bhog, Sakhibhog, Shishubhog
- Mid-Day Meal (MDM) program
- Fortification program

National Programs to Combat Micronutrient Malnutrition

- Iron: National Nutritional Anemia Control Program,
 - Vitamin A: Vitamin A Prophylaxis Program (VAPP)
 - Iodine: National Iodine Deficiency Disorders Control Program (NIDDCP), Universal Salt Iodization (USI), Double Fortified Salt (DFS)
 - Diarrhea Control Program: Role of Zinc, ORS and National Deworming Campaign
 - Fluorosis Control Program

Organizations Working towards Meeting Global Nutrition Targets

- National organization – ICAR, ICMR, SSWB, NNMB, NIN, CFTRI, Tata trusts
- International Organizations - World Bank, World Health Organization (WHO), United Nations International Children's Emergency Fund (UNICEF), World Food
- Voluntary organizations

Unit-V: Epidemiology of communicable diseases

- Definition, causes, signs and symptoms, treatment and prevention of communicable diseases, Other infections- dengue, Flu
- Types of immunity- active, passive and herd-group protection
- Immunization agents- vaccines, immunoglobulin
- Immunization schedules - National and WHO Expanded Programme on Immunization

Practical:

1. Assessing the nutritional status of an individual, group and community in different settings
2. Conducting 3 Day Weighment Survey for an Individual

3. Spot observations based on the observations through field visits in ICDS centres, MDM school programme
4. Develop education tool for improvement of nutrition in the community.

References:

1. Park A. (2007), Park's *Textbook of Preventive and Social Medicine* XIX Edition M/S Banarasidas, Bharat Publishers, 1167, Prem Nagar, Jabalpur, 428 001(India)
2. Bamji M.S, Prahlad Rao N, Reddy V (2004). *Textbook of Human Nutrition* II Edition, Oxford and PBH Publishing Co. Pvt. Ltd , New Delhi
3. Bhatt D.P (2008), *Health Education*, Khel Sahitya Kendra, New Delhi
4. Gibney MJ, Margetts BM, Kearney JM, Arab L (2004) *Public Health Nutrition* Blackwell Publishing Co. UK
5. Swaminathan M (2007), *Essentials of Food and Nutrition. An Advanced Textbook* Vol.I, The Bangalore Printing and Publishing Co. Ltd, Bangalore
6. UNICEF. <https://www.unicef.org/>
7. WHO. <http://www.who.int/>
8. National Guidelines on Infant and Young Child Feeding. wcd.nic.in
9. WHO Non-communicable diseases and risk factors. <http://www.who.int/ncds/en/NationalNutritionMission-ICDS.icds-wcd.nic.in>
10. Ministry of Health & Family Welfare, www.mohfw.nic.in
11. Field guide to designing communication strategy, WHO publication-2007
12. Communication for Development (C4D) Capability Development Framework, UNICEF and 3D Change, 2009
13. Health education: theoretical concepts, effective strategies and core competencies: a foundation document to guide capacity development of health educators/World Health Organization. Regional Office for the Eastern Mediterranean, 2012

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-1): **FCS123**

APPAREL CONSTRUCTION

(Credits: Theory-2, Practical-1)

Course Description:

The course introduces the basic principles of apparel construction including pattern and fabric selection. The course aims at developing skills in using knowledge of apparel construction required to be employed in the field of apparel industry and entrepreneurship. It deals with the tools and techniques required for apparel construction. It covers the pattern making and grading techniques required for making apparels. It gives hands on experience for apparel construction which is the pre requisite of apparel industry.

Course Objectives:

- Learns the requirement for apparel construction
- Understand the use, significance and selection of tools and equipment for apparel construction
- Understand the coordination of fabric, pattern and supportive material.
- Enhance the understanding of drafting and pattern making.
- Acquire skills of apparel construction
- Understand fit of the garment.

Course Outcomes:

- Students will be able to know the requirements for apparel construction
- Students will be able to describe the use and significance of tools and equipment for apparel construction
- Students will be able to explain drafting and pattern making method.
- Students will be able to explore the skills of apparel construction
- Students will be able to adapt basic block to different designs.
- Students will be able to evaluate fit of the garment.

Unit-I: Introduction to Apparel Construction

- Elements of apparel construction
 - Grain, Seams, Finish, Workmanship
- Sew fabrics
 - Threads, needles, seams and its co-relation to fabrics
- Essentials tools and supplies
 - Sewing Needles, hand sewing tools, marking tools, measuring tools, cutting tools, pressing tools, threads, special tools, trims & tapes, buttons & closures.

Unit-II: Basics of Apparel Construction

- Anthropometric measurement, Introduction & Importance
- Body measurements (BM):
 - Principles of taking BM,
 - Taking accurate body measurements
 - Measuring from a garment.
- Size charts
 - Standard size charts for Kids, Men and Women
 - Ease allowance for various fit.
 - Comparison of standard size charts from different countries and brands
- Fabric Requirement:
 - Calculation of fabric needed for various garments

Unit-III: Pattern Making

- Introduction to pattern making
- Pattern making techniques: Drafting, Draping and Flat pattern technique
- Darts and their manipulation, added fullness and contouring.
- Principles of pattern making for: Upper garment, Lower garment, Sleeves, Collar, Dresses

Unit-IV: Fabric Layout, Cutting And Marking

- Laying out checks, plaids & directional fabrics,
- Marking with chalk, pencil or liquid markers
- Cutting and sewing tips

Unit-V: Selection of Fabric and Accessories

- Fabrics: Easy to stitch, special fabrics, textured and patterned fabrics
- Selection of appropriate fabrics for apparels.
- Accessories and trimmings : types and use
- Appropriate combination of accessories, trims and materials

Practicals:

1. Development of basic block
 - a. Upper bodice block
 - b. Lower bodice block
 - c. Basic sleeve block
2. Drafting and construction of different types of
 - a. Collars
 - b. Plackets
 - c. Sleeves
3. Drafting and construction of
 - a. Salwar/trouser
4. Adaptation of basic block for designing of
 - a. Frock
 - b. Kurta

References:

1. Aldrich, W. (1988). Metric Pattern Cutting. Unwin Hyman Ltd., London.
2. Amaden, C. & Crawford (1995) Fashion Your Own Skirts the Simple way Amaden-Crawford Associates, USA.
3. Armstrong, H. (2012). Patternmaking for Fashion Design Pearson Education, Inc, New Delhi.
4. Bray N., (1986) Dress Pattern Designing: The Basic Principles of cut and fit, Blackwell Publishing.
5. Hollen, N.R. & Kundel, C.J. (1993). Pattern Making by the Flat-Pattern Method. Prentice Hall, New Jersey.
6. Kopp, E., Rolfo, V. & Zelin, B. (1995). Designing Apparel through the Flat Pattern. Fairchild Publications New York.
7. Singer. (1989). Sewing Pants that Fit. Cowles Creative Publishing Inc. Minnesota, USA
8. S. Srivastava, Basic of fashion Technology (2013) Pushpa Publication, Prayagraj.
9. Thomas, A. J. (1993). Art of Sewing. UBS Publishers Distributions Ltd. New Delhi
10. Zarapkar, K.R. (2008). Zarapkar System of Cutting. Navneet Publication (India) Ltd., Mumbai.

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-1): **FCS124**

COMMUNITY DEVELOPMENT

(Credits: Theory-2, Practical-1)

Course Description:

Community development refers to the broad set of skills and institutions that local communities utilize in an effort to improve the quality of life for all residents. This Course examines the history of housing, economic trends and social policies that have affected the marginalized communities across the country and project the organizing and capacity building measures that community development professionals and activists have sought to improve these conditions.

Course Objectives:

- Understand the conceptual meaning of community development and community organization
- Become aware of community development approaches
- Study community organization modalities in various settings
- Learn to evaluate of community development programmes

Course Outcomes:

- Distinguish community development from community organization
- Comprehend significant phases in community development
- Gain knowledge on sustainability and community development concepts
- Envisage the role of community-based organizations in community development

Unit-I: Concept of Community Development

- Meaning and Definition of community development
- Principles, Philosophy and objectives
- Elements of community development -Community development as a process, community development as a method
- Rural development initiatives prior to independence and post-independence

Unit-II: Role of Community Based Organizations

- Conceptual meaning and definition of community based organizations
- Role, structure and functions of community organizations

Unit-III: Phases of Community Development

- Phases of community development – definition and needs
- Seven Phases of community development: sequence and exclusive roles
 - Relationship
 - Assessment
 - Discussion
 - Organization
 - Reflection
 - Modification
 - Continuation
- National Extension Service – Role of student volunteers in community development

Unit-IV: Evaluation of community development programmes

- Review of community development programmes
- Evaluation methods
- Analysis /merits and demerits
- Community involvement and assay of Benefits
- Incentives and Prizes/ Awards

Unit-V: Sustainability and Community Development

- Concept of sustainable community development
- SDGs – Sustainable Development Goals – concept
- Significance of SDGs to community development
- Need for sustainable community development
- Sustainability in community development- aims, objectives and principles

Practical:

1. Assessment of selected community development programmes
2. Visit to Award won Panchayats to understand their success story
3. Visit to villages to observe community activities
4. Prepare a document on community development activities in a model village

5. Preparation of plan of work
6. Organize community development programmes in a selected rural area
7. Follow up and evaluation of the programmes in progress

References:

1. Banta Sharma Nidaugmayum (2015). Community organization and social registration. New Delhi: Janadaprakashan
2. Indra Godara (2013). Committee and community organization. New Delhi : Black prints publishing
3. Kunal Bhatia (2012). Social Work and Community Development. New Delhi: Sonali publications
4. Reddy A.S.A (2001). Extension Education. Bapatla :Sree Lakshmi Press
5. Thomas William,A.J. (2015). Rural Development Concept and Recent approaches. New Delhi, RAWAT publications.

SEMESTER-VI

Course Code: FCS125
NUTRITIONAL BIOCHEMISTRY

(Credits: Theory-2, Practical:-1)

Course Description:

This Course introduces many aspects of biochemistry related to macronutrient (carbohydrates, fats and proteins) and metabolism with an emphasis on human medical and nutritional applications of biochemistry. The unit covers the biochemistry of digestion and metabolism of macromolecules in food and subsequent energy production; the understanding of key metabolic pathways underlying the utilization of nutrients for energy; the basis of nutrient requirements in various physiological states.

Course Objectives:

This course provides introduction to biochemistry of macro- and micronutrients with a limited focus on medical aspects of nutrient deficiencies and metabolism. The lectures focuses on chemical structures, chemical properties, metabolism, and function of macro- and micronutrients.

Course Outcomes:

Provides a comprehensive investigation of the nutritional needs of humans with emphasis on nutritional biochemistry and current issues. After successfully completing Nutritional Biochemistry, student should be able to relate the principles of biochemistry and physiology to the science of nutrition.

Unit-I: History, Scope and Importance of Biochemistry:

- Scope and importance of Biochemistry in Nutrition, Osmosis and osmotic pressure, active and passive transport across biological membranes. Simple experimental techniques: centrifugation, colorimeter, chromatography and electrophoresis, (Beer's and Lambert's law)

Unit-II: Structure and General Properties of Physiologically Important Compounds:

- Carbohydrates: Monosaccharide, disaccharides and polysaccharides.
- Lipids: Fatty acids, triglycerides, phospholipids, lipoproteins.
- Protein: Dipeptide and polypeptide.

Unit-III: Vitamins & Engymes

- Chemistry and Physiological Function: Fat and water soluble vitamins.
- Enzymes: classification, function and mechanism of action.

Unit-IV: Digestion & Absorption of macronutrients & Hormones

- Digestion and Absorption: Digestion and absorption of carbohydrates, fats and proteins.
- Hormones: Definition, classification, general mode of action of biologically important compounds.

Unit-V: Biochemical pathways of Macro-nutrients

- Metabolism: anabolism and catabolism
- Carbohydrates: Major biochemical pathways related to carbohydrate metabolism, electron transport chain and oxidative phosphorylation.
- Lipids: Major biochemical pathways related to lipid metabolism.
- Protein: Major biochemical pathways related to protein metabolism.
- Nucleic Acids: General concept of genetic makeup- DNA and RNA

Practical:

1. Qualitative Analysis

- a. Test for carbohydrates
- b. Identification of glucose, fructose, galactose, sucrose, maltose, lactose and starch
- c. To determine the achromic point during the salivary digestion of starch
- d. **Proteins:** Colour test for proteins
- e. **Lipids:** General tests for lipids

2. Quantitative Analysis

- a. To draw a calibration graph for fructose using resorcinol reagent
- b. Estimation of amino acid by formal titration
- c. Estimation of protein calorimetrically
- d. Estimation of glucose in the biological sample
- e. Estimation of vitamin in the biological sample

References:

1. Srivastava H.C. (2013). Nootan ISC Chemistry Class XI, 7th edition, Nageen Prakashan Pvt. Ltd.
2. Srivastava H.C. (2013). Nootan ISC Chemistry Class XII, 7th edition, Nageen Prakashan Pvt. Ltd.
3. Tandon O.P., Virmani A.K. (2018). A Textbook of Organic Chemistry for NEET, GRB Publishers
4. NCERT (2006). NCERT Chemistry Class 11&12, National Council of Education Research and Training
5. Dandekar, S. (2011). Medical Biochemistry. B.L. Churchill Livingstone (P) Ltd. New Delhi, India.
6. Nelson, D. L. (2003). Lehninger Principles of Biochemistry. Macmillan Worth Publishers, India.
7. Deb, A.C. (2004). Biochemistry. Book Agency (P) Ltd. Calcutta, India.
8. Satyanarayana, U. (2009). Biochemistry. Books and Allied (P) Ltd. Calcutta, India.
9. Robert, K. (2006). Harper's illustrated Biochemistry. McGraw Hill, Boston.

Course Code: FCS126

DYEING AND PRINTING OF TEXTILES

(Credits: Theory-2, Practical-1)

Course Description:

After the manufacturing of textiles, value addition is required. Dyeing and printing of the textiles are the prime methods of value addition to the textiles. This course deals with the basics of the Dyeing and printing along with the influence of chemicals and auxiliaries on the end products. It further describes different types of dyeing and printing and explains the procedure of doing it on different fabrics to obtain required results. This will help in using reasonably priced dyes and dyeing procedure and operating according to ecological requirements and carrying out in the shortest possible time.

Course Objectives:

- Introduce basics of dyeing and printing.
- Inculcate the knowledge of auxiliaries and chemicals used for dyeing and printing
- Enhance the understanding of the relation between the dyes, pigments and fabrics.
- Develop the skills in doing dyeing and printing of textiles
- Reproducing the required shade from batch to batch.

Course Outcomes:

- Students will be able to describe the basics of dyeing and printing.
- Students will be able to examine the knowledge of auxiliaries and chemicals used for dyeing and printing
- Students will be able to explain the relation between the dyes, pigments and fabrics.
- Students will be able to dye and print textiles.
- Students will be able to reproduce the required shade from batch to batch.

Unit-I: Introduction

- History of dyeing and printing
- Terms related to colour
- Colour wheel and schemes
- Digital colour models: CMYK. RGB
- Directional and non-directional printing

Unit-II: Basics of Dyeing and Printing

- Difference between dyes and pigments
- Preparation of fabrics before dyeing and printing Desizing, scouring, bleaching, mercerization, carbonization

Unit-III: Dyeing

- Classification of Dyes
- Auxiliaries and machineries used for dyeing
- Methods for dyeing ; stages of dyeing
- Factors affecting dyeing
- Dyeing of cotton, wool and silk
- Dyeing of viscose and polyester
- Natural dyeing methods and limitations
- Fixation & after treatments
- Dyeing machines

Unit-IV: Printing

- Classification of Printing
- Preparation of print paste and printing table
- Pigments and dyes used
- Direct style of printing
- Resist style of printing
- Discharge style of printing
- Dyes for digital textile printing
- Fixation & after treatments
- Printing machines

Unit-V: Recent advancement in dyeing & Printing

- Recent advancement in dyeing techniques
- Recent advancement in Printing techniques

Practical:

1. Preparation of fabric for dyeing and printing
 - a. Scouring, desizing, bleaching
2. Dyeing: Dyeing of yarn and fabric with different classes of dyes by varying the temperatures, %shade and M: L ratio.
 - a. Dyeing of cotton yarn and fabric with direct dyes, vat and reactive dyes.
 - b. Dyeing of silk, wool and nylon yarn and fabrics with basic and acid dyes.
 - c. Dyeing of polyester yarn and fabric with disperse dyes.
3. Making designs for
 - a. Blocks, stencil and screen
 - b. Preparation of stencil and screen
4. Printing of fabrics using:
 - a. Direct style - block, stencil and screen
 - b. Resist style - Tie &Dye, Batik
5. Printing on garments by different styles
6. Product development

References:

1. Chavan, R.B. (1979). Textile Printing (Book of Papers) Department of Textile Technology, IIT New Delhi.
2. Giles, G.H. (1974) Laboratory Course in Dyeing Hart & Clough; Bradford; England
Kale D.G. (1976) Principles of Cotton Printing. Maharaja Brothers Ahmedabad.
3. Saraiya, N.S. & Gupta P.C. Technology and Management of Printing.
4. Shenai, V.A. (1979). Chemistry of Dyes and Principles of Dyeing. Sevak Publications Mumbai

5. Trotman E.R. (1975). Dyeing and Chemical Technology of Textile Fibre. Charles Griffin & Co. Ltd., London
6. Wynne Andrea (1997). Textiles. The Motivate Series Mcmillain Education Ltd., London.
7. Vilensky L.D. & Gohil E.P. G. (1987) Textile Science, An explanation of fiber properties. CBS Publishers & Distribution, Delhi.

Course Code: FCS127
DEVELOPMENTAL CHALLENGES IN CHILDREN
(Credits: Theory-2, Practical-1)

Course Description:

The course introduces students to various disabilities in childhood years. It highlights aspects such as aetiology, characteristics and management of different disabilities. The educational practices in special education and inclusive education are also dealt. It also provides an overview of policies and laws related to disability

Course Objectives:

- Orient the students about the need and importance of studying children with different disabilities and how needs of these children differ from others.
- Develop an understanding and awareness of the basic terms, issues and concepts related to disability.
- Explain students about the educational and welfare programs, facilities and services available and the efficacy of the same.
- Develop sensitivity towards parental coping and acceptance of the situation concerning disability in the family.

Course Outcomes:

- Explain the need and importance of studying children with different disabilities.
- Describe the causes, the characteristics, assessment and intervention of various disabilities.
- Identify the common disabilities prevalent in childhood.
- Demonstrate first- hand experience of interacting and understanding children with disabilities.
- Distinguish the education patterns between children with disability and other children.
- Describe the coping strategies adopted by parents and family while dealing with children with disabilities.
- Design academic and extra- curricular activities for children with special need.

Unit- I: Historical Background Special Needs as a Discipline

- Emergence of special needs as a discipline
- Present status of the field (with focus on special education and inclusion)

Unit-II: Introduction to Childhood Developmental Disorders and Disabilities

- Developmental disorders, disability, impairment, handicap: Concept and definition
- Models of disability
- Classifying disabilities
- Social construction of disability
- Demography of disability in India

Unit-III: Common Childhood Developmental Challenges-I

- Causes, Characteristic, identification, assessment and intervention with reference to:
 - Loco motor disability
 - Visual disability
 - Auditory and speech disability
 - Intellectual disability

Unit-IV: Developmental Challenges-II

- Autism
- Learning disability
- ADHD

Unit-V: Developmental Challenges-III

- Cerebral Palsy
- Down Syndrome
- Social and Emotional Disability

Practical:

1. Visits to organizations working with children with disabilities.
2. Observing children with disabilities in families and institutions.
3. Planning developmentally appropriate material for children with disabilities.

References:

1. Balsara, M. (2011). *Inclusive education for special children*. New Delhi: Kanishka Publishers.
2. Berk, L. E. (2007). *Development through the lifespan*. Delhi: Pearson Education.
3. Chopra, G. (2012). *Early detection of disabilities and persons with disabilities in the community*. New Delhi: Engage Publications.
4. Chopra, G. (2012). *Stimulating development of young children with disabilities at anganwadi and at home: A practical guide*. New Delhi: Engage Publications.
5. Dhawan, M. (2011). *Education of children with special needs*. New Delhi: Isha Books.
6. Haring, N. G. (1974). *Behavior of exceptional children: An introduction to special education*. New Jersey: Prentice Hall Inc.
7. Hegarty, S., & Alur, M. (Eds.). (2002). *Education and children with special needs: from Segregation to inclusion*. New Delhi: Sage.
8. Karna, G. N. (1999). *United Nations and rights of disabled persons: A study in Indian perspective*. New Delhi: A.P.H. Publishing Corporation.

Course Code: FCS128
CONSUMER BEHAVIOUR
(Credits: Theory-2, Practical-1)

Course Description:

Consumer is the king in the consumer market. Consumers' behaviour and attitude reflects their living styles which *per se* will be the delineation of their family finance management practices. The Course exposes students to real life situations for realizing their role as consumers as well as financial managers in family settings.

Course Objectives:

- Register and react as responsible consumers
- Analyse relevance of consumer movement in India
- Gain knowledge on consumer protection Laws and Acts and reflect upon personal rights and responsibilities

Course Outcomes:

- Becoming familiarized to the changing trends in consumerism
- Enriched Knowledge on market systems
- Emerge as informed consumers

Unit -I: Consumer and the Market

- Consumer: definition and meaning; consumer vs. customer
- Role of consumers in the economy, National Income, Per Capita Income, Household wise distribution of income
- Classification of Consumer goods
- Consumer and the market: definition and classification of markets, types
- Consumer demand and supply

- Channels of distribution
- Consumer behaviour: changing nature of consumer behaviour to suit modern market and business trends – concepts of C2C, B2B, B2C, C2B etc; Factors influencing Consumer behaviour
- Meaning, characteristics of buyer behaviour, buying motives – types; consumer buying process;
- Change in consumer purchase practices in the digital market – concept of e-commerce, m-commerce, online shopping etc; Extended use of plastic currency and cards

Unit -II: Consumerism in India

- Consumerism: genesis, reasons for consumer movement
- Historic Declaration of Consumer rights
- Consumerism in India
- Consumer problems – types, nature , causes and solutions
- **Concern for the Consumer : Consumer education:** Meaning and definition; need and scope, objectives, aspects, methods, contents and resources, Problems
- Consumer education and empowerment: meaning, need and achievements with specific relevance to India
- Consumer aids: classification – Labels, Trademarks, Brand Names, Patents, Warranty, Guarantee, Quality Control and After Sales Service, Government and Voluntary Agencies,
- Role of advertisements influencing consumer behaviour
- Product labeling and packaging – significance to fair practices
- Unfair consumer practices: adulteration and faulty weights and measures

Unit-III: Green Consumerism

- Meaning and importance with respect to consumerism, need, consideration in daily consumption and significance, ethos of adopting sustainable/eco-friendly lifestyle as green consumers.

Unit -IV: Consumer Protection

- Consumer protection: concept, need and significance
- Consumer rights and responsibilities in India
- Consumer organizations – origin, functioning, role and types
- Consumer cooperatives – role, history and growth in India
- Consumer redress: role of consumer forums and consumer courts in safeguarding consumers

Unit-V: Consumer Laws and Act

- Basic legislative framework for consumer protection in India- Consumer Protection Act
- 1986 (COPRA) , Alternative redressal mechanisms, Mediation centres
- Standardization and quality control measures: Role of ISI, FPO, AGMARK, ISO, Eco mark, Wool mark, Silk mark, Cotton mark, Handloom mark, BEE Star labeling and others
- Consumer Protection Act 2019

Practical:

1. Identify various marks of significance like Hall mark, wool mark, silk mark etc and know the complex modes of identity clauses
2. Visits to various types of consumer markets to find out how they function
3. Learn to distinguish one mark from another from the logo and colour of logo like eco labels, green labels

References:

1. Gangawane, L. V., and Khilare V. C. (2007). *Sustainable Environmental Management: Dr a. Jayshree Deshpande Festschrift Volume*. Delhi: Daya (ISBN 13: 9788170354741)
2. Gupta, C.B., and Nair, R.N. (2004). *Marketing Management*. New Delhi: Sultan Chand and Sons
3. Kathiresan, S., and Radha, V. (2004). *Marketing*. Chennai: Prasanna Publishers
4. Khanna S.R., Hanspal S., Kapoor S., & Awasthi H.K. (2007). *Consumer Affairs*. New Delhi: Universities Press India Pvt. Ltd.
5. Nair R., and Nair S, R. (2003). *Marketing*. New Delhi: Sultan Chand and Sons
6. Nair, S (2002). *Consumer Behaviour*. New Delhi: Sultan Chand and Sons
7. Pattanchetti, C.C., and Reddy (2002). *Principles of Marketing*. Coimbatore: Rainbow Publishers
8. Sawhney, H.K., & Mital, M. (2007). *Family Finance & Consumer Studies*. New Delhi: Elite Publishing House Pvt. Ltd.
9. Seetharaman, P., and Sethi, M. (2001). *Consumerism: Strength and Tactics*. New Delhi: CBS Publishers.
10. Verma, B.P. (2003). *Civil Engineering Drawing, Drawing and House Planning*. New Delhi: Khanna Publishers
11. Wagner, S. (2003). *Understanding Green Consumer Behaviour*. Routledge (ISBN 9780415316194)

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-II): FCS129

INTERPERSONAL RELATIONSHIPS

(Credits: Theory-2, Practical-1)

Course Description:

The course prepares students for an understanding of contemporary interpersonal relationships in families and in society, from a psycho-social perspective. It includes a focus on concepts and theories of interpersonal communication, with an emphasis on types of relationships (family/peers/workplace), relationship development, communication strategies, stress and conflict management.

Course Objectives:

- Understand interpersonal relationships and family dynamics in contemporary India.
- Understand one's own self and others with the aim of improving interpersonal relationships.
- Understand theories and perspectives related to interpersonal relationships and family dynamics.
- Develop an insight into interpersonal stress, conflict and its resolution.

Course Outcomes:

- Explain basic components and processes involved in interpersonal relationship
- Describe theoretical perspectives in understanding interpersonal relationships and family dynamics.
- Use one's self-awareness in understanding significant others. Illustrate the significance of self-awareness in our understanding of significant others.
- Formulate strategies for developing positive dynamics in different relationships and managing conflict.

Unit-I: Understanding the Self

- Self-Awareness—personality characteristics, cultural beliefs, values, expectations and ideas guiding behaviour
- Self-identity-identifying one's own philosophy and goals of life (influenced by personal history, socialization and context)
- Personality—factors that shape one's personality and its influence on behaviour and interpersonal communications
- Self with family/parents/siblings, peers, social/professional organizations
- The impact of media on the self

Unit-II: Perspectives on Interpersonal Relationships

- Perspectives: On friendships, love, family and other interpersonal relationships
 - Ethological Perspective
 - Neurobiological Perspective
 - Psychological Perspective
 - Sociological Perspective
 - Cross-cultural perspectives

Unit-III: Theories on Interpersonal Relationships

- Social Exchange Theory
- Family Systems Theory
- Family Developmental Theory
- Ecological Systems Theory
- Attachment Theory

- Triangular theory of love - Robert Sternberg

Unit-IV: Basics of Interpersonal Communication

- Process and components of basic communication
- Interpersonal communication: communication of ideas and feelings, self-disclosure, crediting and criticism
- Nurturing positive interpersonal communication and dynamics: perspective taking, empathy, listening and feedback skills.
- Resolving interpersonal conflicts: Types of conflicts and management skills (in relation with marital, parental, workplace, family, and friends)

Unit-V: Life Choices (Education, Career, Romantic Relationships)

- Engagement with life goals and conscious life choices- in view of personal philosophy, demands of the family, peers, societal norms.
- Understanding intimate, love and romantic relationships within a cultural context
- Career choices and professional relationships- developing trust, mutual respect, mindfulness, appreciation for diversity and open communication.
- Understanding the role of adjustments in relationships- myths, misconceptions and factors influencing adjustment patterns.

Practical:

1. Group discussion/role play/simulations on interpersonal relationships
2. Conduct workshops on: cultural variations in interpersonal relationships, family dynamics, verbal vs. non-verbal communication, and social networking.

References:

1. Arnett, J.J. (2005). Youth, cultures and societies in transition: The challenge of growing up in a globalized world. In F. Gale & S. Fahey. (Eds.), *Youth in Transition – The challenges of generational change in Asia* (pp 22-35). Bangkok: Regional Unit for Social and Human Sciences in Asia and the Pacific.
2. Baron, R. A., Byrne, D., & Branscombe, N. R. (2006). *Social psychology*. ND: Pushp Print Services.
3. Chaudhary, N., & Shukla, S. (2019). Family, identity, and the individual in India. In G. Mishra (Ed.), *Psychology: Volume 2: Individual and the social: Processes and issues* (pp.143-189). New Delhi, India: Oxford University Press.
4. D’cruz, P., & Bharat, S. (2001). Beyond joint and nuclear: The Indian family revisited. *Journal of Comparative Family Studies*, 32(2), 167-194.

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-II): FCS130

SOCIAL MEDIA

(Credits: Theory-2, Practical-1)

Course Description:

Course in Social Media orients the students to learn about the various dimensions of Social Media. The course focuses contemporary development concerns, advocacy and scope of various social media and other digital platforms. It also promotes cyber security across digital platforms.

Course Objectives:

- To familiarize with various social media and digital platforms
- To distinguish between the scope of various social media and other digital platforms
- To developing skills in the use of social media for SBCC campaigns
- To acquire skills in promoting cyber security across digital platforms

Course Outcomes:

- Familiarization with various social media and digital platforms in development sector.
- Identify and distinguish between the scope of various social media and other digital platforms.
- Developing skills in the use of social media for SBCC campaigns.
- Acquire skills in promoting cyber security across digital platforms.

Unit-I: Social Media

- An overview
- Social media and Public relations
- Social Media strategy and planning
- Social Networking Sites (SNS): LinkedIn & Twitter
- News Writing and Community Management

Unit-II: Social Marketing

- Social marketing- concept of social marketing
- Innovative strategies in Social marketing

Unit-III: Advertising

- Advertising- definition, types, origin and role
- Types of advertisement and their impacts

Unit-IV: Social Media and other Digital Platforms

- Social media and other digital platforms: concept, types, reach, access and scope.
- Assessing social media campaigns.
- Designing social media campaigns for advocacy, social mobilization, marketing and advertising.

Unit-V: Digital Communication and Marketing

- Digital Communication: concept, types, reach and access.
- Analysis of websites and development of webpage, blogs.
- Tools and methods to create digital designs for web pages.
- Digital marketing tools and techniques.
- Cyber security across digital platform.

Practical:

1. Interact with media in organizing programmes on current issues.
2. Apply the approaches of social advertising to create awareness on important issues related to the society.

References:

1. Paul Martin, Thomas Erickson, Social Media: Usage and Impact, Publisher: Global Vision Publishing House, Edition: 2, 2019
2. Francis Philip Barclay (Editor), Boobalakrishnan N. (Editor), Social Media in India: Regulatory Needs, Issues and Challenges, 2022

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-II): FCS131

FOOD MICROBIOLOGY AND FOOD SAFETY

(Credits: Theory-2, Practical-1)

Course Description:

Food microbiology comprehends the study of microorganisms that colonise, modify, and process, or contaminate and spoil food. It is one of the most diverse research areas within microbiology. It comprises a wide variety of microorganisms including spoilage, probiotic, fermentative, and pathogenic bacteria, moulds, yeasts, viruses, prions, and parasites. Food safety aims at inactivating and controlling the growth of spoilage and pathogenic microorganisms, insuring shelf-stable and healthy foods.

Course Objectives:

- Obtain an insight into history of micrology.
- Develop an understanding of classification and characteristics of microorganisms.
- Understand the structure, composition, biochemical characteristics and associated diseases of bacteria, viruses and fungi.
- Learn the various aspects of food safety.
- Understand about food laws and labeling.

Course Outcomes:

- Explain the interactions between microorganisms and the food environment, and factors influencing their growth and survival.
- Explain the significance and activities of microorganisms in food.
- Describe the characteristics of food borne, waterborne and spoilage microorganisms, and methods for their isolation, detection and identification.
- Explain the effects of fermentation in food production and how it influences the microbiological quality and status of the food product.
- To realize the significance of food safety and protection of food against the disease outbreaks caused by various microorganisms and contaminants.

Unit-I: Introduction of Microbiology

- Overview of History of Microbiology and Scope of Microbiology
- Classification of microorganisms.
- General Characteristics of microorganisms: bacteria, yeast, moulds, fungi, virus, protozoa and algae.
- Microscope and its usage.

Unit-II: General Characteristics of Microorganism

- Bacteria: morphology, structure, growth and reproduction, gram (-) ve and gram (+) ve bacteria and associated diseases.
- Fungi: morphology, structure, composition, classification, fungal infections and associated diseases
- Virus: morphology, structure, composition, classification, viral infections and associated diseases

Unit-III: Role of Microorganism in Home

- Role of microorganisms in fermentation of food
- Therapeutic importance of fermented foods
- Importance of micro- organisms in home

Unit-IV: Importance of Microorganism in immunity

- Common antibiotics
- Food poisoning and food infection
- Immunological principles, antigens, antibodies and types of immunity

Unit-V: Role of Microorganism in Home and food industry

- Food Spoilage- Spoilage of different food group- cereal, pulses, dairy products eggs, & poultry, fruit and vegetables.
- Food Safety- General Principles involved in their preservation, Low temperature preservation: Lethal effects of chilling, Freezing and Thawing; High temperature preservation: Pasteurization, sterilization, canning, thermal death time, Dehydration, Chemical preservation, Irradiations and its toxic effects.

Practical:

1. Autoclaving and sterilization procedures of glassware.
2. Preparation of different culture media and demonstration of sterilization procedure for media and equipment.
3. Isolation techniques of microbial cultures from soil, water and food
4. Determining the number of viable cells in the culture (standard plate count).
5. Staining of microorganisms
6. Culturing and identification of microbes (Yeasts and Moulds) in different food samples.

References:

1. A textbook of microbiology, RC Dubey, DK Maheshwari, S Chand & Company LTD, Second Edition, New Delhi-110055.
2. Text Book of microbiology, PC. Trivedi, Sonali Pandey, Seema Bhaduria, Aavishkar Publishers, Distributors Jaipur 302 003 (Raj.) India
3. Fundamental Food Microbiology, Bibek Ray, Arun Bhunia, 5th Edition, CRC Press
4. Banawart GJ. (1989). Basic Food Microbiology. 2nd Ed. AVI Publications.
5. Frazier, J. & Westhoff, D.C. (1988). Food Microbiology. 4th Ed. McGraw Hill.
6. Jay, J.M., Loessner, M.J. & Golden, D.A. (2005). Modern Food Microbiology. 7th Ed. Springer.
7. Ray, B. (2004). Fundamentals of Food Microbiology. 3rd Ed. CRC
8. Species, J.F.T. Food Microbiology Protocols. Humana Press Tolowa.
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DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-II): FCS132
TRADITIONAL TEXTILES AND COSTUMES OF INDIA
(Credits: Theory-2, Practical-1)

Course Description:

India has a diverse and rich textiles and costume tradition. Textiles and costumes of each states in India speaks volume of their culture. The course includes the traditional textiles and costumes from different regions of India. It deals with the history and designing details of each textiles and costumes. It also explains factors like changing times, social life, work style, seasons reciprocal cultural exchanges, physical features, cultural affinities, political history, religious beliefs and climatic conditions influencing the costume and textile designing. It gives hand on experience to create traditional embroidered samples.

Course Objectives:

- Understand the Indian traditional history and its unique textile traditions
- Develops an understanding of the classification of traditional textiles based on the process of making it.
- Learn to differentiate traditional textiles from different parts of the country.
- Learns the characteristic features of the traditional costumes of different states of the India.
- Develop an understanding of the techniques of traditional embroidery

Course Outcomes:

A successful completion of this course will enable students to

- Acquaint with Indian Textile and Clothing culture
- Analyse traditional textiles based on the process of making it.
- Understand the physical, geographical, cultural influence on costumes and textiles.
- Differentiates traditional textiles from different parts of the country.
- Appreciates the traditional Textiles and Costumes
- Utilize traditional costume and textiles in contemporary context.
- Understands the techniques of traditional embroidery.

Unit-I: Introduction

- Classification of Traditional Textiles of India
 - Painted and printed, Resist dyed, woven and embroidered
- Traditional Costume and Culture
 - Influence of historical, economic, political and socio cultural aspects on the evolution of traditional costumes.

Unit-II: Ornamented and resist dyed textiles (Origin, material & techniques used)

- Pigment painted textiles
 - Patachitra, Pichhavi and Phad
- Mordant painted textiles
 - Kalamkari-*Masulipatnam and Srikalahasti*, Mata-ni- pacchedi
- Printed textiles
 - Hand block printed, Ajrakh, Rogan, Sanganer, Bagh
- Yarn resist
 - Patola, Mashru, Ikat, Bandhana
- Fabric resist
 - Sugadi, Bhandej, Laheriya

Unit-III: Woven textiles (From Northern India)

Origin, material & techniques used

- Rajasthan – Kota Doria
- Gujarat – Sujani, Tangaliya, Pachhedi
- Madhya Pradesh – Chanderi, Maheshwari
- Uttar Pradesh – Brocades
- West Bengal – Dacca muslin, Baluchari Tangail,
- Shawls from Kashmir, Assam and Nagaland

Unit-IV: Woven textiles (From Southern India)

Origin, material & techniques used

- Maharashtra- Paithani, Himroo
- Andhra Pradesh and Telangana – Dharvaram, Venkatgiri, Gadwal and Narayanpet
- Karnataka – Ilkal, Khann
- Tamil Nadu- Kanjeevaram

Unit-V: Traditional Costumes of India

- Traditional costumes of Northern India
- Traditional costumes of Western India
- Traditional costumes of Southern India
- Traditional costumes of Eastern India
- Traditional costumes of Central India

Practical:

1. Learning the techniques of following traditional embroideries with emphasis on base material, threads and motifs used.
 - a. Kashida of Kashmir
 - b. Chamba of Himachal Pradesh
 - c. Phulkari and Bagh of Punjab
 - d. Chikankari of Uttar Pradesh
 - e. Kantha of Bengal
 - f. Embroideries of Manipur
 - g. Embroideries of Gujarat
 - h. Gold and Silver embroidery
 - i. Bead work
2. Preparation of portfolio with pictures of traditional textiles with the descriptive analysis

References:

1. Bhatnagar P. (2004), Traditional Indian Costumes and Textiles, Abhishek Publications, New Delhi.
2. Chisti R.K., (2013) Sari tradition and beyond, Roli Publication
3. Dawson, R. (1976). A Complete Guide to Embroidery. London & New York: Marshall Cavendish Publishers.
4. Gillow J & Barnard N (2014), Indian Textiles, 1st Edition, Thames & Hudson, London
5. Gosh, G.& Shukla G. (2014) Ikat textiles of India, 1st Edition, A.PH publishing, New Delhi
6. Ghurye G. S.(1995), Indian Costume, Popular Prakashan, Bombay
7. Irwin, J. H. & Hall, M. (1973). Indian Embroideries. Ahmedabad:Historic Textiles of India at Calico Museum of Textiles.
8. Karolia, A. (2019), Traditional India Handcrafted Textiles: Techniques, Processes and Designs Vol.I and II, Niyogi books, Delhi.
9. Pathak A. (2006), Indian Costumes, Roli Books, Mumbai.
10. Saraf, D. N. (1982).Indian Crafts. New Delhi: Vikas Publishing House Limited.
11. Singh M. (2011) Traditional and Beyond Handcrated Indian Textile, Roli Books Pvt. Ltd, New Delhi.
12. S. Srivastava (2013) Natural and manmade fibres, Pushpa Publication House, Prayagraj.

SEMESTER-VII

Course Code: FCS133
RESEARCH METHODOLOGY
(Credits: Theory-2 & Practical-0)

Course Description:

This course will present the scientific method within the context of applied social science. Research techniques and methods will be examined for the formulation of hypotheses, development of testable objectives, experimental design, subject selection, data collection, data analysis and interpretation and report preparation. This course will focus on laboratory and field based methods and simple statistical procedures for the analysis of data. Students will apply the concepts and methods in laboratory and field exercises.

Course Objectives:

- To provide knowledge of the basic principles of the research.
- To locate information necessary to conduct research, computerized databases.
- To provide critical understanding of reviewing research reports and to synthesize a body of literature.
- To provide knowledge of general research designs, experimental methods and good research practices. Students will be able to select appropriate experimental designs to test hypotheses.
- To conduct simple statistical analyses of data and to interpret the results of the analyses.
- To draw conclusions from the research and to assess the generalizability of study results.
- To write research reports and to present findings to colleagues.

Course Outcomes:

- The student will acquire knowledge of the basic principles of the research.
- The student will be able to locate information necessary to conduct research, to use computerized databases, and be familiar with community sciences.
- The student will be capable of critically reviewing research reports and to synthesize a body of literature.

- The student will be able to develop testable hypotheses.

Unit-I: Basics of Research

- **Research:** meaning, definition, selection of a research problem, justification of a research problem
- **Process of data collection:** primary and secondary data collection methods
- **Type of researches:** analytical, descriptive, experimental, empirical, longitudinal, cross sectional, cohort, survey

Unit-II: Research Methodology

- **Variables:** meaning, types of variables
- **Hypothesis:** meaning, characteristics, types, elements of a good hypothesis
- **Sampling:** probability and non-probability sampling techniques

Unit-III: Qualitative Data Collection Method

- Qualitative research.
- Social mapping
- Observation
- Participatory rural appraisal
- Participatory learning and action
- Focus group discussion
- Case Study
- Key informant interview
- In-depth Interview

Unit-IV: Data Analysis

- Scales of Measurement: nominal, ordinal, interval and ratio
- Parametric and Non-parametric test
- Classification of Data: one-way classification, two-way classification and three-way classification
-

Unit-V: Statistical Analysis and Interpretation

- Measures of Central Tendency: Mean, Median and Mode
- Standard Deviation
- Correlation Coefficient: types of correlation, Karl's Pearson Method
- Rank Correlation
- Regression
- Analysis of Variance (ANOVA): one way ANOVA and two way ANOVA
- Chi-square Test
- T-test

References:

1. Bandarkar, P.L. and Wilkinson T.S. (2000): “Methodology and Techniques of Social Research”, Himalaya Publishing House, Mumbai. Page 7 2.
2. Batnagar, G.L. (1990): “Research Methods and Measurements in Behavioural and Social Sciences”, Agri. Cole publishing Academy, New Delhi.
3. Kothari, C.R. (2004): “Research Methodology (Methods and Techniques)”. New Age International (p) Ltd., New Delhi.
4. Singh, R.K. (2000).Using English in Science & Technology, Prakash Book Depot, Bareilly.
5. Wren & Martin (2005). High School English Grammar and Composition, S.Chand.

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-III): FCS134

FAMILY DYNAMICS

(Credits: Theory-2, Practical-1)

Course Description:

The course will help the students understand the function and scope of family dynamics and the different stages of the family life cycle. It will focus on how significant events in a person's life bring about a change in their roles and family dynamics and how they can cope up with these changing roles. The course will also develop insight among the students regarding various forms of family crisis and how the cohesion between the family members during challenging times can help overcome them. The students will get to know about the different agencies and their roles like marriage and family counsellors, therapists and rehabilitation centres for looking forward to emotional support during difficult times.

Course Objectives:

- Understanding the function, role and scope of family dynamics
- Understanding the different stages of the family life cycle
- Understanding the gender norms in family dynamics
- Deeper understanding of forms of family crisis and their management
- Discussing the factors promoting family cohesion, love and support
- Knowing about the different agencies offering support to families and healing broken and difficult relationships

Course Outcomes:

- Explaining the function, role and scope of family dynamics
- Explaining the different stages of the family life cycle
- Explaining the gender norms in family dynamics
- Developing deeper understanding of forms of family crisis and their management
- Elucidating the factors promoting family cohesion, love and support
- Contacting/consulting different agencies offering support to families and healing broken and difficult relationships

Unit-I: Function, Role and Scope of Family dynamics

- Understanding Family Dynamics- Definition, function and scope
- Factors that shape roles, relationships and family dynamics (family size, age composition, structure, social and financial status, gender and ordinal position, power, hierarchy and patriarchy, employment) and how these dynamics shape individual personality and behaviour.
- Change and evolution of the family - Family life cycle and stages

Unit-II: Understanding Gender norms and changing roles in family dynamics

- Changing roles and dynamics through significant life events: romantic relationships, partner selection, marriage, childbirth, parenting, career trajectories and economic status, health issues, loss of loved ones.
- Gender norms and roles in family dynamics

Unit-III: Understanding forms of family crisis

- Forms of family crisis: Marriage, divorce/separation, remarriage, financial instability, poor work-family balance, illness, death, childlessness, child abuse/neglect, family violence, peer pressure, addiction, rape, suicide, unemployment, natural disasters, epidemics and wars.

Unit-IV: Promoting family cohesion, love and support

- Family cohesion- the role of effective communication, compassion, perspective taking, role distribution, positive conflict resolution, and teamwork.

Unit-V: Role of agencies in healing broken and difficult relationships

- Agencies offering support: Marriage and family therapists, Family courts, Child guidance clinics, counselling and rehabilitation centres.

Practical:

1. Group discussion/role play/simulations on interpersonal relationships
2. Developing an album on the stages of the family life cycle
3. Discussion on cultural variations in interpersonal relationships, family dynamics, verbal vs. non-verbal communication, and social networking.

References:

1. Arnett, J.J. (2005). Youth, cultures and societies in transition: The challenge of growing up in a globalized world. In F. Gale & S. Fahey. (Eds.), *Youth in Transition – The challenges of generational change in Asia* (pp 22-35). Bangkok: Regional Unit for Social and Human Sciences in Asia and the Pacific.
2. Baron, R. A., Byrne, D., & Branscombe, N. R. (2006). *Social psychology*. ND: Pushp Print Services.
3. Chaudhary, N., & Shukla, S. (2019). Family, identity, and the individual in India. In G. Mishra (Ed.), *Psychology: Volume 2: Individual and the social: Processes and issues* (pp.143-189). New Delhi, India: Oxford University Press.
4. D’cruz, P., & Bharat, S. (2001). Beyond joint and nuclear: The Indian family revisited. *Journal of Comparative Family Studies*, 32(2), 167-194.
5. Duck, S. (1998). *Human relationships*. ND: Sage.
6. Ganguly-Scrase, R. (2007). Victims and agents: Young people’s understanding of their social world in an urban neighbourhood in India. *Young*, 15, 321-341.
7. Gardiner, H.W., Mutter, J.D. & Kosmitzki, C. (1998). *Lives across cultures: cross-culture human development*. Boston: Allyn and Bacon.

NGO (Non- Governmental Organization) MANAGEMENT

(Credit: Theory-2, Practical-1)

Course Description:

NGO Management is a course to train the aspirants for their career, working for the upliftment of the underprivileged and for those who spend most of their career, working in the areas like environment, health, education, social service and community development.

Course Objectives:

- Develop and understanding of evolution, growth and development of Non-Government Organisations
- Learn the legal frame work for establishing NGO's
- Enhance skills and techniques of project evaluation / Resource Mobilization
- Acquire specific knowledge on project Management
- Learn the concept of team building, peoples participation and self-understanding

Course Outcomes:

- Explain the needs and importance of NGO's and Management
- Learn the legal framework for establishing NGO's
- Describe the concepts, principles of Project Management and Formulation of Detail Project Report
- Analyse the key issues in Government policies and programmes

Unit-I: Concept of NGO

- Meaning of NGO and GO
- Difference between government organization(GO) and Non-government Organization (NGO)
- Principles of NGO
- Characteristics of good NGO
- Structure and functions of NGO
- Classification of NGO
- Origin and development of NGO

Unit-II: Legal Frame Work for Establishing NGO

- Legal – rational structure of Non profits
- Trust and Societies with special reference to Trust and Registration Acts
- Foreign contributions and Regulation Act (FCRA)
- Statutory obligations, Income Tax Exemption (80-G, 12-A and 35 NC)
- Rules and Regulations – Resource Mobilization
- Methods and Techniques of fund raising
- International, national and local levels
- Schemes for NGO's under various Ministries of Government of India
- NABARD and Human Rights Commission

Unit-III: Project and Management in NGO

- Concept, objectives, principles and Types of projects
- Project implementation and management
- Monitoring and Evaluation – Network Analysis Programme (Project)
- Management and Review Techniques (PERT), Critical Path Method (CPM), Participatory Rural Appraisal (PRA) – Tools and Techniques, Strength, Weakness, Opportunity and Challenges (SWOC) analysis.

Unit-IV: NGO Management

- Organizational types and structures
- NGO management competencies
- Team Building – concept and significance, Role of effective team building in management of NGO's
- Self-Assessment : Analysis & Action plan

Unit-V: Policies and Programmes

- Government laws, partnership model, Governing Schemes through ministries /Department / Bodies, government grant-in-aid
- New regulations for NGO and government control

- National policy on voluntary sector under five year plans.

Practical:

1. Visit an NGO and learn the aspect of formation, management and administration
2. Carryout a case study on NGO's and understand the techniques of NGO's
3. Preparation of model project report with reference to action AID
4. Apply Network analysis and PRA techniques to find out the available resources in the target area of NGO
5. Interaction with NGO's officials and findout their problems and prospects
6. Interact with NOGs officials and how the Government policies and programmes (NGO's)

References:

1. Clark John. (1991). Voluntary Organizations: Their Contribution to Development. London: Earth Scan
2. Dorothea Hilhorbat. (2003). the real world of NGO's, Discourses, Diversity and Development. New Delhi: Zed books Ltd.
3. Jain R.B. (1995).NGO's in Development Perspective. New Delhi: Vivek Prakasan
4. Joel, S.G.R., and Bhose. (2003).NGO's and Rural Development – Theory and Practice. New Delhi: Concept Publishing Company
5. John M. Riley. (2002). Stakeholders in Rural Development – Critical Collaboration in State – NGO Partnerships. New Delhi: Sage Pblications
6. Julie Fisher. (2003). Governments, NGO's and the Political Development of the Third World. Jaipur: Rawat Publications
7. Julie Fisher.(2003). Non Governments – NGO's and the Political Development of the Third World. New Delhi: Rawat
8. Kalyan Sengupta. (2013). an Easy Guide to NGO. Kolkata: Book Corporation
9. Kumar, A. (2003). Social Change through NGO's. New Delhi: Anmol Publishers
10. Ravi Shankar Kumar Singh. (2003). Role of NGO's in Developing Countries (Potentials, Constraints and Policies). New Delhi: Deep & Deep Publications (P) Ltd

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-III): FCS136

THERAPEUTIC NUTRITION AND YOG

(Credits: Theory-2, Practical-1)

Course Description:

Therapeutic nutrition explores the role played by therapeutic diets in the treatment of chronic disease and other nutritional disorders. The course introduces the principles of the nutrition care process and will give knowledge and experience in nutrition assessment techniques and intervention strategies as applied to chronic disease and other nutritional disorders. Yoga and good nutrition can work hand in hand to balance mind and body, supporting emotional and physical well-being at the same time.

Course Objectives:

- To develop intellectual and practical skills of the students in the field of therapeutic nutrition.
- To identify patients at risk for major nutrition – related health problems.
- To identify the principles and explain the objectives of diet therapy.
- To identify most common therapeutic diets used in clinical care.
- To understand the holistic concept of yoga and nutrition that aims at cleansing, strengthening, and developing all levels of our human existence.

Course Outcomes:

- Integrate knowledge of research principles and methods associated with nutrition and dietetics practice.
- Use effective and appropriate communication skills in providing information, advice and professional opinion to individuals, groups and communities.
- Collect, organize and assess data relating to the health and nutritional status of individuals, groups and populations.
- Demonstrate initiative and judgment using a professional, ethical and entrepreneurial approach advocating for excellence in nutrition and dietetics.
- Independently plan and execute a research project in regard to nutrition and dietetics practice.

Unit-I: Concepts in Diet Therapy

- Growth and Scope of Dietetics
- Types of Diet (DASH diet, Mediterranean diet, Paleo diet, FODMAP diet, Keto diet VLCD etc.) and importance of balanced diet
- Purposes and Principles of Therapeutic Diets
- Modifications of Normal Diets
- Classification of the Therapeutic Diets,
- Use of Food Exchange Lists
- Role and characteristics of Dietitians
- Diet Counselling, Team Approach to Nutritional Care

Unit-II: Medical Nutrition Therapy in Obesity, Underweight and Diabetes Mellitus

- Etiology, Pathophysiology, Clinical symptoms, metabolic alterations,
Assessment/Indicators, Lifestyle & Dietary guidelines for the following conditions :
- Obesity
- Underweight
- Diabetes Mellitus

Unit-III: Medical Nutrition Therapy in Gastro Intestinal Disorders and Diseases

of the liver

- Etiology, Pathophysiology, Clinical Symptoms, Assessment/Indicators, Lifestyle & Dietary guidelines for the following conditions
 - Diarrhea,
 - Constipation
 - Peptic Ulcer
 - Jaundice
 - Hepatitis
 - Fatty Liver
 - Cirrhosis
 - Hepatic Coma

Unit-IV: Medical Nutrition Therapy in Diseases of the Cardio Vascular System and Kidney Diseases

- Etiology, Pathophysiology, Clinical Symptoms, Lifestyle & Dietary guidelines for the following conditions:
 - Atherosclerosis,
 - Hyperlipidemia,
 - Ischemic Heart Disease,
 - Congestive Heart Failure,
 - Hypertension
 - Nephrotic Syndrome
 - Nephrolithiasis
 - Acute and Chronic Renal Failure
 - Dialysis – Principles and Types
 - Kidney Stones

Unit-V: Concept of Yoga and Yogic Diet

- Significance of Yoga Practices in health promotion:
 - On Physical Health
 - On Mental health
- Relevance of Yoga in modern age
- Scope and Misconceptions about yoga
 - Meaning and definition of:

- Mithahara (moderate/ balanced food)
- Pathaya-ahara (beneficial and preferred diet)
- Apathaya ahara (Harmful and prohibited diet)
- Yogic diet for practice of Prayanama
- Concept of Sattvik, Rajasik and Tamasik foods
- Therapeutic nutrition vis avis practice of Yoga

Practical:

1. Preparation of Hospital Diets- Modification of diet with respect to texture, consistency and nutrients
2. Modification of Diets in Obesity
3. Modification of Diets in Underweight
4. Modification of Diets in Diabetes Mellitus
5. Diets for Febrile Conditions – TB, Typhoid
6. Modification of Diets in Peptic Ulcer, Constipation and Diarrhoea
7. Modifications of Diets in Liver Diseases – Jaundice, Hepatitis and Cirrhosis
8. Diets for Nephritis, renal Failure and renal Calculi, Protein Restricted Diets
9. Diets for Cardiovascular diseases – Sodium Restricted, Fat Controlled
10. Modification of Diet for Cancer Patients and HIV Infected Person
11. An Overview/desk review on DASH diet, Mediterranean diet, Paleo diet, FODMAP diet, Keto diet VLCD etc.

References:

1. Srilakshmi, B. *Dietetics* ,New Age International P. Ltd., New Delhi, 2018.
2. *Dietary Guidelines of Indians – A Manual*, National Institute of Nutrition, Hyderabad, 2015.
3. Garg, M. *Diet, Nutrition and Health*, ABD Publishers, 2006.
4. Krause, M.V. and Mahan, L.K. *Food, Nutrition and Diet Therapy*, 9th Ed., W.B. Saunders Company, Philadelphia, 2019.
5. Maimun Nisha, *Diet Planning for Diseases*, Kalpaz Publishers, 2016.
6. *Dietary Guidelines of Indians – A Manual*, National Institute of Nutrition, Hyderabad, 2011.
7. Brown, J (2014).*Nutrition now* (7thed). Wadsworth, USA, ISBN- 13:978-1-133-93653-4, ISBN 10:1-133-93653-9

8. Nelms M, Sucher K (2015). *Nutrition Therapy and Pathophysiology*. (3rd edition)
Cengage Learning, USA. ISBN-13: 978-1305111967, ISBN-10: 1305111966

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-III): FCS137

APPAREL DESIGNING AND CONSTRUCTION

(Credit: Theory-2, Practical-1)

Course Description:

This programme provides a detailed study and the foundational understanding of the composition of apparel and their construction method by using various techniques of pattern making, and to create an understanding of the principles, processes, and techniques that are fundamental to efficient and effective clothing construction. This course also develops knowledge about the parameters and specifications useful in selecting the materials required for apparel construction, and their handling technique. This course also prepares students for professional careers in the garment industry.

Course Objectives:

- To impart in depth knowledge of style reading, pattern making and garment construction techniques.
- To develop and understand the principles of pattern making and draping.
- To inculcate various garment construction techniques among students.

Course Outcomes:

- Learner will develop skills in apparel construction.
- Learn basic principles of garment construction.
- Students will learn different techniques of making garments with the help of pattern making and draping.

Unit-I: Cutting

- **Cutting**
 - Selection and procurement of raw material
 - Cutting room
 - Production process in cutting room
 - Precautions and handling of cutting devices
 - Different types of cutting tools

Unit-II: Sewing

- **Sewing**
 - Types of stitches and seams
 - Sewing machine and their types
 - Machine beds
 - Other attachments

Unit-III: Finishing & Embellishment

- **Finishing and Embellishment**
- Pressing technology
- Fusing technology

Unit-IV: Methods of Pattern making

- Drafting
- Flat pattern
- Draping

Unit-V: Paper Pattern

- Commercial paper pattern
- Layout

Practical:

1. Designing through flat pattern

- a. Dart manipulation
- b. Adding fullness
- c. Contouring

2. Designing through draping

- a. Basic draping principles and techniques
- b. Developing pattern

References:

1. BinaAbling, Fashion sketch book, Fairchild publications, New York.
2. Claire Shaeffers, Fabric sewing guide, Chilton book company, Randot, Pennsylvania.
3. Gioello and Berke, Figure type and size rang, Fairchild publications, New York.
4. Grate and Storm, concepts in clothing, McGraw Hill Book Co., New York
5. Helen Joseph Armstrong, Pattern making for fashion designing, Pearson Education
6. Harold Carr and BarabaraLathan, The technology of Clothing Manufacturer, Oxford BSP professional book, London
7. Natalie Bray, Dress Fitting, Blackwell science ltd.rth publication
8. Pamela Stringer, Pattern drafting for dressmaking, Batsford ltd.
9. Slamper, Sharpo and Donnell, Evaluating apparel quality, Fairchild publications, New York.

GENDER EMPOWERMENT

(Credit: Theory-2, Practical-1)

Course Description:

The course will provide an insight to the students about gender concepts, gender roles and gender stereotypes. The students will gain understanding about patriarchy in India, feminist perspectives and the issues and concerns related to the female sex in India. The students will also learn about the role of media in promoting stereotypes and will know about the laws and policies for girls and women framed by the government of India.

Course Objective:

- Understanding gender concepts, gender roles and gender stereotypes
- Understanding patriarchy in India and the feminist perspectives
- Understanding the issues and concerns related to women
- Learning the role of media in promoting gender stereotypes
- Knowing about the government led laws and policies for the protection and promotion of females

Course Outcome:

- Explaining gender concepts, gender roles and gender stereotypes
- Explaining patriarchy in India and the feminist perspectives
- Describing the issues and concerns related to women
- Defining the role of media in promoting gender stereotypes
- Disseminating knowledge about the government led laws and policies for the protection and promotion of females

Unit-I: Conceptualizing Gender and Gender Empowerment

- Defining terms – sex, gender, masculinity, femininity
- Socialization for gender–gender roles and stereotypes

Unit-II: Patriarchy in India and the feminist perspectives

- Patriarchy and social institutions

- Perspective on feminism

Unit-III: Women and girls: Issues and Concerns

- Demographic profile
- Issues and concerns related to girls and women in India

Unit-IV: Gender and role of Media

- Role of media in promoting gender stereotypes

Unit-V: Government led laws and policies for women

- Laws for girls and women protection in India
- Policies for girls and women protection in India
- Programmes for girls and women protection in India

Practical:

- Understanding gender in diverse social groups through visits to relevant organizations.
- Understanding gender realities in different social groups.
- Exploring the concept of gender through audio-visual sources and workshops.

References:

1. Saikia, N.(2008).*Indian Women: A socio- legal perspective*. New Delhi: Serials Publication
2. Bhasin, K.(2014).*Feminism and its Relevance in South Asia*. New Delhi: Raj Press.
3. Bhasin, K. (2017). *Exploring Masculinity*. New Delhi: Raj Press.
4. Bhasin, K.(2017). *What is Patriarchy?* New Delhi: Raj Press. Indian Journal of Social Work
5. Bhasin, K.(2017).*Understanding Gender*, New Delhi:Raj Press.
6. Kishwar, M.(1999). *Off the Beaten Track: Rethinking Gender Justice for Indian Women*. New Delhi: Oxford University Press.

NUTRITION FOR HEALTH & PHYSICAL FITNESS

(Credits: Theory-2, Practical-1)

Course Description:

Integration and application of principles of sound nutrition and physical activities to optimize the physiological, psychological, and social lifelong development of the individual and use of scientific principles and current technological advances, helps to assess and evaluate physical fitness, body composition, dietary patterns, energy expenditure, and their interrelationships.

Course Objectives:

- Understand the Importance of Nutrition, Fitness and Health
- Gain Knowledge on Exercise Physiology and Nutrition for Physical Activity
- Comprehend the Technique and Gadgets for Physical Activity Training
- Understand the Risks of Hypokinetic Diseases
- Understand the principles of Exercise and Stress Management

Course Outcomes:

Upon successful completion of the course students shall be able to:

- Explain the principles of physical fitness and nutrition (such as body composition, energy intake, energy expenditure, and the acute and chronic physical changes related to exercise and nutrition) complement each other in helping to develop physiological well-being and overall health.
- Explain the principles of fitness and nutrition (such as setting realistic short-term behavior change goals and the relationship of exercise and diet to stress reduction) complement each other in helping to develop psychological well-being and overall health.
- Identify some of the social and cultural influences on food habits and exercise/activity patterns.
- Evaluate current nutritional information with regard to its contribution to Health and physical fitness.

Unit-I: Health and Fitness

- Definition, Components and Relationship among Physical Fitness, Wellness and Health
- Personalized approach
- Benefits of fitness training

Unit-II: Exercise Physiology and Nutrition for Physical Activity

- Pulmonary ,Cardiovascular Regulation and integration,
- Endocrine and exercise
- Nutrition & Physical performance
- Physical fitness: cardio respiratory fitness, muscular strength, muscular endurance, body composition and flexibility
- Endurance Training-Muscle and Muscle fibres
- Optimal Nutrition and Energy needs for optimum performance e.g. athletes
- Exercise and fluid loss
- Hydration
- Nutrition supplements, Ergogenic Aids

Unit-III: Physical Activity Training

- Aerobic and anaerobic training -To enhance Cardio Vascular Endurance,
- Flexibility and Body Composition,
- Measurement of PAL,
- Benefits of Fitness training and Gadgets for measuring PA –
- Motorized Treadmill, (aerobic Fitness),
- Functional Trainer,
- Fluid Rower (Upper body),
- Elliptical Bicycle and
- Bicycle Ergometer (Lower body),
- Stretch Trainer (Whole body),
- Multi Gym (9, 12, 16 station) for different muscle groups.

Unit-IV: Diseases due to Faulty/Poor Food Habits and Physical Inactivity

Life Style related diseases/disorders (Non communicable Disease conditions) - Meaning Causative Factors and Diet Modification/evidence based guidelines for

- Underweight,
- Obesity,
- Diabetes mellitus,
- Hypertension,
- Cancer
- Cardiovascular Disease,
- Anaemia

Unit-V: Exercise, Stress and Health Management

- Stress Assessment and Management
- Techniques-Exercise at medium and high altitudes, Underweight, Overweight and Obesity, Relaxation Techniques,
- Yoga and Meditation for Health,
- Clinical Exercise
- Physiology for Cancer,
- CV and Pulmonary rehabilitation

Practical:

1. Aerobic and Anaerobic Exercises
2. Relaxation Techniques,
3. Stress Assessment and Management
4. Yoga and Meditation
5. Visit to Fitness Centre: Observational report and 2 Case studies
6. Desk review of ergogenic aids available in the market
7. Use of non-invasive equipment's like Pedometer, pulse oximeter, step test, Omron's body composition analyser, home monitoring BP equipment to assess the nutritional status

References:

1. Werner W. K Hoejer (1989), *Life time Physical Fitness and Wellness*, Morton Publishing Company, Colorado.
2. Mishra, S. C (2005) *Physiology in Sports*. Sports Publication, New Delhi
3. Greenberg, S. J and Pargman, D (1989) *Physical Fitness – A Wellness Approach* Prentice Hall International (UK) Limited, London
4. Swaminathan M. (2008) *Essentials of Food and Nutrition* Bangalore Printing Publishing Co.New Delhi
5. McArdle, W. D, Frank I. Katch, F. I and Victor L. Katch (1996) *Exercise Nutrition: Energy Nutrition and Human Performance*. William & Wilkin Publishing USA.
6. Mahan, K and Stump, E. S (1996) *Krause Food and Nutrition and Diet Therapy* W.B Saunders Company, USA.

TEXTILE FINISHING

(Credits: Theory-2, Practical-1)

Course Description:

This course covers the basic principles of textile finishing and the application of various chemical, mechanical, thermal, and wet finishing processes based on the need and chemistry of the fibres. This course deals with the basic types of the finishing process along with the influence of chemicals and auxiliaries on the fabric. The course aims at developing knowledge of finishing of textile required to be employed in the field of textile finishing industry.

Course Objectives:

- Obtain a broad understanding about textiles finishes
- Know about various types of textile finishes.
- Acquire deep knowledge about each textile finishes.
- Study about various types of machine used in mechanical finishes.
- Study about chemicals used in the chemical finishes.
- Know about various types of mechanical and chemical reaction that occurs at the time of finishing.

Course Outcomes:

- Develop an understanding of concepts and basics of textiles finishes.
- Understand the key terms of textile finishing.
- Develop critical understanding of the techniques of textile finishing.
- Develop understanding that which fibres, yarn and fabrics is appropriate for specific finish.

Unit-I: Textile Finishing

- Introduction,
- Classification of textile finishes

Unit-II: Preparatory Processes

- Preparatory process of fabric for finishing
 - Desizing,
 - Singing,
 - Bleaching,
 - Scouring,
 - Carbonizing
 - Degumming.

Unit-III: Finishes for aesthetic value

- Finishes that improve aesthetic value of fabrics: Mercerization, Ammoniating, Wrinkle-resistance finish, Resin finish
- Finishes for dimensional stability: Shrinkage control, Durable press, permanent press

Unit-IV: Finishes to impart durability and comfort

- Finishes that impart durability: Abrasion resistant finish
- Finishes that provide comfort: Absorbent finish, antistatic finish
- Finishes for biological resistance: Anti-mildew finish, Moth-resistant finish

Unit-V: Functional finishes

- Finishes for environmental resistance: Soil-release finish, Water repellent finish, Water – proofing
- Finishes that impart body to fabric: Sizing, Weighting, surface coating
- Finishes that produce safety: Flame retardant, sanitizing, Insulation, Antibacterial finishes.

Practical:

1. Preparatory process of fabric for finishing:
 - a. Scouring
 - b. Bleaching
 - c. Desizing
 - d. Degumming
 - e. Mercerization
 - f. Development of Swatch file of various finished fabric.

References:

1. Choudhury, A.K. R. (2017). Principles of Textile Finishing. Woodhead Publication.
2. Durga Deulkar (1965). Household Textiles and Laundry Work. New Delhi, India: Atma Ram Publication.
3. Eiri board. Textiles Auxiliaries and Chemicals with Processes & Formulations. Nai Sarak, New Delhi, India: Engineers India Research Institute Publication.
4. Needles, L.H. (1986). Textile Fibers, Dyes, Finishes, and Processes. USA, New Jersey: Noyes publications.
5. R. Vatsala (2003). Textbook of textile clothing. ICAR publication.
6. Sekhri, S. (2011). Textbook of Fabric Science: Fundamentals to Finishing. India: PHI Learning Pvt. Ltd.
7. Smith, J.L. (2015). Textile Processing: Printing Dyeing Finishing. Chandigarh: Abhishek Publication.
8. V. A. Shenai (1980). Technology of textile processing: technology of finishing. Bombay, India: Sevak publication.

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-V): FCS141 ADOLESCENCE, ADULTHOOD AND AGEING

(Credits: Theory-2, Practical-1)

Course Description:

The course introduces students to the concept of adolescence, adult development and aging. It explains basic developmental transitions in adolescence, adulthood and late adulthood or old age. Various facets of adolescence and adult development across domains and developmental needs of the elderly are discussed. Cultural and gender differences in the experiences of ageing are included.

Course Objectives:

- Develop an understanding about the need and importance of studying child and adolescent development.
- Learn about the characteristics and developmental tasks of early and late adolescence.
- Learn about the familial and societal influences on adolescent development
- Learn key issues which influence adolescent development.
- Understand the theoretical significance of adulthood in life span development with special reference to aging
- Develop a culturally relevant understanding of issues and concerns of adulthood and aging
- Sensitize students to transitions in adult life and preparation for old age from a gender perspective
- Create awareness about policy provisions for adults and elderly across various contexts (work, family, retirement, health, welfare).
- Prepare students for outreach activities with varied groups of adults and elderly.

Course Outcomes:

- Explain the need and importance of studying adolescence as a distinctive stage of the life-span.
- Describe the characteristics and developmental tasks of early and late adolescence.
- Identify the familial and societal factors affecting development during adolescence.
- Analyse the key issues that influence adolescent development.

- Explain variations in the experiences of adulthood and old age across cultures and genders.
- Discuss factors that affect physical, cognitive and socio-emotional development during adulthood and old age.
- Identify developmental needs of varied groups of adults and elderly across contexts.
- Execute developmental programs of intervention for varied groups of adults and elders.

Unit-I: Adolescent Development: An Introduction

- Major characteristics and developmental tasks of adolescence
- Physical, psychological, emotional and social changes during adolescence
- Influence of family and peer relationships on development
- Impact of media and its influences on development and learning
- Changes in self-esteem, self-concept and identity formation in adolescence
- Development of gender roles and perceptions, changes in gender identity

Unit-II: Key issues in Adolescent Development

- Physical, psychological and social effects of substance abuse and risk behaviors
- Brief overview of aggression, juvenile delinquency, suicide, depression, eating disorders during adolescence

Unit-III: Stages of Adult Development and the Process of ageing

A Theoretical Overview

- Characteristics and developmental tasks of Early , Middle and Late Adulthood
- Theories of adult development and aging (Erikson's theory, Wisdom theories, Disengagement, Activity, Continuity theory, Ashrama Dharma framework)

Unit-IV: Development in Early and Middle Adulthood

- Physical changes and cognitive development in early and middle adulthood
- Changes in mental abilities - Crystallized and fluid intelligence, Information processing

-Speed, Attention, Memory, Problem solving and Creativity

- Life transitions and adjustments during early adulthood: Exploring sexual orientations, stable romantic relationships, alternative life choices, marriage, family life, parenting and care giving, social mobility
- Changes in interests, Social, emotional, vocational changes
- Relationships at midlife-marriage and divorce, changing parent-child relationships, grandparenthood, siblings, friendships
- Preparation for old age(From work to retirement, emotional, financial, social and familial transitions,)

Unit-V: Development in Old Age

- The phenomenon of aging-biological, psychological, sociological and functional age; optimal aging, normal aging, primary and secondary aging and successful aging
- Gerontology- Definition, concept, history, importance and scope
- Changing relationships in old age-marriage and divorce, widowhood, never-married, childless older adults, siblings, friendships
- Overview of Alzheimer, Dementia, Parkinson's disease

Practical:

1. Preparation of an album on developmental milestones of adolescents.
2. Carry out a case study of an adolescent boy and girl using multiple methods
3. Visit to old age home or specialized living arrangements for elderly.
4. Interviewing elderly couples about their relationship, life challenges and satisfactions
5. Discussion or awareness session on welfare policies and policy recommendations for older persons in India

References:

1. Berk, L.E. (2017). *Child development* (9th ed.).Pearson
2. Bhogle,S.(1999).Gender roles:The construct in the Indian context. In T.S. Saraswathi(Ed.),*Culture socialization and human development: Theory, research and applications in India*(p p. 278-300).New Delhi: Sage.
3. Kapadia, S.(2017) *Adolescence in Urban India: Cultural Construction in a Society in Transition*. Springer
4. Keenan, T., Evans, S.,& Crowley, K.(2016). *An introduction to child*

development. Sage.

5. Kumar, K.(1993). Study of childhood and family in T.S. Saraswathi & B. Kaur (Eds.).*Human development and family studies in India: An agenda for research and policy*, (pp.67-76).New Delhi: Sage.
6. Lightfoot, C., Cole, M., & Cole, S.(2012).*The development of children*(7thed.) New York: Worth Publishers
7. Santrock, J. (2017). *A topical approach to life span development* (9th ed.). New NY.: McGraw- Hill Higher Education.
8. Saraswathi, T.S.,& Kaur, B. (1993).*Human Development and family Studies in India-an Agenda for research and Policy*. New Delhi: Sage.
9. Saraswathi, T. & Oke, Meera. (2013). Ecology of Adolescence in India. *Psychological Studies*.
10. Saraswathi, T.S., Menon, S.,& Madan, A.(eds.) (2018) *Childhoods in India Traditions, Trends and Transformations*. New Delhi. Routledge.
11. Sinha, D., & Misra, R.C.(1999). Socialization and cognitive functioning. In T.S. Saraswathi (Ed.), *Culture, socialization and human development: Theory, research and applications in India* (pp.167-187).New Delhi: Sage.
12. Verma, S.,& Saraswathi,T.S.(2002). *Adolescence in India: Street urchins or Silicon Valley millionaires?* In B. B. Brown, R. W. Larson & T. S. Saraswathi (Eds.), *The world's youth: Adolescence in eight regions of the globe* (p. 105–140). Cambridge University Press.
13. Arnett, J.J., & Jensen, L.A. (2019). *Human Development: A cultural approach* (3rded.).New York: Pearson.
14. Cavanaugh, J., & Blanchard-Fields, F.(2011). *Adult development and aging* (7thed). Stamford, CT: Cengage Learning.
15. Kakar, S. (Ed.).(1993). *Identity and adulthood*. NewDelhi: Oxford University Press.
16. Lamb, S.E.(Ed.) (2012). *Aging and the Indian diaspora: Cosmopolitan families in India and abroad*. New Delhi: Orient Blackswan.
17. Menon, U. (2013). *Women, well-being and ethics of domesticity in an Odia temple Town*.New Delhi: Springer.
18. Rajan, I.S., Risseuv,C.,& Perar,M.(Eds.).(2008). *Institutional provisions and care for the aged perspectives from Asia and Europe*. NewDelhi: AnthemPress.
19. Reddy, P.A., Devi,U., & Harinath,N. (2010). *Ageing:The global*

phenomena: issues and strategies. New Delhi: Sonali.

20. Sahoo, F.M. (Ed.) (2009). *Behavioral issues in ageing: Care, concern and commitment*. New Delhi: Concept Publishers.
21. Sahu, C. (1988). *Problems of aging among Indian tribes*. New Delhi: Sarup & Sons.
22. Shankardass, M.K. (Ed.) (2020). *Ageing issues and responses in India*. New Delhi: Springer.
23. Soneja, S. (2001). *Elder abuse in India*. Report for the World Health Organization.
24. Srivastava, V. (2010) *Women and ageing*. New Delhi: Rawat Publisher.
25. Tanner, D., & Harris, J. (2007). *Working with the older people*. New York: Routledge publishers.
26. Tornstram, L. (2005). *Gerotranscendence: A developmental theory of positive aging*. New York: Springer.

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-V): FCS142

FOOD PROCESSING AND FOOD LAWS

(Credits: Theory-2, Practical-1)

Course Description:

This course helps to understand fundamental concept of food processing, factors causing food deterioration, principles of food preservation and development of different food products through various food processing techniques. This course develops insight regarding various laws and standards meant for food safety.

Course Objectives:

- To develop conceptual understanding of food processing, the principles behind the methods of preservations
- To develop different foods products by applying various food processing techniques
- To formulate preserved food products
- Acquire knowledge about various laws and standards for ensuring food quality and safety.

Course outcomes:

- To build an understanding of the nutritional implications of structure of food matrix, food quality and processing treatments.
- To impart industrial readiness to students in application of various food processing techniques on the nutritional and pharmaceutical profile of foods.

Unit-I: Fundamental of Food Processing

- Concept, prospects for future growth in India.
- Food spoilage and food preservation - principle, type and scope of food preservation.

Unit-II: Post Harvest Treatment

- Post Harvest Treatment-Harvesting, transportation, storage, packaging of different food groups.

Unit –III: Fruit Processing

- Fruit juice processing, Jam, Jelly, Marmalade, Puree, Paste, Sauce, Ketchup, Pickles. Fruits and vegetable preserves, Crystallized fruits.

Unit-IV: Beverages Processing

- Beverages Processing: Coffee, Tea, Confectionery foods, Candies, Toffees, Caramels, Chocolate products.
- Speciality and Functional foods: Introduction and Application. Organic food, Super food.

Unit-V: Low and Standard related to food safety

- Food Safety, Laws and Standards - Hazard Analysis and Critical Control Points (HACCP), Good Manufacturing Practices (GMP), Good Hygienic Practices (GHP), International Organisation for Standardization (ISO), Essential Commodities Act, Codex Alimentarius, World Trade Organisation (WTO), Technical Barrier to Trades (TBT), Sanitary Phyto-Sanitary (SPS) rules, Bureau of Indian Standards (BIS), AGMARK, Food Safety and Standards Act, 2006 (FSSA): Prevention of Food Adulteration Act (PFA), Milk and Milk Products Order (MMPO), Meat Food Products Order (MFPO), Fruits Products Order (FPO).

Practical:

1. Preparation of Jam, Jellies and Marmalades
2. Preparation of Puree, Paste, Sauce, Ketchup, Pickles
3. Preparation of Candies, Chocolates and Caramels

Reference:

1. Fellows, P. J. (2016). Food Processing Technology: Principles and Practice, Fourth Edition, Woodhead Publishing.
2. Kiron Prabhakar (2016). A Practical Guide to Food Laws and Regulations, Bloomsbury Professional, India.
3. Srilakshmi, B. (2015). Food Science. New Age International (P) Limited, New Delhi.
4. Manay, M. and Manay, S.N. (2014). Food Facts and Principles. New Age International (P) Limited, New Delhi.

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-V): FCS143

CAD IN TEXTILES AND APPAREL

(Credits: Theory-1, Practical-2)

Course Description:

CAD knowledge helps in imaging and perceiving imaginative designs in final form without producing any prototype. This course will introduce computer aided design (CAD) software and computer aided manufacturing (CAM) systems to the students. The technologies to assist in the creation, modification, analysis and optimization of a design has been covered. This can increase the productivity of the designers and improve the quality of their visualized designs and provide them with essential skills for integrating technology with creativity.

Course Objectives:

- Introduce Coral Draw Adobe Photoshop and Adobe illustrator software.
- Develops insights into the benefits of incorporating technology with creativity, by using advanced designing software.
- Acquaint with basics of computer aided pattern making and creating grading and markup plans.
- Develop specific skills sets that provide a strong foundation of fashion designing while understanding and incorporating all the aspects of digital production workflow.

Course Outcomes:

A successful completion of this course will enable students to:

- apply Coral Draw Adobe Photoshop and Adobe illustrator software.
- describes the basics of computer
- explains and relates the benefits of incorporating technology with creativity.
- compose design using different aspects of digital production workflow.

Unit-I: Basics of Computer

- Introduction to Vector and Raster graphics
- Understanding the colour models
- Understanding the interface and various tools of selected software

Unit-II: Introduction to CAD software

- Drawing tools and functions
- Corel draw
- Photoshop
- Illustrator
- Creating motifs for print and embroidery designs for fabrics.
- Creating a label and logo for design house.

Unit-III: CAM technologies (integration of CAD)

- Creating designs for embroidery, dyeing and printing
- Plain weave, Twill weave and satin weave simulations using weave design software
- Dobby and Jacquard pattern.

Unit-IV: Using CAD technology for Patternmaking

- Basic Bodice Block
- Princess Bodice
- Yoke Bodice
- Basic Sleeves
- Basic Skirt Block
- Basic Pant Block
- Grading of Patterns

Unit-V: Designing using CAD

- Designing Geometric, natural, abstract, stylized motif and using in garments
- Designing different types of weaves & using in garment

Practical:

1. Design a female garment, male garment and kids wear from the categories given below and also evaluate the cost.
 - a. Female garment categories Formal Wear/ Ethnic Wear/Casual Wear
 - b. Male garment categories Formal Wear/ Ethnic Wear/Casual
 - c. Kids wear categories Formal Wear/ Ethnic Wear/Casual Wear

References:

1. Burke. Sandra, 2006, Fashion Computing: Design Techniques and CAD, Burke Publishing U.K

Centner M. and Vereker F. (2011), Fashion Designers Handbook for Adobe Illustrator, Second Edition, A John Wiley & Sons, Ltd, Publication, United Kingdom.
2. Duggal, V., (2000). Cadd Primer: A General Guide to Computer Aided Design and Drafting-Cadd, CAD. Mailmax Pub. ISBN978-0962916595.
3. Farin, G., Hoschek, J., Kim, M, (2002). Handbook of computer aided geometric design [electronic resource]. Elsevier. ISBN 978-0-444-5110
4. Grazia, (2018), CAD High computer technology for apparel manufacture. URL:<http://www.saprgrazia.com>
5. Hume. Robert, 2016, Fashion and Textile Design with Photoshop and Illustrator: Professional Creative Practice, Fairchild Books, U.K.
6. Iynet Ondogan. (2006), The Comparison of the Manual and CAD Systems for Pattern Making, Grading and Marker Making Processes. Cetin Erdogan in Fibers and Textiles in Eastern Europe.
7. Madsen, David A. (2012). Engineering Drawing & Design. Clifton Park, NY: Delmar.ISBN978-1111309572.

8. Narayan, K. Lalit (2008). Computer Aided Design and Manufacturing. New Delhi: Prentice Hall of India. ISBN978-8120333420.
9. Narayan, K. Lalit (2008). Computer Aided Design and Manufacturing. New Delhi: Prentice Hall of India. ISBN978-8120333420.
10. Seema, K., (2012),Significance of Digital Platform in Apparel Product Development for Exports. JM International Journal of Management Research.
11. Stewart-Smith, 2013,CAD for Fashion Design and Merchandising, Bloomsbury Publishing India Private Limited

SEMESTER-VIII

Course Code: FCS144

Dissertation / Project

Description: In dissertation/project work student will conduct survey or lab-based research studies on social science or science related topics. After research work they will submit a final report based on original research in order to finish a Master's program.

SEMESTER-IX

Course Code: FCS144

CHILDREN WITH DISABILITIES

(Credits: Theory-2, Practical-1)

Course Description

The course introduces students to various disabilities in childhood years. It highlights aspects such as aetiology, characteristics and management of different disabilities. The educational practices in special education and inclusive education are also dealt. It also provides an overview of policies and laws related to disability

Course Objectives

- Orient the students about the need and importance of studying children with different disabilities and how needs of these children differ from others.
- Develop an understanding and awareness of the basic terms, issues and concepts related to disability.
- Explain students about the educational and welfare programs, facilities and services available and the efficacy of the same.
- Develop sensitivity towards parental coping and acceptance of the situation concerning disability in the family.

Course Outcomes

- Explain the need and importance of studying children with different disabilities.
- Describe the causes, the characteristics, assessment and intervention of various disabilities.
- Identify the common disabilities prevalent in childhood.
- Demonstrate first-hand experience of interacting and understanding children with disabilities.
- Distinguish the education patterns between children with disability and other children.
- Describe the coping strategies adopted by parents and family while dealing with children with disabilities.

- Design academic and extra-curricular activities for children with special need.

Unit-I: Children with Disabilities

- Role of parents in upbringing special children
- Parental acceptance and coping with the presence of special child in the family
- Stages parents go through to come to the terms with the condition of the disabled child

Unit-II: Interacting and understanding children with Disabilities

- Facilitating and debilitating parental behaviour in the development of special child
- Role of HDFS professionals in dealing children with special needs.

Unit – III: Programs and Policies for Children with Disabilities

- Rights of the child with disability
- Policy and laws related to children with disability

Unit-IV: Coping Strategies

- Interventions strategies adopted for children with disabilities

Unit-V: Educational Disabilities and welfare programs for the children with Disabilities

- Issues related to policies and programs in the area of special needs in India
- Facilities and services offered for the disabled children

Practical:

1. Interview the teachers of special school and parents to find out about their experiences, hopes, attitudes and difficulties faced.
2. Gather information of latest trends, services available etc. through newspapers, magazine and other media.

References:

1. Kumar, S.G., Roy, G., & Kar, S.S. (2012). Disability and rehabilitation services in India: Issues and Challenges. *Journal of Family Medicine and Primary Care*, 1(1), 69–73. doi: 10.4103/2249-4863.94458
2. Mani, R. (1988). *Physically handicapped in India*. Delhi: Ashish Publishing House.
3. Mastropieri, M. A., & Scruggs, T. E. (2004). *The inclusive classroom: Strategies for effective instruction*. New York, NY: Pearson
4. Mangal, S. K. (2007). *Exceptional children: An introduction to special education*. New Delhi: Prentice Hall of India
5. Santrock, J. W. (2007). *A topical approach to life-span development*. New Delhi: Tata McGraw- Hill.
6. Sharma, N. (2010). *The social ecology of disability. Technical Series-3*. New Delhi: Academic Excellence.
7. Singh, A. (Ed). (2015). *Foundations of human development: A life span approach*. New Delhi: Orient Black Swan.

CORE COURSE (CC-27)

DEVELOPMENT COMMUNICATION

(Credits: Theory-2, Practical-1)

Course Description:

Course in Development Communication orients the students to learn about the various dimensions of Development Communication. It enhances the capacity of the students in participatory methodologies and innovative communication techniques.

Course Objectives:

- Understand the concept and process of development
- Gain knowledge on development communication
- Learn the importance media in development communication
- Acquire skills on Information Education and Communication (IEC) technologies and media.

Course Outcomes:

- Understand the concept related to communication for development
- Comprehend the significant development communication
- Focus on different types of media and its uses in the implementation of programme
- Analyse the ICT in development communication
- Understand the steps in message design

Unit-I: Development Communication

- Definition, basic concept, nature, significance and functions and dysfunctions, dynamics of development.
- Models of Development- Dominant paradigm, basic needs model, new paradigm of development.

Unit-II: Communication and Development Communication

- Methods of Communication
- Meaning, nature, role, characteristics, philosophy and principles of development communication
- Interrelationship between development and development communication
- Diffusion/extension approach, Mass media approach, development support communication approach, institution approach, integrated approach and localized approach
- Paradigm of development communication

Unit-III: Traditional Media

- Traditional media- types, characteristic role in development communication

Unit-IV: Mass Media

- Development reporting- roles and responsibilities of development reporter, ethics in reporting, required skills and issues in development reporting
- News reporting- definition of news, ingredients and qualities of news, news value, types of news reports, structure of news reports
- Radio news, features and commentaries, radio and development communication
- Television and cinema- role in development communication
- ICTS – scope in development communication

Unit-V: Skills for Development Communication

- Photography-basic principles, preplanning, scripting, shooting, developing, mounting, recording of commentary or dialogue, synchronization of frame with recording
- Video films- essential preliminaries, preplanning- procedure, classification of video programmes, shooting script

- Editing procedure- optical effects, music titles and other accessories to be added
- Recording process, home videos, radio recording

Practical:

1. Apply the traditional media and understand the effectiveness of the same in social issues.
2. Identify various issues in development communication through radio scripts, newspaper stories and reports.

References

1. Ritu S. Sood, 2019, Roots Of Development Communication, Language: English Binding: Hardcover, ISBN: 9788178822525, 9788178822525, Edition: First Edition, Pages: 192
2. Uma Nurula, development Communication-Theory and Practice, 2019, Har-Ananad Publications Pvt Limited
3. Dipankar Sinha, Development Communication, 2013, Orient Blackswan Publication

Core Course (CC-28)

Institutional Food Management

(Credits: Theory-3, Practical-0)

Course Description:

This course covers the different functions of a food-service manager in terms of menu planning, purchasing, production, distribution and service, and facility layout and design. It also highlights the principles of food safety and the application of quality management systems in food-service establishments. It aims at developing a knowledge base about the facilities required for different types of food service units and to equip individuals in understanding and managing resources in a food service institution and also developing skills in menu planning, quantity food production for various food service organizations within specific budgets.

Course Objectives:

A successful completion of this course will enable students to

- Expertise to function as a food service manager
- Develop knowledge in managing various food service systems.
- To understand and manage resources in a food service institution.
- Provide practical experience in managing food material for food service management
- To understand the operations of food service units.
- Develop insight about products and their price in market.
- Prepare professional to work with organizations such as; hospitals, food service institutes and food-industry etc.
- Advocacy, consultancy, and entrepreneurial ventures

Course Outcomes:

A successful completion of this course will enable students to

- Expertise to function as a food service manager
- Develop knowledge in managing various food service systems.
- Understand and manage resources in a food service institution.
- Provide practical experience in managing food material for food service management

- Understand the operations of food service units.
- Develop insight about products and their price in market.
- Develop skills in planning menus for various food service organizations within specific budgets.
- Application of acquired skills in menu planning and quantity food production

Unit-I: Food Management

- **Food Services-** Concept, Principle and Objective, Type of food services (hospital, hostel, schoolmeal, industrial canteen, commercial hotels).
- **Food Services in hospitals-** Requirement of equipments for food preparation, Distribution, Storage and Services.
- **Food Service management-** Menu planning, Receipt of food and its storage, Principles and Techniques in quantity food production.

Unit-II: Theories and Principles of Management

- **Theories of Management and Approaches-** Classical Theory, neoclassical approach, Quantitative approach, MBO approach, System approach, Behavioral and Human relation approach, Contingency approach, JIT approach, TQM approach.
- **Developing objective and goals-** Definition, Importance, Types of goal, Policies, Procedures, Rules.
- **Principles and procedures of management-** Definition of management, Organization Interaction at work, Principles, Functions of management, Role and responsibilities.

Unit-III: Food Service Institution

- **Tools of management** –Definition, classification, Organization chart, Structure, Function, Work improvement techniques.
- **Personnel management** -Definition, Scope, Concept of personnel management, Approaches of personnel management, Personnel policies, Training, Placement,

Promotion, Personnel records, Work appraisals

Unit-IV: Financial Management

- **Financial management in food service institutions**-Methods of food purchasing, Inventorymanagement, Maintaining quality in food production and services.
- **Financial management**-Definition, Scope of financial management, Financial accounting, Management accounting, Budgeting, Costing, Cost control, Accounting.

Unit-V: Hygiene and Sanitation

- **Hygiene and sanitation in preparation and serving area** – Personal hygiene, Types, Sources of contamination, Prevention, Safety measures, Methods of controlling infestation, Methods of dish washing.

References:

- Bansal, T. (2011). Hotel facility and planning. Oxford publishing, New Delhi.
- Sethi, M. (2008). Institutional Food Management. New Age International (P) Ltd.

CORE COURSE (CC-29)

Scientific Writing

(Credits: Theory-3, Practical-0)

Course Description:

This course aims to teach the writing process, the fundamentals and effective scientific writing. Instructions will focus primarily on the process of writing and publishing scientific manuscripts and grant writing will also be addressed.

Course Objective:

- To teach students the types of formal writing used in academic research.

Course Outcomes:

- The course will inculcate the students with basics of technical writing.
- The student will know how to evaluate scientific texts and suggested improvements with respect to clear writing and precision.

Unit-I: Scientific writing, Scientific publications& Guidelines

- Introduction, Types, Characteristics of scientific writing,
- Review Articles, Research Papers, Chapter, Monographs, Dissertations
- For drafting Titles, Heading, Sub heading, Tables, Illustrations, and Figures in scientific publications.

Unit-II: Parts of Dissertation/Projects/Seminar

- Introduction, Review of Literature, Methodology, Results and Discussion, Clarity, Validity and Objectivity during writing each of the above parts.
- **Guidelines:** For Bibliographies, Abbreviations and Appendices.

Unit-III: Research Ethics

- Concept and Guidelines
- Plagiarism
- Software's for Plagiarism.

Unit-IV: Writing for Grants

- Question to be addressed, Rationale, Importance, Conceptualization, Pilot data, Clarity, Specificity of method, Budgeting, Outcome, Report Writing

Unit-V: Data bases, Journal indices & Resume making

- Search engines and data bases (Google Scholar, PubMed, Scopus, etc.)
- Research Journals for publications
- **Journal indices:** citation index, H- Index, Impact Factor.
- CV and Resume making

References:

1. Research Methodology and Scientific Writing 2nd Edition. C.George Thomas, Springer
2. Writing Science: How to Write Papers That Get Cited and Proposals That Get Funded, Joshua Schimel, Oxford University Press, USA, 26-Jan-2012
3. Principles Of Scientific Writing by Anindita Majumdar, Paras

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-6)

Law Policy & Program for Children & women

(Credits: Theory-2, Practical-1)

Course Description:

The course will help the students develop an understanding of the constitutional provisions, legislations, policies and programmes with reference to children and women in India. It will also help them understand the linkages between public private partnership, and the role of government at the centre ,state and local level in the implementation of programmes.

Course Objectives:

- To develop an understanding of constitutional provisions, legislations, policies and programmes with reference to children and women in India.
- To gain knowledge about the social policies as they relate to lives of children and women
- To understand the linkages between social policy, legislations and implementation of schemes and programmes.

Course Outcomes:

- Obtain knowledge of prevalent social policies as they relate to lives of children and women
- Be familiar with constitutional provisions and legislations for women and children
- Be able to engage with the linkages between social policy, legislations and implementation of schemes and programmes.

Unit-I: Overview of provisions

- Legal framework and legal action for children and women
- Historical overview of Policies and programmes (Five year plans)
- Policies and action plans
- Rights and social policies

Unit-II: Constitutional provisions

- Constitutional Provisions

Unit-III: laws and conventions

- Legislations for children and women
- Conventions for protection of children and women

Unit-IV: Linkages between social policy, legislations and implementation of schemes and programme-Part I

- Transacting policies into programmes
- Government role—centre ,state and local level
- Public-private partnership

Unit-IV: Linkages between social policy, legislations and implementation of schemes and programme-Part II

- NGO and corporate social responsibility in implementation of programmes
- Effective initiatives in various domains
- Critical appraisals

Practical:

1. Visit to Anganwadi
2. Visiting facilities for children

References:

1. Bajpai, A (2003).Child Rights in India: Law, Policy and Practice. New Delhi:
2. Bhargava, V. (2005). Adoption in India: Policies and Experiences. New Delhi: Sage Publications.
3. Chopra, G. (2016).Child rights in India: challenges and social action. S.l.: Springer, India.
4. Contemporary publications and documents of the Government of India, UN bodies, established International and National Organisations.
5. Kumari, V. (2004). Creative Child Advocacy: Global Perspectives. New Delhi: Sage.
6. Kumari, V (2004). Juvenile Justice System in India: From Welfare to Rights.

New Delhi: Sage

7. Ministry of Women and Child Development GOI □ www.wcd.nic.in/
8. Rights to the youngest: Towards a legal framework for early childhood development (2016). Books for Change: Bangalore.

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-6)

Instrumentation and Techniques in Nutrition

(Credits: Theory-3, Practical-0)

Course Description:

This course develops a conceptual understanding of various instrumental techniques used in food analysis and understands the applications, strengths and limitations of different methods. Analysis of foods is incessantly demanding the development of more robust, efficient, sensitive, and cost-effective analytical methodologies to guarantee the safety, quality, and traceability of foods in compliance with legislation and consumer demands. This course content gives overview of instrumental analysis of foods with respect to safety as well as regulatory perspective.

Course Objectives:

- Good laboratory practices and FSSAI regulations for food laboratory
- Laboratory demonstration, practical, and instrument handling
- Guidelines for sample preparation, instrument operation and interpretation of results, laboratory demonstration.
- Physical, chemical and microbiological analysis of food
- Spectrometric methods of food analysis (UV and visible molecular absorption spectrometry, atomic absorption spectrometry, atomic emission spectrometry, icp, fluorescence spectrometry, atomic mass spectrometry, infrared spectrometry)
- Separation techniques (HPLC, GC, TLC, super critical fluid extraction chromatography, electrophoresis)
- Viscosity and consistency measurements of food (measurements of rheological properties, instrumental measurement of texture of foods)

Course Outcomes:

A successful completion of this course will enable students to

- Demonstrate interaction of food by using different analytical techniques and may assess physico-chemical properties of foods.
- Become familiar with sample preparation, instrument operation and interpretation of results, laboratory demonstration.
- Get acquainted with good laboratory practices and FSSAI regulations for food laboratory.
- Gain skills for physical, chemical and microbiological analysis of food.

Unit –I: Spectrophotometer

- Principle, Methodology and Application of UV Spectroscopy, Visible, IR, NMR and ESR Spectroscopy, Atomic Absorption, Plasma Emission Spectroscopy

Unit-II: Chromatography

- Principle, Methodology and Applications of gel filtration, Ion exchange Chromatography, Affinity Chromatography; Thin Layer Chromatography, Gas Chromatography; High Performance Liquid Chromatography (HPLC) , Gas Liquid Chromatography (GLC).

Unit-III: Electrophoresis

- Principle and Applications of Native, SDS PAGE, Agarose Electrophoresis, 2D Gel Electrophoresis.

Unit-IV: Polymerase Chain Reaction and Respirometry

- Principle and Application of PCR,
- Principle and application of Respirometer

Unit-V: Non-invasive methods for assessment

- Principle and application of Radiological, Bone mineral density, ECG, EEG, NMR. Advantages and Limitations.

References:

- E Kress-Rogers, C J B Brimelow (2000). Instrumentation and Sensors for the food industry, Second edition, CRC press, NW.
- Sharma BK (1986). Instrumental methods of chemical analysis, 8th edition, Goel Publishing house.
- Raghuramulu N., Madhavan Nair K. and Kalyansundaram S. (1983). A manual of laboratory techniques edited by NIN, ICMR .

Entrepreneurship Management

(Credits: Theory-2, Practical-1)

Course Description:

Entrepreneurs are innovators who help improve technology, products and society. For the economic growth of any country, the contribution of manufacturing and service sector play an important role. The purpose of exposing students to entrepreneurship is to motivate them to look at entrepreneurship as a viable and preferred career and emerge as job givers.

Course Objectives:

- Initiate entrepreneurial motive and impart skills and capabilities for entrepreneurship
- Comprehend nuances of entrepreneurship
- Gain knowledge on Governmental plans and programs
- Ignite / kindle aspirations to become entrepreneurs and successful managers

Course Outcomes:

- Understand the concept of entrepreneurship, entrepreneur and enterprise
- Identify ways to approach supportive Institutions and Banks for starting an enterprise
- Analyse the steps in product selection and form of ownership
- Focus on the formation of project proposal and practice effective accounting processes

Unit-I: Concept of Entrepreneurship

- Conceptual- meaning, definition and scope of entrepreneurship
- Entrepreneur- meaning, qualities, functions and types of entrepreneur
- Enterprise-Definition, nature and classification
- Forms of Organization- Sole proprietorship, partnership, Joint Stock Company
- Role of entrepreneur in economic development

Unit-II: Establishing a Small Scale Enterprise

- Concept and Classification – Product identification and product selection
- Infrastructure – Plant Location, Land, building, water and power
- 6MS – Man power, method, machine, material, marketing, mother nature

Unit-III: Institutional Support

- Commercial Bank
- Central level: SSIB, NSIC, SIDO, KVIC, NIESBUD, NABARD
- State Level: DIC, SFC, SSIDC, SIDBI, SISI, ICICI
- Lectures on the rules and regulation for financial support to entrepreneurs
- Visit to financial and supportive Institution to understand or observe their action modalities.

Unit-IV: Project Formulation

- Meaning and definition of project
- Project formulation techniques- Quantifiable and Non quantifiable projects, Sectoral project, Techno economic project
- Project report and preparation of project report
- Project appraisal- market feasibility, technical feasibility, financial and economic feasibility
- Carryout market survey

Unit-V: Accounting for Small Enterprises

- Meaning, need and objectives of accounting
- Process of Accounting, Book Keeping, Journal, Ledger and Balance Sheet, Final Accounts
- Auditing- nature and types
- Preparation of model project, proposal and report

Practical:

- Visit to enterprises to observe the qualities of entrepreneurs.
- Preparation of case studies of successful entrepreneur.
- Visit to financial and supportive Institution to understand or observe their action modalities.
- Carryout market survey.
- Preparation of model project, proposal and report.

References:

1. Anilkumar, S. Poornima S.C. Mini K. Abraham and Jayashree, K. (2012). Entrepreneurship Development. New Delhi: New Age International Pvt. Ltd., Publishers
2. Badi, R. V. and Badi N. V. (2011), Entrepreneurship. New Delhi: Vrinda Publications Pvt. Limited
3. Gordon, E., and Natarajan, K. (2013), Entrepreneurship Development. Mumbai: Himalaya Publishing House
4. Jayashree Suresh. (2016). Entrepreneurial Development. Chennai: Margham Publication
5. Khanka, S.S. (2006). Entrepreneurial Development. New Delhi: S. Chand and Company Limited
6. Radha, V. (2015). Entrepreneurial Development. Chennai: Prasanna Publishers and Distributors
7. Robert, N.A. Hawkins, F. Kernelt, A. (2009). Accounting. New Delhi: Tata Mc Graw – Hill Publishing Company Limited
8. Sundara Pandian, P. (2002). Entrepreneurship Development. Virudhunagar: M.M. Publishers

SEMESTER-X

CORE COURSE (CC-30)

Advanced Human Nutrition

(Credits: Theory-2, Practical-1)

Course Description:

This course introduces principles of nutrition and the relationship of the human diet with health. It provides overview of the biological uses of nutrients and ways of dietary assessment in various settings. Weight management, sports nutrition, food safety, analysis of nutritional requirements and needs during the life cycle develop understanding of students. Basics of physiology and biochemistry helps in understanding the role of nutrients in the growth and maintenance of the physical structure and of the metabolism of the body.

Course Objectives:

- To gain practical knowledge in preparing counselling sessions for selected conditions and to identify appropriate counselling strategies for different age groups and physiological conditions.
- To learn biological roles of vitamins and minerals. Application and integration of metabolic knowledge with health promotion and chronic disease.
- To learn the concepts of fitness, methods of assessing fitness, exercises for physical fitness and bioenergetics of exercise and role of macro- and micro-nutrients in sports performance and to gain knowledge & application skills with respect to nutrition for high performance sports, through the life-cycle and diet & nutritional care of special groups of athletes.

Course Outcomes:

A successful completion of this course will enable students to

- Critically evaluate and derive requirements for specific macronutrients.
- Understand critical periods in growth and development and impact of malnutrition.
- Appreciate implications of poor dietary and lifestyle practices.
- Plan counselling sessions for different physiological conditions
- Apply knowledge of sports nutrition to plan diets for sport-specific training, pre-competition, competition, and recovery.
- Gain skills for counselling of individual athlete through various phases.

Unit-I: Infancy and Nutritional demands:

- Role Nutrition on physical and mental development, Assessment of growth
- Breast feeding vs Artificial feeding
- Types of milk and their use in infant feeding
- Feeding the premature and low birth weight infants
- Importance of supplementary food

Unit-II: Nutrition during preschool age and Childhood

- Nutritional demands during preschool and childhood.
- Growth and Development
- Malnutrition in preschool years
- Specific problems in feeding school children

Unit-III: Nutritional demand of Adolescents

- Physical and physiological changes during adolescence
- Food preferences and Nutritional Problems
- Eating disorders: Anorexia Nervosa and Bulimia

Unit-IV: Nutritional requirements of Adulthood and Geriatric

- Food and Nutritional demand of Adults
- Physical and Physiological changes during old age
- Nutritional Requirements of old age people
- Problems old age, Nutrient influency aging process

Unit-V: Nutrition during pregnancy and lactation

- **Pregnancy-** Physiological changes in pregnancy, and nutrient requirements, Impact of good nutrition on the outcome of pregnancy, Complications of pregnancy and their nutritional management.
- **Lactation and Infancy-** Physiology of lactation, Impact of nutrition on efficiency and milk production
- **Sports Nutrition-** Nutritional requirements for optimum performance, ergogenic aids
- **Bone Health and Nutrition-** Arthritis, Rheumatoid arthritis, Role of calcium, phosphorous, magnesium and vitamin D hormonal regulation

Practical:

1. Planning and calculating nutritive value of balanced diet for different age groups
Enrichment and Fortification of daily diet.
2. Planning of diet for Pregnant and Lactating women.
3. Planning and calculating nutritive value for healthy skin and hair.
Planning and calculating nutritive value for Sports person.

References

1. Bamji, M.S, Rao, N.P & Reddy, V. (1996). Textbook of Human Nutrition. Oxford & IBH Publishing Co. (P) Ltd. Delhi.
2. Swaminathan M. (2010). Food and Nutrition, Second Edition, Bangalore Printing & publishing co. ltd., Bangalore.

CORE COURSE (CC-31)

Fashion Retailing and Merchandising

(Credits: Theory-3, Practical-0)

Course Description:

This course is based on management of all niche area for sales and promotion of a product. It is designed to gain the knowledge of budgeting, marketing, pricing and merchandising which will be helpful for student to understand the perspective of growth and shrink for a industry. In this course student will get an insight of planning the strategy to hit right market for fashion merchandising and how merchandising different role and different place play in complete cycle from manufacturing to marketing.

Course Objectives:

- To understand the dynamics of fashion and fashion designers
- To develop understanding visual merchandizing and its importance in today's consumer market.
- To gain knowledge about the management aspect of retailing.
- To impart knowledge regarding the prevalent merchandizing practices.

Course Outcomes:

- Student will be ready to enter in the market of fashion industry as they will learn different marketing strategies, retailing merchandising etc.

Unit-I: Fashion & Retailing

- Fashion terminology,
 - Fashion cycle,
 - Fashion adoption theories,
 - Fashion forecast
 - Role of designers in merchandizing.

- The Concept of Retailing:
 - Definition,
 - Role of retailing in merchandizing the retail mix,
 - Retail environment
 - Types of retail store.

Unit-II: Element and Principle of Art and Design

- Element of design colour, texture line form, space principals of design rhythm, balance proportion, emphasis, unity interpretation for designing retail store.
- Visual Merchandising:
 - Plans and Schedules: Season holiday promotion, Sales themes ideas
 - Types of Display: Window display, Interior display
 - Elements of Display: The merchandising, the backdrop walls and shelves, mannequins and forms signage lighting- luminance levels relation to colors.

Unit-III: Planning and Budgeting for a Retail Store:

- Maintenance and ordering of stocks, preparation of sales report.
- Recruitment and Management of Sales Force:
 - Types of compensation package for sales force, personal selling as a means of promotion.

Unit-IV: Marketing and Merchandising:

- Core concepts, marketing environment, marketing and merchandising, environment of India.
- Product in Relation to Fashion:
 - Classification of fashion product life cycle the process of product development, the marketing of the brand, branding strategies, brand management, brand image building.

Unit-V: Promotion and Distribution

- Role of promotion, methods of promotion, advertising, sales promotion and selling.
Designing and management of different methods of promotion, and their employment in relation to cost effectiveness and life cycle.
- Pricing:
 - Principles and methods of pricing: pricing in relation to product type product life cycle, distribution outlet etc.

References:

- Frings G.S. (2007) Fashion form Concept to Consumer Prentice Hall Inc. Engelwood Cliff's New Jersey.
- Chuter A.J. (1995), Introduction to Clothing Production Management, Blackwell Science Ltd.
- Stone E. and Sample J.A,(1985), Fashion Merchandising: An Introduction, McGraw Hill Book.

Counselling For Child Development

(Credits: Theory 2, Practical-1)

Course Description:

To develop and practice the basic counseling skills of observation, attending, active listening, empathy, appropriate questioning, paraphrasing, reflection of feeling and thought, summarization, confrontation and constructive use of silence.

Course Objective:

- Theoretical evaluation of diverse counseling concepts, theories and techniques will be promoted through debate, discourse and written assignments.

Course Outcomes:

- The course teaches purpose, scope, theories, and practices of counselling for child development.
- It defines the development needs from the life span perspective; identify at risk children and assess various concerns that families bring into the counselling process.

Unit-I: The purpose and need for counselling during child development

- Purpose and need for counselling
- Understand human needs from the life span perspective
- Developmental stages and needs-Infancy, Preschool years, Middle Childhood, Adolescence.
- Familial contexts and challenges-
 - Family types-Nuclear, Joint families, Single parent families, adoptive families, same sex families.
 - Chronic illness, marital discord, domestic violence, drug/alcohol abuse, disability, mental illness
- Occupational correlates-long working hours, institutional/ home carers
- Child related concerns-Developmental delays, Behavioural challenges , Academic and school related issues, Health and feeding challenges,
- Adolescent concerns- Childhood disorders - emotional disturbances and disorders; over controlled, under controlled disorders and developmental disorders;

adolescent problems and disorders - persistent anti-social behaviour, delinquency, depression, Body concerns and Self- esteem issues, bullying, sexuality, board exams, transition to college, career, romantic issues

- Addictions

Unit-II: Self Reflections and orientation of the counsellor

- Values, attitudes, personal biases/prejudices that may impact the counselling practice.
- Core skills of counselling: genuineness, empathy, and positive regard.
- Maintain the ethical limits of the counselling relationship and safeguard the confidentiality.
- Techniques of observation, attending, active listening, empathy, appropriate questioning, paraphrasing, reflection of feeling and thought, summarization, confrontation and constructive use of silence.
- Interpersonal skills in counselling

Unit-III: Introduction to major theories and processes-Part-I

- Classification of Counselling theories and techniques
 - Psychoanalytic Approaches.
 - The Experiential and Relationship
 - Humanistic Approaches.

Unit-IV: I Introduction to major theories and processes-Part-II

- The Action Therapies
- The System Perspectives
- Cognitive-Behavioural Approaches

Unit-V: Basic Counselling skills and practices

- Individual counselling
- Family counselling
- Group Counselling
- The counselling process- assessing body language, relationship building; transference and counter transference; reassessment of problems and concerns; goal setting; initiating interventions; supporting the implementation; evaluating action and sustaining change; termination and follow-up.

Practical:

1. Introduction to Counselling: connecting theories to practice

- i. Developing self-awareness in the counselling process
- ii. Genogram & Life Graph
- iii. Small group exercises in self-discovery
- iv. Steps in the process

2. Counselling Skills & Techniques

- i. Attending and listening skills
- ii. Responding and questioning techniques
- iii. Assessing body language, relationship building; transference and counter transference; reassessment of problems and concerns;
- iv. Goal setting; initiating interventions; supporting the implementation;
- v. Evaluating action and sustaining change; termination and follow-up.
- vi. Documenting sessions and writing a counselling reports

References:

1. Armstrong, K.H., Ogg, J.A., Sundman-Wheat, A.N., & St. John Walsh, A. (2014). *Evidence-based interventions for children with challenging behaviors*. New York:Springer.
2. Beidel, D.C., & Turne, S.M. (2005). *Childhood anxiety disorders: A guide to research and treatment*. New York: Routledge.
3. Blocher, D.H. (2000). *Counselling: A developmental approach*. USA: Wiley
4. Edworthy, A. (2000). *Managing stress*. Buckingham: Open University Press.
5. Gladding, S.T. (2009). *Counseling: A comprehensive profession*. New Delhi: Pearson.
6. Golden, B. (2003). *Healthy anger: How to help children and teens manage their anger*. NY: Oxford University Press.
7. Gumbiner, J. (2003). *Adolescent assessment*. New Jersey, NJ: Wiley & Sons.
8. Jacobs, Ed. E., Mason, R.L., & Harvil, R.L. (2009). *Group counselling: Strategies and skills*. Canada: Cengage learning.
9. Jolley, R.P. (2010). *Children & pictures: Drawing and understanding*. UK: Wiley-Blackwell
10. Kinra, A.K. (2008). *Guidance and counselling*. New Delhi: Dole Kindersley.

11. Blocher, D.H. (2000). *Counselling: A developmental approach*. USA: Wiley
12. Gladding, S.T. (2009). *Counseling: A comprehensive profession*. New Delhi: Pearson.
13. Jacobs, Ed. E., Mason, R.L., & Harvil, R.L. (2009). *Group counselling: Strategies and skills*. Canada: Cengage learning.
14. Jolley, R.P. (2010). *Children & pictures: Drawing and understanding*. UK: Wiley-Blackwell
15. Kinra, A.K. (2008). *Guidance and counselling*. New Delhi: Doliy Kindersley.
16. Nelson-Jones, R. (2011). *Theory and practice of counselling and therapy*. Los Angeles: Sage.
17. Peseschkian, N. (1985). *Oriental stories as tools in psychotherapy: The merchant and the parrot*. New Delhi: Sterling publishers.
18. Redgrave, K. (2000). *Care therapy for children*. London: Continuum.
19. Van Fleet, R., Sywulak, A.E., & Sniscak, C.C. (2010). *Child-centered therapy*. New York: The Guilford Press.
20. Welfel, E., & Patterson, L.E. (2000). *The counselling process*. CA: Wordsworth.
21. Winnicott, D.W. (1964). *The child, the family and the outside world*. England: Penguin.

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-7)

Techniques of Food Preservation

(Credit: Theory-0, Practical-3)

Course Description:

This Course helps to understand what is possible in the world of food preservation. It develop understanding about the factors cause food deterioration. Further course will cause difference techniques to preserve food using chemicals, natural methods of preservation ways to protect food against environmental conditions (temperature, moisture content etc.)

Course Objectives:

- To Learn the principles behind the methods of preservations
- To Understand the stages of cookery and chemical characteristics in the preservation of fruits and vegetables
- Able to formulate preserved food products
- Acquire skills to preserve different types of food items based on their perishability.

Course outcomes:

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

Unit-I: Concept of Food Preservation

- Importance of Food Preservation,
- Types of Food spoilage by Microorganisms and by Enzymes
- Basic Principles of Food Preservation

- Food Preservative Use of Salt, Acid, Sugar, Natural Food preservative, Artificial food preservations
- Starting a food preserving unit
- Product Promotion strategies and marketing skills

Unit-II: Preparation of dehydrated products

- Methods of drying & dehydration , different types of driers , freeze drying- lyophilisation , packing & storage
- Drying methods for the selected products -Rice, Sago, Wheat, Maida, Rice flakes, Black gram dhal, green gram dhal.
- Preparation of salted, dehydrated, preserves (Traditional Indian varieties of chips, Papads, Khakharasetc and Masala Powders, onion, garlic, ginger powder etc)
- Hands on experience :Drying of vegetables- peas, potato, carrot, French beans, Drying & preparation of powders- garlic, ginger, spices mix etc

Unit-III: Preservation by Using Sugar

- 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, Candies, Toffee
- Evaluation of pH, Acidity and pectin quality.

Unit-IV: Preservation by Using Chemicals and Salts and Fermentation

- Preparation and Preservation of Fruit Juices, RTS
- Pickling – Principles Involved and Types of Pickles
- Chemical Preservatives – Definition, Role of Preservation
- Permitted Preservatives, FSSAI guidelines
- Foods fermented by Yeasts
- Foods fermented by Bacteria

Unit-V: Preservation by Advanced Preservation Technology

- Meaning and needs of freezing foods
- Types of Freezing and managing freezers
- Smoking foods

- Pasteurization and Sterilization
- Food Irradiation
- Vacuum Packing
- Canning and Bottling
- Food Packaging Materials for preserved food products
- Hands on experience: Blanching of fruits & Vegetables

References:

1. Srivastava R.P. (2012), *Fruit and vegetable preservation – Principles and Practices*, International Book Distributing Co., (IBDC), New Delhi.
2. Maria Parloa (2009), *canned fruit, preserves and jellies: Household methods of preparation*, US Department of Agriculture, Washington.
3. Shafiur, Rahman, M. (2007), *Handbook of Food Preservation*, 2nd edition, CRC press, New Delhi.

Textile Testing

(Credits: Theory-2, Practical-1)

Course Description:

This subject aims to develop students with an in-depth knowledge of different textile testing, standards, quality control and explicate the student's understanding on the textile sector with current and future trend.

Course Objectives:

- To develop and understand the method and technique used to analysis textile fiber yarns and fabric for end performance.
- To acquire knowledge and understanding of various structural properties of textile and relate them to end use fabrics performance and product.
- To familiarize student with the different testing equipment, their underlying principals and the international accepted standards, test method and the language and measurement.
- To be able analyse and interpret the result and predict the general textile behaviour performance.
- To develop understanding of importance of quality control in testing.

Course Outcomes:

- Student will be able to analyse fiber/yarn/fabric properties for end performance.
- Student will get familiar with different testing equipments and their underlying principal.
- Student will get to know about different test method standard ASTM Standard, ISO Standard etc.
- Student will be able to understand the importance of quality control in textile testing.
- Student will be able to explain the care of textile items and interpret the meaning of different care labels with symbols.

Unit-I: Introduction

- Importance and objective of textile testing and analysis.
- Use of statistics in handling data in the area of textile testing.
- Sampling procedures and selection of sample method of testing.
- Development of standard test method ISO series national and international organization involved in textile testing.
- Atmospheric condition for testing humidity and moisture and temperature, standard condition for testing.

Unit-II: Fibre Testing

- Fibre Length
- Linear density
- Fibre Maturity
- Fibre fineness
- Fibre linear

Unit-III: Yarn Testing

- Yarn number or count single and lea strength,
- Yarn twist,
- Yarn Evenness,
- Yarn Crimp, properties and measurement of crimp percentage.

Unit-IV: Fabric Testing

- Length, width, thickness, weight per unit area and per unit length, fabric count.
- Fabric stiffness handle and drape, Shirley stiffness tester, flexural rigidity, measurement of handle and drape.
- Crease resistance, crease recovery, measurement of crease recovery, fabric characteristics affecting wrinkle resistance.
- Pilling of fabric, pilling testing.
- Water and fabrics relationship, definition and methods of testing for water repellence, spray test foundation spray test and shrinkage.
- Tensile strength testing- definition and terminology factors affecting the tensile properties of textile, different principles of tensile testing machine

(CRT, CRE) single yarn strengths tester, bursting strength tester, tearing strength tester.

Unit-V: Care Labels

- Safety aspects and protective properties of textile- flammability definition and terms. Factors affecting flammability, flame resistance and flame proof finishes on fabric flame resistance finishes and its toxicity, protective clothing.
- Colour fastness: colour fastness to washing, perspiration, rubbing, sunlight, dry cleaning on gray scale.
- Labeling and care of textiles.

Practical:

1. Fibre Testing

- a. Identification of Textile fibres
- b. Determination of Cotton fibre maturity
- c. Moisture content of different fibres

2. Yarn Testing

- a. To identify the twist in the given yarn and to determine the twist per inch
- b. Determination of Yarn count using Beesley balance
- c. Determination of yarn count using Quadrant balance
- d. To determine Yarn evenness

3. Fabric Testing

- a. To determine the Thread count/fabric count of different fabric samples
- b. GSM (weight per unit area) of different fabric samples
- c. Fabric thickness of different fabric samples
- d. Crease recovery of different fabric samples
- e. Bending length and Flexural rigidity of different fabric samples

4. Dimensional Change

- i. To determine the dimensional change (shrinkage) in the fabric

5. Colours fastness

- i. Colour fastness of dyed textile materials to washing
- ii. Colour fastness of dyed textile materials to rubbing
- iii. Colour fastness of dyed textile materials to light
- iv. Colour fastness of dyed textile materials to perspiration

References:

1. John, H. Skinkle (1949), Textile Testing, Brooklyn, New York
2. Billie, J. Collier and Helen H. Eps (1998), Textile Testing and Analysis, Prentice Hall, New Jersey.
3. Angappan, P. and Gopalkrishna, R. (2002). Textile Testing Kamarapalayan, S.S.M. Institute of Textile Technology.
4. Booth, J.E. (1996), Principle of Textile Testing, New Delhi, CBS Publisher.
5. Indian Standard Institution, (1982). Handbook of Textile Testing, New Delhi, Indian Standard Institution.
6. Groover, E.B. and Hamby, D.S. (1998), Handbook of Textile Testing and quality Control, New Delhi Wiley Eastern Ltd.
7. Saville, B. P. (2004), Physical testing of Textile, Cambridge England, Woodland Publishing Ltd.

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-8)

Skills for Working with Children

(Credits: Theory-2, Practical -1)

Course Description:

The course is designed to provide students with a comprehensive understanding about child development and how the process of development can be enriched by designing developmentally and contextually appropriate programs. It will provide an understanding of the basic principles and skills for working with children. Students will be trained to demonstrate effective approaches for guiding children's growth and development. The course will enhance students' skills to employ a variety of teaching-learning approaches, methods and materials.

Course Objectives:

- Learn professional and personal skills for working with children.
- Promote a holistic approach to child development by understanding the value of various activities designed for the children.
- Become aware about the developmentally and culturally appropriate practices for working with children and understand the importance of stimulating environment and role of teacher in promoting learning in young children.
- Learn the alternative use of locally available indigenous material/ resources.
- Develop sensitivity to the socio-cultural contexts, including gender, while working with children.
- Learn effective ways to communicate and guide children.

Course Outcomes:

- Apply theories and concepts of child development in working with children.
- Plan developmentally and culturally appropriate programs for children.
- Demonstrate skills to effectively work with children.
- Implement effective methods and techniques to communicate with and guide children.
- Use locally available indigenous materials for developing teaching aids.

Unit-I: Conceptual Understanding of Child Development and Developmentally Appropriate Practices

- The child as a whole person: Highlights of key theories and concepts of child development
- Overview of Developmentally Appropriate Practice:
 - Definition, meaning, and principles
 - Difference between developmentally appropriate vs. inappropriate practices
- Need and importance of building appropriate skills as adults and professionals to nurture overall development of a child

Unit-II: Creating Stimulating Environment for Holistic Development and Learning

- Principles of child development and learning - NAEYC
- Developmentally Appropriate Environments – Physical Environment, Social/Emotional Environment, and Cognitive/Language Environment
- Need and importance of Creativity, Music, Drama and Artistic experiences, Language and Literacy, Science, Mathematics and Social Studies for holistic child development.

Unit-III: Teacher's role in promoting learning in young children

- Role of teacher in enriching children's learning experiences across developmental domains.
- Planning a developmentally and culturally appropriate program – components, strategies, use of material, knowledge of setting – urban, rural, homes, day care centers etc.
- Developing various learning material for enhancing development of a child.

Unit-IV: Skills for working with Children

- Confidence, acceptance, risk taking, trust- building
- Personal Skills: passionate attitude, authentic, creative, energetic, innovative and organized
- Professional Skills - Knowledge base, theme teaching and integrated curriculum, respect children, families and the context, collaboration with other adults, time management, etc.
- Communication Skills - Effective listening, perspective taking, encompassing observation and communication - Verbal and non-verbal communication
 - Effective ways of communicating - Positive and non-violent communication
 - Helping young children talk about their experiences and express their feelings, promoting participation and eliciting their wishes and views
 - How to deal with questions, conflict and criticism, and communicating in groups

Unit-V: Skills for Guiding and Managing Problem Behaviour

- Understanding and managing inappropriate and problem behaviours of a child
- Types and causes of problem behaviour
- Managing problem behaviour – a stepwise process
- Intervention with parents and care providers, referral and support services

Practical:

1. Workshop on creative expression on theme of creating “best out of waste” and display in the students’ corner
2. Critically review child’s activities and participation.
3. Develop a detailed activity plan of developmentally appropriate program
4. Preparation of various teaching aids –Art resources, storytelling material, worksheets, Music related resources etc.
5. Sharing of documentaries and videos on Indian folk music and Traditional Indian puppetry
6. Interviews with teachers and parents
7. Design a teaching module for teachers working with young children

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3. Gupta, S. (2009). *Early childhood care and education*. PHI learning Pvt. Ltd., New Delhi
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6. Lightfoot, C., Cole, M., & Cole, S. (2012). *The development of children* (7th ed.). New York: Worth Publishers.
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DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-8)

Hygiene, Sanitation and Diseases

(Credits: Theory-3, Practical-0)

Course Description:

The hygiene and disease course covers concept, types and significance of hygiene in daily life. This course will develop understanding regarding importance hygiene for maintaining both physical and mental health. Ensure good quality of life develop knowledge of good hygienic practices. Further this course will develop understanding of causes, sign and symptoms of different diseases.

Course Objectives:

- Understand concept and aspect hygiene and health.
- Understand importance hygiene for maintaining physical and mental health.
- Identify the cause, signs and symptoms of different diseases.

Course Outcomes:

A successful completion of this course will enable students to:

- Explain link between hygiene and health.
- Discuss cause, sign and symptoms of different diseases.
- Application of acquired skills in maintenance of physical and mental health.

Unit-I: General Hygiene:

- Concept of health and hygiene.
- Importance of good hygiene.
- Relationship between health and hygiene.
- Personal hygiene.
- Pollution and contamination (types, causes, preventive measure)

Unit-II: Disposal of Night soil and Refuse:

- Concept of safe disposal of water and methods of disposal of night soil
- Disposal of slope water
- Disposal of sewer water
- Disposal of septic tanks, sewage water

Unit-III: Diseases related terminology

- Epidemiology Incubation, period of infectivity carriers of infection, channels of infection, mode of transmission.
- Pathogenicity, virulence, susceptibility, suspect immunity notification
- Isolation (domestic), concurrent and terminal disinfection of diseases.

Unit-IV: Air and Ventilation

- Composition of air, smoke, dust and bacteria in air
- Air pollution and diseases due to impure air
- Meaning and health significance of ventilation
- Concept of natural and artificial ventilation

Unit-V: Different modes of transmission of diseases

- Air (smallpox, chickenpox, measles, mumps, whooping cough, pulmonary tuberculosis, diphtheria, rheumatic fever).
- Food (cholera, typhoid, dysentery, hepatitis).
- Water borne disease (Cholera, diarrhoea, giardiasis, dysentery, typhoid fever, E. Coli infection, and salmonellosis).
- Insect (malaria, filaria).
- Direct contact, eats and abrasion (ringworm conjunctivitis, leprosy, rabies, venereal diseases tetanus aids)

References:

1. Chakrabarty, K., chakrabarty A.S. (2019) . Textbook of nutrition in health and disease, springer verlag, Singapore.
2. Dr. Payasi. Y.K. , Dhudhwal. P., Dr.shukla. A., shukla, J.P.(2022). Health and hygiene, orangebooks publications.
3. Park, K. (2007) Parks Text book of Preventive and Social Medicine. 19th Edition, M/S Banarsides Bhanot Publishers, Jabalpur, 798-806

DISCIPLINE SPECIFIC ELECTIVE COURSE (DSE-8)

Range Development

(Credits: Theory-1, Practical-2)

Course Description:

The course provides basic principles for designing and manufacturing technique. It is designed to develop skills in students to develop different design by taking inspiration from various sources. It will further help the students to gain of knowledge of different types of fabrics used for apparel construction. The Knowledge of these will enable the students to make sound decision in designing unique dresses. This will prepare students for professional employment in the areas of clothing and textiles.

Course Objectives:

- To gain exhaustive knowledge of various steps involved in Product Development
- To explore the process of sourcing and procurement of raw materials
- To study different kinds of fabrication techniques

Course Outcomes:

- Understand the new product development process
- Learn methods of generating, evaluating and developing new product ideas
- Develop prototypes of good quality marketable products using basic fabrication processes and sustainable materials
- Enhance research and analysis and critical thinking abilities

Unit-I: Fabric Trims & accessories

- Study of different types of fabric
- Factors affecting selection of fabric and trims
- Study of different types of accessories

Unit-II: Colour Motif & Patterns

- Prangs Colour wheel
- Motifs, Design, Pattern

Unit-III:Types of Boards used in Fashion designing

- Study of Inspiration board.
- Study of Colour board
- Study of Mood board
- Study of Client board
- Study of theme board
- Study of swatch board
- Study of silhouette board

Unit-IV: Fabric and Layout

- Layout, Types of layout,
- Estimation of fabric for Clothing Construction

Unit-V: Product development Process

- Idea
- Techpark
- Sample
- Manufacturing

Practical:

1. Concept Development & Design Instigation

- i. Meaning and importance
- ii. Key elements in Product designing- fashion trends, product function and added value
- iii. Developing creative idea based on concept with sustainability principles in mind
Making flat sketches of developed idea

2. Analysis and Selection

- i. Sourcing and Procurement-Concept and Definition, Importance of eco-sourcing
- ii. Need and methods of Sourcing, Major producers and suppliers of raw materials, Dyes, Yarns, Fabrics and Trims
- iii. Review of designs for individual strengths relation to the concept and their estimated cost
- iv. Finalizing the blue print of the final product

3. Development Process and Fabrication

- i. Conceptualization of the details of the product

- ii. Prepare/ develop specification sheets of the selected product
- iii. Construction of the final product with emphasis on ‘eco-design’ using as little (and as few) materials as possible
- iv. Display of the article

4. Cost Analysis

- i. Economic analysis of products
- ii. Calculation of monetary values of different determinants of total product cost
- iii. Labour cost calculation

References:

1. Fletcher K. & Grose L., (2012), *Fashion and Sustainability – Design for Change*, Laurence King Publishing, London
2. Frings G.S. (2001) “*Fashion from Concept to Consumer*” Prentice Hall, New Jersey.
3. Gwilt A., (2014), *A Practical Guide to Sustainable Fashion*, Bloomsbury Publishing, New York
4. Parthiban M., Srikrishnan M. & Kandhavativu P., (2017), *Sustainability in Fashion and Apparel – Challenges and Solutions*, Woodhead Publishing, India
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