

UNIVERSITY OF DELHI

CNC-II/093/1(25)/2023-24/80

Dated: 20.06.2023

**NOTIFICATION**

Sub: Amendment to Ordinance V

[E.C Resolution No. 60-1/(60-1-6) dated 03.02.2023]

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

**Add the following:**

**Syllabi of Semester-III of the department of Home Science under Faculty of Science based on Under Graduate Curriculum Framework -2022 implemented from the Academic Year 2022-23.**

**FACULTY OF SCIENCE**

**DEPARTMENT OF HOME SCIENCE**

**BSc. Hons. (Home Science)**

**DISCIPLINE SPECIFIC CORE COURSE – 7**

**DSC HH 307 : Human Development II: Middle Childhood and Adolescence**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code                                    | Credits | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course (if any)                       |
|--------------------------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|------------------------------------------------------------|
|                                                        |         | Lecture                           | Tutorial | Practical/ Practice |                      |                                                            |
| Human Development II: Middle Childhood and Adolescence | 4       | 3                                 | 0        | 1                   | XII Pass             | Pass in DSC HH 101<br>Human Development 1: The Early Years |

**Learning Objectives**

1. To learn about the progression and domains of development during middle

- childhood years and adolescence.
2. To understand context specific cultural practices of development during middle childhood years and adolescence.
  3. To familiarize students with the use of different techniques of studying development during middle childhood and adolescence.

### Learning Outcomes

After completing this course, students will be able to:

1. Acquire a detailed understanding of development across domains from middle childhood through adolescence.
2. Gain insight on context specific cultural practices of development during middle childhood and adolescence.
3. Develop skills of using various techniques to study development during middle childhood and adolescence.

## SYLLABUS OF DSC 7

### THEORY (Credits 3; Hours 45)

#### UNIT I: Middle Childhood Years 12 Hours

This unit traces the progression of development across domains from 7-12 years of life.

Subtopics:

- Physical-motor development
- Cognitive and language development
- Moral development

#### UNIT II: Middle Childhood Years: The Social Context 10 Hours

This unit focuses on the social context of development during the middle childhood years.

The role of school, family, community and media is explored here.

Subtopics:

- Social and emotional development
- Role of family and peers
- Significance of School, community and media

#### UNIT III: Introduction to Adolescence 12 Hours

This unit describes the transition from childhood to adolescence with a focus on physical development and puberty and its impact on socio-emotional development.

- Theoretical perspectives on adolescence
- Puberty, sexual maturity, nutrition, health and psychological wellbeing
- Self and identity
- Family and peer relationships, interface with media

#### UNIT IV: Adolescence: Cognitive, Language and Moral development 11 Hours

This unit describes the progression in cognitive, language and moral development during adolescence.

- Perspectives on cognitive development
- Intelligence and creativity
- Adolescent language
- Adolescent morality

**PRACTICAL**  
**(Credits 1; Hours 30)**

- Methods of studying in Human Development
- Interview and Questionnaire
- Role of Family and peers during middle childhood
- Physical and sexual changes during puberty
- Sociometry
- Audiovisual resources to study middle childhood and adolescence
- Case profile of an adolescent
- Psychological tests

**Essential readings**

1. Berk, L. (2013). Child development (9th ed.). Boston: Pearson.
2. Santrock, J. W. (2011). Life-span development. New York: McGraw-Hill.
3. Singh, A. (Ed.) (2015). Foundations of Human Development. New Delhi: Tata McGraw-Hill.

**Suggested readings**

1. Bee, H., & Boyd, D. (2012). The Developing Child (13th ed.). Pearson
2. Journal of Developmental Psychology.
3. Papalia, D. E., & Martorell, G. (2015). Experience Human development.
4. McGraw Hill Education.
5. Rice, F. P. (2000). Human Development: A Life-span Approach. New Jersey: Prentice Hall
6. Sharma, N. (1999). Understanding Adolescence. National Book Trust
7. शर्मा, नी. (2009). किशोरावस्था: उलझाव -सुलझाव. अनुवाद रेणु चौहान. नेशनल बुक ट्रस्ट.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC CORE COURSE – 8**  
**DSC HH 308: Nutrition: A Life Cycle Approach**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code              | Credits | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course(if any)           |
|----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------------------------|
|                                  |         | Lecture                           | Tutorial | Practical/ Practice |                      |                                               |
| Nutrition: A Life Cycle Approach | 4       | 3                                 | 0        | 1                   | XII Pass             | Pass in DSC HH 102 Food Science and Nutrition |

**Learning Objectives**

1. To acquire knowledge about the nutritional needs and concerns of an individual throughout the life cycle.
2. To enable students in understanding the principles of planning nutritionally adequate diets.
3. To make them exercise food choices consonant with good health based on sound knowledge of principles of nutrition.

**Learning Outcomes**

After completing this course, students will be able to:

1. Acquire knowledge about the nutritional needs and concerns of an individual throughout the life cycle.
2. Comprehend the principles of planning nutritionally adequate diets.
3. Exercise food choices consonant with good health based on sound knowledge of principles of nutrition.

**SYLLABUS OF DSC 8**

**THEORY**  
**(Credits 3; Hours 45)**

**UNIT I: Basics of nutrient requirements and meal planning**

**12 Hours**

Unit Description: Concepts of food groups and food exchange lists for meal planning, factors affecting meal planning will be dealt with. Students will also be introduced to dietary guidelines for Indians. The concept of estimated average requirements, recommended allowances and methods of assessing nutrient requirements in general for Indians will be explained.

*Subtopics:*

- Food groups
- Food exchange list
- Factors affecting meal planning and food related behaviour, diet diversity
- Dietary guidelines for Indians
- Concept of EAR, RDA, AI and TUL
- Basic concepts of assessment of nutrient requirements

**UNIT II: Nutrition during adulthood and old age**

**12 Hours**

- Unit Description: Physiological influence on nutrient requirements during adulthood and old age (EAR/RDA), energy balance, nutritional concerns and changes in requirements during adulthood and old age, concept of healthy food choices, processed and ultra-processed food consumption and factors contributing to longevity will be dealt with.

*Subtopics:*

- Adult men and women
- Elderly

**UNIT III: Nutrition during pregnancy and lactation**

**9 Hours**

Unit Description: Physiological changes in pregnancy and lactation, EAR/RDA during pregnancy and lactation, nutritional guidelines, effect of nutritional status on pregnancy outcome, optimal weight gain and its components during pregnancy, nutrition related problems in pregnancy, importance of nutrition for successful lactation will be dealt with.

*Subtopics:*

- Pregnant women
- Lactating mothers

**UNIT IV: Nutrition during childhood**

**12 Hours**

- Unit Description: Physiological changes during infancy, childhood and adolescence – growth and development; nutrient requirements (EAR/RDA) during these age groups, guidelines on infant and young child feeding, nutrition concerns keeping in mind the changing food habits and importance of physical activity will be dealt with.

*Subtopics:*

- Infants
- Preschool children
- School children
- Adolescents

**PRACTICAL**  
**(Credits 1; Hours 30)**

**I Introduction to meal planning:**

- Rich sources of nutrients
- Use of food exchange lists

**II Planning nutritious diets for:**

- Adult (Male and Female)

- Pregnant and Lactating woman
- Pre-schooler
- Adolescent girl
- Elderly

### **III Planning and cooking of nutrient rich snacks/dishes for:**

- Infants (Freshly prepared complementary foods)
- Packed tiffin adults, adolescent and school going children (any one)
- Pregnancy/Lactation

### **Essential readings**

1. Chadha R and Mathur P eds. (2015). Nutrition: A Lifecycle Approach. Orient Blackswan, New Delhi
2. ICMR-NIN Expert Group on Nutrient Requirements for Indians, Recommended Dietary Allowances (RDA) and Estimated Average Requirements (EAR)-2020
3. Khanna K, Gupta S, Seth R, Passi SJ, Mahna R, Puri S (2013). Textbook of Nutrition and Dietetics. Delhi: Elite Publishing House Pvt. Ltd.
4. NIN (2011). Dietary Guidelines for Indians-A manual. Second Edition. National Institute of Nutrition, Indian Council of Medical Research, Hyderabad.

### **Suggested readings**

1. Byrd-Bredbenner C, Berning J, Kelly D, Abbot JM (2021). Wardlaw's Perspectives in Nutrition, McGraw- Hill International Edition, 12th edition
2. B Srilakshmi Eighth Edition (2019). Nutrition Science. New Age International Publishers.
3. Longvah T, Ananthan R, Bhaskarachary K and Venkaiah K (2017). Indian Food Composition Tables. National Institute of Nutrition, Indian Council of Medical Research, Department of Health Research, Ministry of Health and Family Welfare, Government of India, Hyderabad.
4. Sethi P, Lakra P (2015). Aahar Vigyan Suraksha evam Poshan. Delhi: Elite Publishing House Pvt.Ltd
5. Puri S, Bhagat A, Aeri, BT, Sharma A (2019). Food Exchange List: A Tool for meal Planning. Elite Publishing House. New Delhi.
6. Siddhu, A, Bhatia, N, Singh, K, Gupta, S (2017). Compilation of Food Exchange List, Technical Series 6, Lady Irwin College, University of Delhi Publ. Global Books Organisation, Delhi.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC CORE COURSE – 9**  
**DSC HH 309: Communication Systems and Social Change**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code                            | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course(if any)                           |
|------------------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|---------------------------------------------------------------|
|                                                |          | Lecture                           | Tutorial | Practical/ Practice |                      |                                                               |
| <b>Communication Systems and Social Change</b> | <b>4</b> | <b>3</b>                          | <b>0</b> | <b>1</b>            | <b>XII Pass</b>      | <b>Pass DSC HH 103</b><br>Communication Concepts and Theories |

**Learning Objectives**

1. To gain understanding of various Communication Systems and their applications in personal and professional life.
2. To learn about the applications of communication transactions in the field of Development Communication.
3. To recognize the importance of understanding self through concepts of self-concept, self-esteem and self-disclosure.
4. To understand the nuances of different levels of communication ranging from intra personal communication to organizational as well as intercultural communication.
5. To understand how communication transactions helps in persuading, influencing and bring out desired changes in individuals and groups.

**Learning Outcomes**

The students would be able to:

1. Develop a clear understanding of various communication systems and their relevance.
2. Comprehend the various levels of communication transactions and their applications in Development Communication approaches.
3. Gain understanding of self through self-concept, self-awareness and self-esteem.
4. Recognize and appreciate various communication networks in personal and professional spheres.
5. Understand how mass communication and media impact society through mass communication theories and models and their significance.

## SYLLABUS OF DSC 9

### THEORY (Credits 3; Hours 45)

#### **UNIT I: Intrapersonal and Interpersonal Communication** **9 Hours**

Elucidate upon the various levels of communication transactions. This Unit in particular lays thrust on the Intrapersonal and Interpersonal Communication Systems and processes.

Subtopics:

- Overview of communication transactions
- Intrapersonal Communication - Self Development, Looking Glass Self Theory, Self-concept and self-esteem, Awareness of Self & Johari's Window, Self-Disclosure.
- Interpersonal Communication - Functions, Types of relationships- friendship, families, other relationships, Stages of relationship development, Interpersonal Competence
- Theories of Relationship Development - Social Exchange Theory, Uncertainty Reductions
- Theory, Interpersonal Relationships Model.

#### **UNIT II: Small Group and Organizational Communication** **12 Hours**

This Unit highlights the small group communication characteristics, functions and power of group conformity. It emphasizes organizational communication with focus on culture and leadership.

Subtopics:

- Small group communication: Characteristics, Functions & Types
- Small Groups & Social Influence, Power in small group Conformity, Group Think & Polarization, Social Loafing
- Theories of group formation - Functional Theory, Structuration Theory, Symbolic Convergence
- Theory, Participatory theory
- Small Group Processes: Culture, Structure, Roles & Leadership
- Organization - concept, types and relationship in organization
- Organizational communication: Types: Formal Informal, Internal External, Direction &
- Networks, Functions, Tools used by organizations, challenges
- Organizational Culture and Leadership.

#### **UNIT III: Public, Intercultural and Mass Communication** **12 Hours**

This Unit highlights the Communication networks in professional and public spaces. It provides insight into the dynamics of intercultural communication. It also highlights the various theories and models of mass communication and emphasizes the significance and characteristics of various mass media.

Subtopics:

- Public communication - Concept, types, techniques and skills in public speaking, qualities of an effective public speaker, overcoming speaker apprehension
- Intercultural communication-concept, importance and relevance, stages and barriers
- Mass Communication - concept, significance, functions and elements
- Models and theories of mass communication
- Mass Media - Characteristics, classification, Evolution, significance of print, electronic and web- based media in contemporary society.

#### **UNIT IV: Scope of Levels of Transactions in Communication**

**12 Hours**

This Unit emphasizes role of communication transactions in facilitating change. How communication helps in persuading, influencing and bring out desired changes in individuals groups and organization's It strives to give conceptual clarity about use of communication in addressing conflict and strengthening personal and professional relationships.

Subtopics:

- What is Social Change?, Social change in individuals, communities and organizations Application of communication transactions for Persuasion, influencing ideas and Attitudes of individuals and groups
- Communications and building Self-Confidence, Self-development, identity and personal branding
- Communication in conflict management, relationship development & repair
- Business communication and strengthening organizational processes and efficacy
- Social and Behaviour Change Communication

#### **PRACTICAL (Credits 1; Hours 30)**

- Self-Awareness & Analysis of Communication with self
- Small Group dynamics
- Inter personal conflict resolution
- Media design and production for group and mass communication
- Evaluating & Designing communications for changing attitudes
- Evaluation of various communication strategies for social change

#### **Essential readings**

1. Anand, S. & Kumar, A. (2016). *Dynamics of Human Communication*. New Delhi: Orient Black Swan. ISBN: 9788125063254
2. Barker, L. (1990). "Communication", New Jersey: Prentice Hall, Inc; 171.
3. Devito, J. (2012). *Human Communication*. New York: Harper & Row.
4. Vivian, J. & Maurin, P. (2006) *The Media of Mass Communication* (4<sup>th</sup> Canadian). Pearson Allyn and Bacon.

**Suggested readings**

1. Baran, S. (2014) Mass Communication Theory. Wadsworth Publishing
2. McQuail, D. (2000) *Mass Communication Theories*. London: Sage Publications.
3. Patri, V. R. and Patri, N.(2002); Essentials of Communication. Greenspan Publications
4. Stevenson, D. (2002) Understanding Media Studies: Social Theory and Mass Communication, Sage Publications
5. Zeuschner, R. (1997). Communicating Today. California State University, USA

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC ELECTIVE**  
**DSE HH 3A1 : Organization and Management of Children's Institutions**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code                                           | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course(if any)                               |
|---------------------------------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-------------------------------------------------------------------|
|                                                               |          | Lecture                           | Tutorial | Practical/ Practice |                      |                                                                   |
| <b>Organization and Management of Children's Institutions</b> | <b>4</b> | <b>2</b>                          | <b>0</b> | <b>2</b>            | <b>XII Pass</b>      | <b>Pass in DSC HH 101</b><br>Human Development 1: The Early Years |

**Learning Objectives**

1. To comprehend the importance of services, institutions and programmes needed for children
2. To understand the aspects involved in management of children institutions and programmes
3. To develop sensitivity towards the individual needs of children
4. To develop an orientation towards planning developmentally and contextually appropriate activities for children

**Learning Outcomes**

The students would be able to:

1. Recognize the importance of providing services, programmes and institutions for children.
2. Describe the aspects involved in the management of children's institutions
3. Demonstrate an understanding of individual children's needs and develop appropriate activities for them
4. Identify challenges and opportunities while working in children's institutions

**SYLLABUS OF HH 3A1**

**THEORY**  
**(Credits 2; Hours 30)**

**UNIT I: Importance of children's institutions**  
**Hours**

**6**

Students will understand the purpose of setting up children's institutions, the types of institutions and how to conduct need assessment for such institutions.

Subtopics:

- Need/purpose for institutions for children
- Types of children's institutions- based on philosophy, context, and funds and resources in the country
- Significance of developmentally and contextually appropriate programmes for children
- Need Assessment- Situational Analysis, Baseline surveys, Resource Mapping

## **UNIT II: Management of children's institutions**

**12 Hours**

Students will be able to develop an understanding of the process involved in the management of children's institutions.

Subtopics:

- Planning and Organizing: Philosophy, concept, nature, goals and characteristics, steps in planning, services to be offered, organizing infrastructure and layout, maintenance, and emergency measures
- Developing the resources and services for the set-up - finance and budgeting, personnel- both managerial and staff (hiring, salary, creating supportive work environments, capacity building), infrastructure and equipment), enrolment of children.
- Supervision and monitoring: Types, factors, steps and requirements of effective supervision and monitoring
- Assessment and evaluation: Importance, types and steps; evaluation of the programme, curriculum, staff, and facilities according to the developed standards.
- Challenges in managing children's institutions and how to overcome them

## **UNIT III: Organizing programmes for children**

**12 Hours**

- Approaches to programme planning through selected case studies
- Using indigenous and local knowledge for planning and creating developmentally and contextually appropriate activities for children
- Ensuring and creating safe and productive spaces for children, importance of play
- Monitoring, assessment and evaluation of programmes and children (records and registers)
- Partnering with community and parents

### **PRACTICAL (Credits 2; Hours 60)**

- Visit to selected institutions working with children
- Needs assessment: Survey of locality and community (questionnaire)
- Community-baseline survey for programme development (interview/questionnaire)
- Developing checklists: Developmental norms for children, requisites of a good institution
- Case study of a private/government/non government children's institutions
- Placement/internship: Identifying needs and developing activities for all domains of development and undertaking developmentally appropriate activities within existing organisations
- Programme planning and assessment with the help of an organization

- Envisage a small project working in a group in collaboration with an existing organisation. Execute the project with special emphasis on individual/ group empowerment.
- Plan an outline/layout of setting up an institution on the basis of internship or fieldwork done.

### **Essential readings**

1. Chandra, P. (1995). Projects – Planning, Analysis, Selection, Implementation and Review. New Delhi: Tata McGraw
2. Hart, R.A. (1997). Children's Participation: The Theory and Practice of Involving Young Children in Community Development and Environmental Care.
3. Hildebrand, V. (1984). Management of Child Development Centres, New York: Collier Macmillan
4. Jayakaran, R.L. (1996). Participatory Learning and Action: Users' Guide and Manual. Madras: World Vision India
5. Montgomery, H. (Ed.). (2013). Local childhood, global issues. UK: The Policy Press.

### **Suggested readings**

1. Kretzmann, J.P. & McKnight, J.L. (1993). Building Communities from the Inside Out: A Path Toward Finding and Mobilizing a Community's Assets. Paperback ACTA Publications
2. Sriram, R. (2014). Engaging in Social Intervention (For Learners) Volume I. New Delhi: Concept Publishing.
3. Sriram, R. (2014). Engaging in Social Intervention (For Mentors) Volume II. New Delhi: Concept Publishing
4. Udayan Care (2017). Standard of Care in Child Care Institutions, A Series on Alternative Care.  
[https://www.udayancare.org/sites/default/files/Standards\\_of\\_Care.pdf](https://www.udayancare.org/sites/default/files/Standards_of_Care.pdf)
5. IGNOU. (2017). Unit-3 Organizations for Children, Block-1 Theory and Practice in Early Childhood Care and Education.  
<http://hdl.handle.net/123456789/34219>
6. IGNOU. (2017). Unit-4 Procedure for Establishing and Running Social Service Organisation, Block II Social welfare administration.  
<http://egyankosh.ac.in/handle/123456789/17235>
7. Vikaspedia. (n.d). Objectives and approaches to Child Care institutions,  
<https://vikaspedia.in/education/child-rights/living-conditions-in-institutions-for-children-in-conflict-with-law/objectives-and-approach-of-child-care-institutions>
8. Vikaspedia. (n.d). Roles and Responsibilities of Staff in CCI.  
<https://vikaspedia.in/education/child-rights/living-conditions-in-institutions-for-children-in-conflict-with-law/roles-and-responsibilities-of-staff>

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC ELECTIVE**  
**DSE HH 3B1 : Fundamentals of Human Anatomy and Physiology**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code                                 | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course(if any) |
|-----------------------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-------------------------------------|
|                                                     |          | Lecture                           | Tutorial | Practical/ Practice |                      |                                     |
| <b>Fundamentals of Human Anatomy and Physiology</b> | <b>4</b> | <b>2</b>                          | <b>0</b> | <b>2</b>            | <b>XII Pass</b>      | <b>NIL</b>                          |

**Learning Objectives**

1. To learn about the structural organization of the human body.
2. To understand the normal functioning of the organ systems and their interactions.
3. To correlate physiological changes with major disorders and their pathogenesis.
4. To understand and interpret common medical diagnostic tests and reports.

**Learning Outcomes**

The students would be able to:

1. Understand the knowledge about the functional organization of the human body.
2. Develop insight of normal functioning of all the organ systems of the body and their interactions
3. Correlate physiology with various disorders and their pathogenesis.
4. Understand and interpret common medical diagnostic tests and reports.

**SYLLABUS OF HH 3B1**

**THEORY**  
**(Credits 2; Hours 30)**

**UNIT I: Introduction to General Human Anatomy and Physiology. 4 Hours**

The unit presents the student with an overview of the general concepts of human anatomy and human physiology.

**Subtopics:**

*General terms:* Anatomy, Physiology, symmetrical arrangement, anatomical position, Median plane/ lateral plane, Internal/external, Superficial/ deep, Superior/ Inferior, Anterior/ posterior.

*Introduction to various systems of the body:*

- Animal Cell: structure, functions of each component (organelle) of the cell.
- Tissues: Structure and functions of various types of tissues.
- Various types, functions, structure of bone, cartilage & muscle
- Joints: Classification and movements of various joints.

## **UNIT II: Fundamentals of Human Anatomy**

**14 Hours**

The unit presents the student with the understanding of the gross and microscopic structure of the major organs of the human body.

Subtopics:

- Heart and its structure
- Arteries, Veins and lymphatic system
- Structure of nose, larynx, trachea, bronchi and lungs
- Digestive system: Mouth, pharynx, oesophagus, stomach, liver, gall bladder, pancreas, spleen, intestines and glands associated with gastrointestinal tract.
- Urinary system structure of kidney, ureters, bladder, and urethra
- Endocrine system Structure and functions of Pituitary, Thyroid, Pancreas, Ovary and Testes
- Structure of uterus, fallopian tubes & mammary gland
- Overview of organization and functions of the Nervous System (cerebrum, cerebellum, spinal cord, sympathetic and parasympathetic system)

## **UNIT III: Fundamentals of Human Physiology**

**12 Hours**

The unit presents the student with the understanding of the functioning of the major systems of the human body and its correlation with the pathogenesis of disease condition.

Subtopics:

- Cardiovascular System: circulations (systemic, pulmonary and portal), cardiac cycle, Cardiac Output (definition and factors affecting)
- Respiratory System: General overview of the respiratory functions Lung Volume and Capacities
- Digestive System: functions of: Stomach, Liver, Gallbladder, Pancreas and Intestines. Digestion and absorption of carbohydrates, fats and proteins Nervous and hormonal control of digestion (in brief)
- Excretory System: functions of Kidney and Nephron, non-excretory functions of kidneys Mechanism of urine formation,
- Endocrine System: Feedback mechanism/cascade functions of Pituitary, Thyroid, Pancreas, Ovary and Testes
- Reproductive System: Physiology of menstruation, lactation and menopause

## **PRACTICAL**

**(Credits 2; Hours 60)**

1. Basic concept of blood groups, types, importance, and Rh incompatibility
2. Clinical significance of RBC, WBC and Platelet counting (Slides and videos)

3. Demonstration of haemoglobin estimation methods with help of videos, and its significance. Discussion about different types of anaemias and their aetiology
4. Pulse rate measurement by at least two methods – a) at rest b) after physical activity and c) of a child and an elderly person. Comparative analysis.
5. Recording of BP by using a Sphygmomanometer in Standing, sitting and recumbent position
6. Use of Pulse Oximeter and its significance.
7. Clinical significance of liver function tests and Jaundice
8. Ten histological slides- description, diagrams, and correlation with respective theoretical understanding
  - a. Muscle: smooth, skeletal and cardiac
  - b. Thyroid
  - c. Parathyroid
  - d. Kidney and nephron
  - e. Small intestine
  - f. Liver
  - g. Pancreas
  - h. Stomach
  - i. Testes
  - j. Ovaries
9. Clinical significance of variations in blood glucose and Diabetes mellitus. Use of Glucometer
10. Project Report on Birth control Methods

### **Essential readings**

1. Chaudhari S K (2016) Concise Medical Physiology. 7<sup>th</sup> Edition. Central.
2. Ganong W.F. (2019)-Review of Medical Physiology. 26<sup>th</sup> ed. McGraw Hill.
3. Guyton A.C. and Hall J.E. (2015) Textbook of Medical Physiology. 13<sup>th</sup> ed. India: Harcourt Asia..
4. Tortora G.J and Grabowski S.R. (2020) Principles of Anatomy and Physiology. 16<sup>th</sup> ed. John Wiley and Sons. Inc.

### **Suggested readings**

1. Jain A. K (2019) Human Physiology for BDS (6<sup>th</sup> Edition), Publisher: Avichal Publishing Company; ISBN: 9788177394337.
2. Marieb E.N (2014) Human Anatomy and Physiology (10<sup>th</sup> ed) Pearson Education, Inc, publishing as Benjamin Cummings.
3. West J.B. (1996): Physiological Basis of Medical Practice. 12<sup>th</sup> Edition. B. I. Waverly Pvt. Ltd.
4. Vander's Human Physiology (2016) (WCB APPLIED BIOLOGY). 13<sup>th</sup> ed.
5. Human Physiology: From Cells to Systems (2012) (Mindtap Course List) 8<sup>th</sup> ed.
6. Comprehensive Textbook of Medical Physiology (Volume 2), 2017 by Gopal Krushna Pal, Pravati Pal, Nivedita Nanda.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC ELECTIVE**  
**DSE HH 3C1: Media and Cultural Studies**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code               | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course(if any)                           |
|-----------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|---------------------------------------------------------------|
|                                   |          | Lecture                           | Tutorial | Practical/ Practice |                      |                                                               |
| <b>Media and Cultural Studies</b> | <b>4</b> | <b>2</b>                          | <b>0</b> | <b>2</b>            | <b>XII Pass</b>      | <b>Pass DSC HH 103</b><br>Communication Concepts and Theories |

**Learning Objectives**

1. To appraise the importance of culture, cultural transmission and cultural influences on human interactions.
2. To gain knowledge of key theories, concepts, models and perspectives in the study of communication & media.
3. To understand the relevance and roles of communication media in individual lives as well as in the larger context of culture & society.
4. To analyze the relationships, dynamics, and trends within communication media, culture & society.

**Learning Outcomes**

The students would be able to:

1. Assess the significance of culture, cultural transmission and cultural influences on human interactions.
2. Enhance their awareness on the concepts, models and perspectives in the study of communication & media.
3. Comprehend the relevance and roles of communication media in individual lives as well as in larger context of culture & society.
4. Critically analyse the relationships, dynamics, and trends within communication media, culture & society.

**SYLLABUS OF HH 3C1**

**THEORY**  
**(Credits 2; Hours 30)**

**UNIT I: Understanding Culture**

**6 Hours**

This unit explores the different dimensions of culture and its types. It also highlights the concepts of hegemony and ideology along with cultural influences and role of media. It touches upon the essence of folk culture and the relation between media, society and popular culture.

Subtopics:

- Concept of cultures, subcultures and counter culture
- Popular, folk and mass culture
- Role of Ideology and hegemony
- Commercialization of folk culture
- Culture in perspective of communities

## **UNIT II: Media & Media Audience**

**8 Hours**

Unit II highlights the importance of mass media in our lives and the types of media audiences. It elaborates on the processes of media audience analysis

Subtopics:

- Role of Mass Media in society
- Media Audience
- Types of Audience
- Foucault's Notion of Knowledge and Power
- Queer Studies and Representations of Gender in Media

## **UNIT III: Ideologies in media and culture**

**8 Hours**

This unit highlights the relation between media, society and ideologies. It explains the concept of Habermas Public sphere and cultural industry

Subtopics:

- Frankfurt school
- Culture and consumption: cultural 'goods', structure and movement of cultural meaning.
- Cultural industry
- Public Sphere

## **UNIT IV: Media Realism and Technologies**

**8 Hours**

This particular unit critically acclaims the notion of media and realism along with gaining insights into postcolonial theory. It further elaborates upon the Indian Context to Media, Culture & Society

Subtopics:

- Introduction to Postcolonial Theory
- Indian Context to relationship between Media, Culture & Society
- Postcolonial from Indian perspective
- Digital media and culture

## **PRACTICAL (Credits 2; Hours 60)**

- Media Critiquing- Choose a movie or television series and apply some of the concepts and techniques about interpretation, ideology, or gender/class/race.

- Audience perceptions about media; audience preferences listenership/ viewership
- Assessing the prevalence of cultural stereotypes in the society and depiction of the same via media

### Essential Readings

- Grossberg, Lawrence et al. (1998). *Media-Making: Mass Media in a popular culture*. Sage Publications
- Bannerjee, P. (2021). *Cultural Studies: Texts and Contexts*. India: Dattsons. ISBN: 8171922007
- Nayar, P. (2016). *An Introduction to Cultural Studies*. India: Viva Books. ISBN: 8130933985
- Achebe, Chinua. (2010). *The African Trilogy: Things Fall Apart; No Longer At Ease; Arrow of God*. Alfred A. Knopf
- Ghosh, Amitav. (2008). *Sea of Poppies*. Viking Canada
- Habermas, J. (2006). 'The Public Sphere: An Encyclopaedia Article' in *Media and Cultural Studies- Key Works by Meenakshi Gigi, et.al. (Eds)*. Oxford: Blackwell Publishing
- Williams, Raymond. (1997). *Marxism and Literature*, Oxford UP
- Butler, Judith. (1990). *Gender Trouble: Feminism and the Subversion of Identity*. Routledge

### Suggested Readings

- Butler, Judith. (1993). *Bodies That Matter: On the Discursive Limits of Sex*. Routledge
- Woolf, Virginia. (1925). *Mrs Dalloway*. Harcourt, Brace, and Co
- Despande, Shashi. (1989). *That Long Silence*. Penguin
- Berger, Asa Authur (1998). *Media Analysis Technique*. Sage Publications
- Stevenson, N (2002). *Understanding Media Studies: Social Theory And Mass Communication*, 2nd edition, Sage publications
- Walder, Dennis. (1998). *Post-Colonial Literatures in English: History, Language, Theory*. Blackwell Publishers
- Loomba, Ania. (2005). *Colonialism/Postcolonialism*. 2nd Edition, Routledge
- Mambrol, Nasrullah. (2018). *Postcolonialism Literary Theory and Criticism Notes*, [literariness.org/2016/04/06/postcolonialism/](http://literariness.org/2016/04/06/postcolonialism/)
- Watson, Katherine. (2005). *Queer Theory* The Group-Analytic Society, Vol 38, no. 1, pp. 81-85. DOI:10.1177/0533316405049370
- Duncan, Margaret Carlisle and Michael Messer. (1993). *Separating the Men from the Girls: The Gendered Language of Televised Sports*. *Gender and Society* 7 1, pp. 121-137
- Michel Foucault. (1997). What Is Enlightenment? in Paul Rabinow, ed., *Ethics: Subjectivity and Truth*, The Essential Works of Foucault 1954-1984, Volume I, New Press

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC ELECTIVE**  
**DSE HH 3D1: Apparel Design and Construction Techniques**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code                               | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the Course (if any)         |
|---------------------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|----------------------------------------------|
|                                                   |          | Lecture                           | Tutorial | Practical/ Practice |                      |                                              |
| <b>Apparel Design and Construction Techniques</b> | <b>4</b> | <b>2</b>                          | <b>0</b> | <b>2</b>            | <b>XII Pass</b>      | <b>Pass in DSC HH 204</b><br>Fashion Studies |

**Learning Objectives**

1. To impart knowledge regarding the basics of apparel design.
2. To make students understand various terminologies used in relation to garment components and their application in designing garments.
3. To develop a level of proficiency in making patterns for simple garments
4. To be able to independently lay patterns, cut fabric and sew a garment

**Learning Outcomes**

The students would be able to:

1. Develop basic knowledge of apparel design and describe its terminology.
2. Apply the knowledge of fabrics and fabric terminology to follow preparatory steps before garment cutting
3. Use and apply the concept and techniques of pattern making, laying out and cutting
4. Judicious application of knowledge for producing quality in patterns, and processes in garment assembly
5. Have basic skill in pattern making for women's clothes
6. Use and apply the concept and techniques of various seams and edge finishes

**SYLLABUS OF HH 3D1**

**THEORY**  
**(Credits 2; Hours 30)**

**UNIT I: Apparel Design with Garment Components**

**8 Hours**

Unit Description: This unit will acquaint students with different types of garment components.

Subtopics: Garment Components: Types

- Bodices and yokes
- Necklines
- Collars
- Sleeves and cuffs
- Plackets and fasteners

- Pockets

## **UNIT II: Introduction to Body measurements and pattern making**

**6 Hours**

This unit will delve into the concept, significance and techniques of body measurements, basic block and patterns.

Subtopics:

- Measurement on body – importance, procedure and precautions
- Basic Blocks and patterns – importance, types and pattern information
- Pattern making technique – Slash and spread for added fullness: gathers, pleats, flare and tucks

## **UNIT III: Preparation for garment construction**

**8 Hours**

This unit provides an insight into the concepts and processes of fabric selection, terms, preparatory steps, fabric layouts, pinning, marking and cutting.

Subtopics:

- Fabric selection: characteristics, construction, drape, weights, widths and trade name
- Fabric Grain – types, identification and importance
- Preparatory steps- preshrinking, straightening and truing
- Layouts for patterns-general guidelines, basic layouts- lengthwise, partial lengthwise, crosswise, double fold, open, combination fold
- Layouts for special fabrics- Unidirectional, bold and large prints, plaids, stripes and checks, various widths of fabrics
- Pinning, marking, cutting - Tools and processes

## **UNIT IV: Sewing, Seams and finishing of raw edges**

**8 Hours**

This unit offers information on sewing machines, appropriate stitching guidelines, seams and various additional techniques required for finishing seams and garment edges.

Subtopics:

- Sewing machines - types, basic parts and their function, basic operations, seam defects and remedies
- Relationship between needle, thread, stitch length & fabric weight
- Seam classification - super imposed seam, enclosed, lapped seam, bound seam, flat seam and decorative seam
- Additional techniques for straight, curved and cornered seams: clipping, notching, grading, seam balancing, trimming, under stitching, stay stitching, trimming a corner, handling unequal seams (easing)
- Edge treatments of straight & curved edges- self finish, bias strip and its importance, bias facing, bias binding, shaped facing, self-finishing, casings and finishing with trims

### **PRACTICAL (Credits 2; Hours 60)**

#### **1. Designing for Children's garments**

- Drafting of child's basic bodice and sleeve block

- Adaptation of three bodice-short waist, standard waist and low waist
- Adaptation of sleeves- puffed and its variations, flared
- Developing collars- peter pan and its variations
- Adapting bodice to various frocks - A-line, yoked, short bodice, elongated bodice with gathers, pleats and flares

## **2. Sewing techniques**

- Introduction to a sewing machine – Practice sewing
- Seam – Plain seam - straight and curved, cornered, French seam, Flat Felled seam
- Edge Finishing – Straight and curved (Facing and Binding)
- Construction of plackets with suitable fastener- even hem with button and button hole, continuous wrap
- Construction of any one frock with sleeve and collar

## **Essential readings**

1. Armstrong, H.J., 2009, Pattern Making for Fashion Design, Harper Collins Publishers Inc., New York.
2. Stamper, A.A., S. H. Sharp and L.B. Donnell, 1986, Evaluating Apparel Quality, Fairchild Publications, America
3. Liechty, E.G., Potterberg, D.N., Rasband, J.A., 2010, Fitting and Pattern Alteration: A Multimethod Approach, Fairchild Publications, New York.

## **Suggested readings**

1. Carr H. & Latham B. (1994), The Technology of Clothing Manufacture, 2nd edition, Blackwell SC.
2. Cooklin, G. (1991), Introduction to clothing manufacture, Blackwell publishing.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC ELECTIVE**  
**DSE HH 3E1: Human Resource Management**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code              | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course(if any)                              |
|----------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|------------------------------------------------------------------|
|                                  |          | Lecture                           | Tutorial | Practical/ Practice |                      |                                                                  |
| <b>Human Resource Management</b> | <b>4</b> | <b>2</b>                          | <b>0</b> | <b>2</b>            | <b>XII Pass</b>      | <b>Pass in DSC HH 205</b><br>Fundamentals of Resource Management |

**Learning Objectives**

1. To familiarise the students with the importance of human resources and their effective management in organisations.
2. To comprehend functions of human resource management.
3. To sensitize students towards the emerging trends and modern practices in the field of human resource management to meet the changing needs of business environment.

**Learning Outcomes**

The students would be able to:

1. Develop an understanding about the discipline of human resource management.
2. Acquire knowledge about the functions of human resource management.
3. Gain insight into emerging trends and modern practices in the field of human resource management.

**SYLLABUS OF HH 3E1**

**THEORY**  
**(Credits 2; Hours 30)**

**UNIT I: Human Resources Management**

**6**

**Hours**

The focus of this unit would be on developing the fundamental concepts of human resource management and its applicability in changing business environment.

Subtopics:

- Concept, functions, roles, skills and competencies
- Changing environment of HRM- Globalization, corporate downsizing, cultural environment, work force diversity, changing skill requirement, technological changes.

- HRM support for improvement programs -re engineering processes, contingent workforce, decentralized work sites.

## **UNIT II: Functions of HRM**

**10 Hours**

This unit attempts to acquaint the students in understanding the functions of human resource management.

Subtopics:

- Manpower planning
- Job Analysis – job description and job specification
- Recruitment and selection
- Placement and Induction
- Performance appraisal and development
- Compensation and Benefits
- Training and Development
- Motivation

## **UNIT III: Human Resources Audit**

**8 Hours**

This unit will help students to gain insights about the components of HR system used in an organization for auditing purposes to check its effectiveness.

Subtopics:

- Concept, significance, components and process
- HRM as a strategic partner
- Work life balance.

## **UNIT IV: Industrial Relations**

**6 Hours**

This unit will help students to understand the role of HR in industrial relationship management.

Subtopics:

- Introduction to Industrial Relations and Industrial disputes
- Employee grievances and Discipline
- Collective bargaining

## **PRACTICAL (Credits 2; Hours 60)**

- Analysis of human resource management environment and HR audit in an organization through case-studies.
- Simulations/Presentations:
  - Human Resource Planning
  - Job Analysis: job description and job specification and Design (levels)
  - Recruitment, selection, and placement Strategies
  - Interview techniques and skills (mock interview)
  - Performance appraisal and management (methods)
- Developing Matrix for skill and talent acquisition

## **Essential readings**

1. Aswathappa K. (2021). Human Resource Management Text and Cases (9th Ed.) McGraw Hill Education India.

2. Dessler G. (2020). Human Resource Management, Prentice Hall of India Pvt. Ltd, New Delhi.
3. Decenzo, D. A., & Robbins, S. P. (2011). Fundamentals of Human Resource Management. India: Wiley.
4. Rao, V.S.P. (2010). Human Resource Management, 3rd Edition, Excel Books.

**Suggested readings**

1. Noe, R.A., Hollenbeck, Gerhart and Wright (2012). Fundamentals of Human Resource Management, 3rd Edition, McGrawHill Education Ltd.
2. Ivancevich, J.M.(2010). Human Resource Management, 10th Edition, Tata McGraw Hill Education Pvt. Ltd.
3. Vance, C.M. and Paik, Y. (2009). Managing a Global Workforce: Challenges and Opportunities in International Human Resource Management, PHI Learning.
4. Subbaroo, R. (2007). Personnel and HRM – Text and Cases, Himalaya Publishing House, New Delhi.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

## COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

### GENERIC ELECTIVE (GE HS 003) : CHALLENGES IN CONTEMPORARY CHILDHOOD

#### Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code                  | Credits | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
|                                      |         | Lecture                           | Tutorial | Practical/ Practice |                      |                             |
| Challenges in Contemporary Childhood | 4       | 3                                 | 0        | 1                   | XII Pass             | NIL                         |

#### Learning Objectives

1. To understand the social construction of childhood
2. To understand depiction of childhood experiences in India
3. To know and learn about diverse contexts of childhood
4. To appreciate contemporary themes and challenges of Indian childhood

#### Learning Outcomes

The students will be able to:

1. Learn the concepts related to multiple childhood
2. Study children's experiences of ethnicity, class, caste, religion and gender
3. Learn about children in difficult circumstances
4. Get sensitized to appreciate diverse contexts of children

#### SYLLABUS OF GE HS 003

##### THEORY (Credits 3; Periods 45)

#### UNIT I: Influences on Indian Childhood

**12 Hours**

Unit Description: This unit presents an overview by revisiting central themes and concerns related to childhood in India

Subtopics:

- Sociology of childhood
- Disadvantaged childhood
- Caste and childhood

- Gender and children

## **UNIT II: Multiple contexts of Childhood**

**12 Hours**

Unit Description: This unit will focus on understanding children in multiple settings and contexts

Subtopics:

- Childhood in urban, semi-urban, rural and tribal context
- Socialization and growing in diverse families
- Children in foster and institutional settings
- School as a context of development - Educational inequity and learning diversity

## **UNIT III: Children in Difficult Circumstances**

**12 Hours**

Unit Description: This unit will help us to develop understanding of children in difficult circumstances and the challenges

Subtopics:

- Street and Working children
- Trafficked children and children of sex workers
- Children of migrant and refugee families
- Children in conflict with law and children in contact with law
- Children in war and other disaster situations

## **UNIT IV: Contemporary Challenges and Childhood**

**9 Hours**

Unit Description: This unit will focus on the various challenges faced by children in different contexts.

Subtopics:

- Childhood in digital era/cyberbullying/child pornography/violence in schools like bullying
- Gender concerns and safety, Body boundaries and consent
- Supporting childhood in India

## **PRACTICAL (Credit 1; Periods 30)**

- Exploring and analysis of diverse childhood context and challenges through audio-visual materials/social media/print media.
- Interview Street children/working children/ children with disabilities to understand their circumstances
- Profile organisations working for children in difficult circumstances
- Conduct workshop/webinars to understand the various vulnerabilities related to Indian children like cyberbullying, Bodyboundaries, inclusion & diversity

### **Essential readings**

1. Chopra, G. (2016). Child rights in India: challenges and social action. S.l.: Springer, India, private.
2. Sachdeva ,P.,Murmu,D.F. & Sakshi.(2020).Basic Sociology. Delhi . Elite Publishing
3. Saraswathi, T.S. (Ed.) (1999). Culture, Socialization and Human Development: Theory, Research and Applications in India. Sage Publications Chapter 4: Theoretical Frameworks in Cross-cultural Psychology, Chapter 6: Individualism in a Collective Culture: A Case of Co-existence of Opposites

4. Vasanta, D. (2004). Childhood, Work and Schooling: Some Reflections. Contemporary Education Dialogue, Vol. 2(1), 5-29

**Suggested readings**

1. Balmès, T. (Director), & Chabat, A., Billot, A., & Rouxel, C. (Producers). (2010). Babies [Motion picture on DVD]. Universal Studios Home Entertainment.
2. Nissani, M. (1997). Ten cheers for interdisciplinarity: The case for interdisciplinary knowledge and research. Social Science Journal, 34(2), 201.
3. Mukunda, K. V. (2009). What Did You Ask in School Today? A Handbook on Child Learning. Noida: Harper Collins. Chapter 4: Child Development, 79-96
4. Sandra, L. Bem (1987). Gender Schema Theory and its Implications for Child Development: raising gender schematic children in a gender schematic society, in M.R. Walsh, (ed). The Psychology of Women Harvard University Press Cambridge, 206-226

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

## GENERIC ELECTIVE (GE HS 007) : CURRENT CONCERNS IN PUBLIC HEALTH NUTRITION

### Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code                                | Credits  | Credit distribution of the course |          |                      | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|----------------------------------------------------|----------|-----------------------------------|----------|----------------------|----------------------|-----------------------------|--------------------------------|
|                                                    |          | Lecture                           | Tutorial | Practical / Practice |                      |                             |                                |
| <b>Current Concerns in Public Health Nutrition</b> | <b>4</b> | <b>3</b>                          | <b>0</b> | <b>1</b>             | <b>XII Pass</b>      | <b>NIL</b>                  | <b>Home Science</b>            |

### Learning Objectives

1. To understand the multi-faceted nature of nutritional problems and the various interventions that can be adopted at community level for improving the nutritional status.
2. To learn about the policy and intervention programmes operating in India to overcome malnutrition.
3. To understand the concept and determinants of food and nutrition security.

### Learning Outcomes

The student will be able to:

1. Understand the multi-faceted nature of nutritional problems.
2. Aware of the various interventions that can be adopted at community level for improving the nutritional status.
3. Familiar with the policy and intervention programmes operating in India to overcome malnutrition.
4. Understand the concept and determinants of food and nutrition security

### SYLLABUS OF GE HS 007

#### THEORY (Credits 3; Periods 45)

#### UNIT I: Nutritional Problems Affecting the Community

12

Unit Description: Students will be explained about the existing nutritional problems in the community in the present scenario.

Subtopics:

Etiology, prevalence, clinical features and preventive strategies for-

- Undernutrition - Protein energy malnutrition, Moderate Acute Malnutrition, Severe Acute Malnutrition, Nutritional Anaemias, Vitamin A Deficiency, Iodine Deficiency Disorders
- Obesity, Metabolic Syndrome
- Coronary heart disease, Diabetes
- Fluorosis

## **UNIT II: Strategies for Improving Nutrition and Health Status of the Community 9**

Unit Description: Students will be taught about the different approaches and strategies that could help alleviate the nutrition and health status of the community.

Subtopics:

- Appropriate interventions involving different sectors such as Food, Health, and Education – diet diversification, food fortification, supplementation, genetic modification, improved water and sanitation, immunization, promotion of optimal infant and young child feeding practices, growth monitoring and promotion (GMP), diarrhoea management and prevention

## **UNIT III: Nutrition Policy and Programmes 12**

Unit Description: Students will be introduced to all the major ongoing national level interventions and strategies and goals to combat malnutrition in the nation.

Subtopics:

- Sustainable Development Goals – Introduction, and relevance to nutritional problems in India
- National Nutrition Policy
- Ongoing nutrition programmes – Integrated Child Development Services (ICDS) Scheme, Mid-day Meal Programme (MDMP), National programmes for prevention of Anaemia, Vitamin A deficiency, Iodine Deficiency Disorders, National Programme for Prevention and Control of Cancers, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS), POSHAN Abhiyaan

## **UNIT IV: Food and Nutrition Security 12**

Unit Description: Students will be taught the concept of food and nutrition security and the associated national level intervention and programs. Subtopics:

- Concept, components, determinants
- Overview of the ongoing public sector programmes for improving food and nutrition security

### **PRACTICAL (Credit 1; Periods 30)**

Planning of low cost nutritious recipes for preschoolers, school age children, adolescents, pregnant and nursing women.

- Planning of nutritious recipes for an obese and an underweight adult.
- Visit to on-going nutrition programmes.

**Essential readings:**

1. Bamji, MS, Krishnaswamy, K. & Brahman, G N(Eds.). (2017). Textbook of Human Nutrition (4th ed.). New Delhi, India: Oxford and IBH Publishing Co. Pvt. Ltd.
2. Longvah, T, Ananthan, R, Bhaskarachary, K & Venkaiah, K (2017). Indian Food Composition Tables. National Institute of Nutrition, ICMR, Hyderabad.
3. Park, K (2017). Park's Textbook of Preventive and Social Medicine (24th ed.). Jabalpur, India: Banarasidas Bhanot Publishers.
4. Vir, S (2011). Public Health Nutrition in Developing Countries (Vol 1 & 2). New Delhi, India: Woodhead Publishing India.

**Suggested readings:**

1. Gibney, M J, Margetts, B M, Kearney, J M & Arab, L (Eds.). (2005). Public Health Nutrition. Oxford, UK: Blackwell Science.
2. ICMR (2011) Dietary Guidelines for Indians – A Manual. National Institute of Nutrition, Indian Council of Medical Research, Hyderabad.
3. Kishore, J (2016). National Health Programs of India (12th ed.). New Delhi, India: Century Publications.
4. Chadha, R and Mathur, P (eds.) (2015). Nutrition A Lifecycle Approach. New Delhi, India: Orient Blackswan Pvt. Ltd.
5. Ministry of Women and Child Development (MWCD), Government of India. (2019). POSHAN Abhiyaan [online]. Available at: <https://icds-wcd.nic.in/nnm/home.htm> (Accessed: July 12, 2019).
6. Relevant and ongoing public sector programmes for food and nutrition security from Government of India websites (including Ministry of Agriculture and Farmers Welfare, Ministry of Consumer Affairs, Food and Public Distribution, Ministry of Human Resource Development, and other ministries working for food and nutrition security).

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

## GENERIC ELECTIVE (GE HS 010) : PARTICIPATORY DEVELOPMENT AND COMMUNICATION

### Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code                                | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|----------------------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
|                                                    |          | Lecture                           | Tutorial | Practical/ Practice |                      |                             |                                |
| <b>Participatory Development and Communication</b> | <b>4</b> | <b>3</b>                          | <b>0</b> | <b>1</b>            | <b>XII Pass</b>      | <b>NIL</b>                  | <b>Home Science</b>            |

### Learning Objectives

1. To understand the concept of participation, Participatory Development and Participatory Communication.
2. To appreciate the role of facilitation for meaningful participation.
3. To develop an understanding of the interplay between the indigenous practices and theoretical concepts of participation.
4. To critically reflect on the role of civil society organizations in promoting participatory approach across sectors and levels of development.
5. To critically examine the use of participatory approach and tools across sectors and regions and relevance to the Indian context.

### Learning Outcomes

1. The student will be able to understand the notion of participation and the dimensions of Participatory Communication
2. The student will be able to apply the principles and approaches of Participatory Communication in community research
3. The student will be able to appreciate and use the different tools and methods of Participatory Learning & Appraisal.
4. The student will be able to reflect on the role of civil society organizations in promoting participatory approach across sectors and levels of development
5. The student will be able to explore the nuances of designing and applying Participatory Media.

### SYLLABUS OF GE HS 010

#### THEORY (Credits 3; Periods 45)

## **UNIT I: Understanding Participatory Approach**

**12 Hours**

Unit Description: Unit I delves into the core concept and nature of Participation and its relation with development. It highlights the principles and levels of participation. The Unit also asserts the importance and channels of Participatory Communication and how effective facilitation is and essential for participation of marginalized groups.

Subtopics:

- Concepts of Participation and Participatory Development
- Participation, Power, Voice and Marginalization
- History & Theoretical perspectives on Participatory Development
- Principles & Levels of Participation
- Process of Participation: Dialogue, Reflection & Consensus
- Reflective Practice, Empowerment & Social Change
- Civil Society Organizations & Participatory Development

## **UNIT II: Participatory Approach & Methods 9 Hours**

Unit Description: Unit II explores the concept, principles, advantages of Participatory Learning & Appraisal with its plethora of tools and their applications.

Subtopics:

- Participatory Learning & Appraisal: Principles and practices
- Scope and Application of PLA Tools
- Classification of PLA Tools: Relationship, Space & Time Related PLA
- Innovative PLA Tools
- Participatory Research methodology: approach and praxis

## **UNIT III: Participatory Learning & Action**

**12 Hours**

Unit Description: This Unit discusses the application of the Participatory Approach in different contexts such as local governance, NGOs and CSOs, M&E .

Subtopics:

- Participatory Approaches & Local Governance
- People's Participation in community development and Development Programs
- Participatory approaches in management of Disasters & Pandemics
- Role of Traditional & Indigenous knowledge in Participatory Approaches

## **UNIT IV: Participatory Media**

**12 Hours**

Unit Description: The last Unit touches upon the concept, significance, functions and elements of the various Participatory Media.

Subtopics:

- Participatory Communication, Right to Communicate, development & empowerment
- Community Media concept, significance, functions and elements
- Growth, types, characteristics, policy & programing:
  - Community Radio
  - Participatory Video
  - Participatory Print media
  - Participatory New Media
- Alternative Theater and the performing arts

**PRACTICAL**  
**(Credit 1; Periods 30)**

- Analysis of case studies in Participatory Development
- Situation Analysis using PLA techniques
- Time Related PLA: Daily Activity Chart
- Space Related PLA: Social Mapping, Resource Map, Transect Walk, Facility Assessment
- Relationship Related PLA: Venn Diagram, Spider Web Diagram
- Ranking Methods: Seed Ranking
- Qualitative PLA Research Tools: Interview, Focused Group Discussion, Case Study
- Participatory Media Analysis & Production

**Essential readings:**

1. Mikkelsen, Britha, (2002). Methods for Development Work and Research. New Delhi: Sage Publications.
2. Robert Chambers. "What Works and Why?" and "Poor Peoples' Reality" in Whose Reality Counts? Putting the First Last (Intermediate Technology Publications, London, 1997): pp. 130-187.
3. Bhatnagar. O.P & Dahama, O.P. (2009). Education and Communication for Development 2ed. New Delhi: Oxford & IBH Publishing Co. Pvt Ltd. ISBN-13: 978-8120400306.
4. Kumar, S (2002). Methods for Community Participation: A Complete Guide for Practitioners. New Delhi: Vistaar Publications.

**Suggested readings:**

1. Ferguson (1994), The Anti-Political Machine: Development, Depoliticization, and Bureaucratic. Cambridge University Press pp. 1-167.
2. Ilan Kapoor (2002) "The devil in the theory: a critical assessment of Robert Chambers' work on participatory development" Third World Quarterly. Vol. 23, No. 1, p. 101-117. Cornwall A (2003). Whose Voices? Whose Choices? Reflections on Gender and Participatory Development World Development. Vol. 31, No. 8, pp. 1325-1342.
3. McIntyre (2008) Participatory Action Research Sage University Papers pp.1-60.
4. Dale R, (2004). Evaluating Development Programmes and Projects. New Delhi: Sage Publications.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

## GENERIC ELECTIVE (GE HS 017) : FASHION ACCESSORIES

### Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code        | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre- requisite of the course |
|----------------------------|----------|-----------------------------------|----------|---------------------|----------------------|------------------------------|
|                            |          | Lecture                           | Tutorial | Practical/ Practice |                      |                              |
| <b>Fashion Accessories</b> | <b>4</b> | <b>3</b>                          | <b>0</b> | <b>1</b>            | <b>XII Pass</b>      | <b>NIL</b>                   |

### Learning Objectives

1. To impart knowledge of fashion accessories
2. To familiarize the students with leading accessory designers
3. To provide knowledge of the basics of common accessories viz., handbag, footwear and hats
4. To help students in understanding design methodology, materials, production process and market dynamics of fashion accessories

### Learning Outcomes

The student will be able to

1. Recognize the role and importance of fashion accessories in the apparel industry
2. Describe the various categories, history, styles and production methods of fashion accessories
3. Restyle and coordinate accessories with apparel using creative ideas
4. Understand forecast, trends, and process of accessory designing
5. Develop skills in range planning and creating fashion accessory

## SYLLABUS OF GE HS 017

### THEORY (Credits 3; Periods 45)

#### UNIT I: Overview of Fashion Accessories

**12 Hours**

This unit traces the history and importance of fashion accessories. It discusses the fashion cycle, role of an accessory designer and leading accessory brands and designers around the world.

Subtopics:

- History of accessories from ancient times to present

- Importance of fashion accessories in apparel industry
- Fashion cycle of fashion accessories
- Role of an accessory designer
- Leading accessory brands and designers

## **UNIT II: Categories, Styles and Production Methods of Selected Fashion Accessories** **12 Hours**

The unit brings forth the categories, styles and production methods of fashion accessories. It also helps to understand the coordination of fashion accessories with apparel.

Subtopics:

- Brief history, components, styles, materials and production methods of accessories: Handbags, Footwear, Hats, Belts, Ties, Scarves, etc.
- Coordinating accessories with apparel

## **UNIT III: Concept to Creation: Overview of Fashion Accessories Industry 9 Hours**

This unit provides an insight into marketing and promotional aspects of fashion accessories.

Subtopics:

- Inspiration and research for design development
- Trend analysis and forecasting process
- Spec-sheets and Tech Packs
- Sourcing of material
- Costing
- Developing a range
- Care and maintenance

## **UNIT IV: Marketing and Promotion**

**12 Hours**

Ways to increase the life of garments to reduce waste generation.

Subtopics:

- Marketing of fashion accessories
- Window concepts and displays
- Promotional practices

## **PRACTICAL** **(Credit 1; Periods 30)**

- Study of materials for fashion accessories
- Sketching of fashion accessories – Handbags and Footwear
- Sketching and rendering of life-size handbag and footwear (One each)
- Reporting of national and international accessory brand/ designer (One each)
- Theme based accessory designing - Mood boards, designing and construction (Any one product)
- Restyling project – Restyle plain accessories using any surface ornamentation technique

### **Essential readings:**

1. Genova Aneta (2011), Accessory Design, Fairchild Publications; 1 edition
2. Know Your Fashion Accessories, Celia Stall- Meadows, Fairchild Books; Student ed. Edition (25 August 2003), ISBN-13: 978-1563672453
3. Lau John (2012), Basics Fashion Design 09: Designing Accessories: Exploring the design and construction of bags, shoes, hats and jewellery, A Publishing; 1

edition

4. Schaffer Jane, Saunders Sue (2012), Fashion Design Course: Accessories: Design Practice and Processes for Creating Hats, Bags, Shoes, and Other Fashion Accessories, Barron's Educational Series
5. Stephens Frings Gini, (2007), Fashion: From Concept to Consumer (9th Edition), Prentice Hall

**Suggested readings:**

1. Abling Bina (2005), marker rendering for Fashion, Accessories, and Home Fashion, Bloomsbury Academic, Illustrated Edition, ISBN 1563673606, 9781563673603.
2. Gervail Olivier (2009), Fashion Accessories, A&C Black, Illustrated edition, ISBN 140811058X, 9781408110584.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

## GENERIC ELECTIVE (GE HS 019) : CORPORATE SOCIAL RESPONSIBILITY

### Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code             | Credits | Credit distribution of the course |          |                     | Eligibility criteria | Pre- requisite of the course |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|------------------------------|
|                                 |         | Lecture                           | Tutorial | Practical/ Practice |                      |                              |
| Corporate Social Responsibility | 4       | 3                                 | 0        | 1                   | XII Pass             | NIL                          |

### Learning Objectives

1. To understand the meaning, scope and importance of Corporate Social Responsibility (CSR)
2. To understand CSR projects with respect to SDGs
3. To understand the Indian legislations for CSR
4. To learn about the implementation and monitoring of CSR activities
5. To understand the need, process and tools of communicating CSR projects
6. To understand CSR reporting guidelines

### Learning Outcomes

The student will be able to:

1. Understand the meaning, scope and importance of Corporate Social Responsibility (CSR)
2. Assess the role of CSR projects with respect to SDGs
3. Understand Indian legislations for CSR
4. Understand implementation and monitoring of CSR projects through case studies
5. Develop material/tools for CSR communication
6. Understand and evaluate CSR reports as per standard reporting guidelines

## SYLLABUS OF GE HS 019

### THEORY (Credits 3; Periods 45)

#### UNIT I: Introduction to Corporate Social Responsibility (CSR) 9 Hours

Unit Description:

This Unit aims at orienting the students towards the concept and importance of Corporate Social Responsibility (CSR), triple bottom line, and ESG

Subtopics:

- Meaning, definition and importance

- History and evolution of CSR
- Sustainable businesses, triple bottom line, ESG (Environmental, Social and Governance)

## **UNIT II: International framework for Corporate Social Responsibility 12**

Unit Description:

This Unit aims to create an understanding on Indian legislations for CSR, UN guiding principles and SDGs.

Subtopics:

- Indian legislations for CSR; Companies Act, 2013 and Amendments
- UN guiding principles on business and human rights.
- SDGs and CSR

## **UNIT III: Design, implementation and Monitoring of CSR activities 12**

Unit Description:

This Unit aims to create an understanding towards design, implementation and monitoring of CSR activities, CSR funding and audit

Subtopics:

- CSR design, implementation and monitoring
- Role of Stakeholders in CSR
- Funding for CSR activities
- CSR Audit; issues related to CSR Audit
- Globalization and CSR

## **UNIT IV: CSR Communications**

**12 Hours**

Unit Description: This Unit aims to create an understanding towards the need, process and tools of CSR communication and CSR reporting guidelines Selection of materials

Subtopics:

- Need, process and tools of communicating CSR projects
- Brand building through CSR communications
- CSR Reporting Guidelines

## **PRACTICAL (Credit 1; Periods 30)**

### **I: Understanding CSR initiatives**

Activities:

- Need Assessment for CSR activities by corporates
- Case studies on CSR initiatives taken by corporates
- Case studies on Foundation/Trust/Section 8 Companies etc. implementing CSR initiatives

### **II: Planning CSR activities and Communications**

Activities:

- Planning innovative CSR Projects/Programmes in context of SDGs
- CSR communications: Presentations, Websites, Print Media, Social media etc.
- Evaluation of CSR reports

### **Essential readings:**

1. Garg, K. (2021). Corporate Social Responsibility (3<sup>rd</sup> edition). Bharat Law House Pvt. Ltd.

2. Institute of Directors India. (2020). A Handbook on Corporate Social Responsibility, A Condensed Guide for Corporate Directors & Senior Executive. Institute of Directors, New Delhi, India.
- Antonaras, A., & Dekoulou, P. (2019). Cases on Corporate Social Responsibility and Contemporary Issues in Organizations (Advances in Business Strategy and Competitive Advantage) 1st Edition. IGI Global.
3. Paleri, P. (2019). Corporate Social Responsibility: Concept, Cases and Trends. Cengage Learning India Pvt. Ltd. ISBN-10: 9353501601, ISBN-13: 978-9353501600.
4. Lumde, N. (2018). Corporate Social Responsibility in India: A Practitioner's Perspective. Notion Press. ISBN-10: 1644295431, ISBN-13: 978-1644295434.

**Suggested readings:**

1. Mitra, N., & Schmidpeter, R. (2016). Corporate Social Responsibility in India: Cases and Development after the Legal Mandate. Springer International Publishing, Switzerland.
2. Reddy, V. R., & Dheeraja, C. (2016). The Six Essential Steps in Implementing CSR. Studera Press, New Delhi.
3. Chakrabarty, B. (2015). CSR in India. Routledge.
4. Agarwal, S. (2013). CSR in India. SAGE Publications.
5. Chatterji, M. (2011). Corporate Social Responsibility. Oxford University Press India; Reprint edition. ISBN-10: 0198069839 ,ISBN-13 : 978-0198069836.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

## B.SC. HOME SCIENCE (PROG.)

### DISCIPLINE SPECIFIC CORE COURSE

#### DSC HP 307 : Fundamentals of Textiles

#### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code      | Credits | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
|                          |         | Lecture                           | Tutorial | Practical/ Practice |                      |                                      |
| Fundamentals of Textiles | 4       | 3                                 | 0        | 1                   | XII Pass             | Pass in DSC HP 102 Fashion Concepts  |

#### Learning Objectives

1. To impart knowledge regarding production, properties and usage of textile fibres and yarns
2. To create awareness regarding various techniques of fabric production and their properties
3. To give an overview of dyeing, printing and finishing of textiles

#### Learning Outcomes

After completing this course, students will be able to:

1. Describe textile fibres in terms of their production and properties
2. Understand production techniques and properties of yarns
3. Explain various methods of fabric construction and relate them to specific uses keeping in mind fabric properties
4. Recall various dyeing, printing and finishing techniques

#### SYLLABUS OF DSC HP 307

##### THEORY (Credits 3; Hours 45)

##### UNIT I: Introduction to Textile Fibres

6 Hours

This unit will deal with the key concepts of textile polymers, morphology of textile fibers, primary, secondary properties and classification of textile fibers.

- Morphology of textile fibers: Monomer, Polymer, Degree of Polymerization, Crystalline and Amorphous Regions, Orientation
- Primary and secondary properties
- Fiber classification

##### UNIT II: Production, Chemistry, Properties and Usage of Fibers

12 Hours

This unit will introduce the student to selected commercially significant cellulosic, protein and man-made fibers, their production, chemistry, properties and usage

- Natural fibers: Cotton, Flax, Silk, and Wool
- Man-made fibers: Rayon, Nylon, Polyester, Acrylic, and Elastomeric fibers

### **UNIT III: Production and Properties of Yarns**

**8**

#### **Hours**

This unit will discuss the techniques of yarn production, types of yarns and their properties.

- Yarn construction:
  - Mechanical spinning (Cotton system, Wool system, Worsted system)
  - Chemical spinning (Wet, Dry, Melt)
- Types of yarns: Staple and Filament yarns, Simple and Complex yarns
- Yarn Properties: Yarn Twist and Balance, Yarn Count

### **UNIT IV: Techniques of Fabric Construction**

**11 Hours**

This unit will apprise the students about different fabric construction techniques. Students will learn basic principles of weaving, knitting and non-woven fabrics.

- **Weaving**
  - Parts of a loom
  - Operations and motions of the loom
  - Classification of weaves- construction, characteristics, usage
- **Knitting**
  - Classification of knits
  - Construction and properties of warp and weft knits
- **Non-wovens**
  - Types
  - Construction
  - Properties and usage

### **UNIT V: Basics of Wet Processing**

**8 Hours**

This unit help students gain insight to the fundamentals of textile processing, viz. dyeing, printing and finishing.

- **Dyeing**
  - Fundamentals of dyeing- Dyes and Pigments
  - Stages of dyeing- Advantages and Disadvantages
- **Printing**
  - Fundamentals of printing
  - Difference between dyeing and printing,
  - Methods of printing: Block, Screen
  - Styles of printing: Direct, Resist, Discharge
- **Finishes**
  - Classification of finishes
  - Routine finishes

**PRACTICAL**  
**(Credit 1; Hours 30)**

- Fibre Identification tests –Visual, burning, microscopic and chemical
- Yarn Identification – Single, ply, cord, textured, elastic, monofilament, multifilament and spun yarn
- Thread count and balance
- Fabric identification (woven, knitted, non-woven)
- Identification of basic weaves
- Tie-Dye

**Essential Readings**

1. Rastogi, D. & Chopra, S. (Eds.) (2017). *Textile Science*. New Delhi, India: Orient Black Swan Publishing Limited.
2. Rastogi, D, Chopra, S., Arora, C. & Chanchal (Eds.). (2016). *Textile Science-A Practical Manual*. New Delhi, India: Elite Publishing House Private Limited.
3. Sekhri S. (2022). *Textbook of Fabric Science: Fundamentals to Finishing*. IV Edition, Delhi, India: PHI Learning.
4. Joseph, M. L. (1988). *Essentials of Textiles*. (6th Edition). Florida: Holt, Rinehart and Winston Inc.
5. Corbman, P.B. (1983). *Textiles- Fiber to Fabric*. (6th Edition). USA: McGraw Hill.

**Suggested Readings**

1. Collier B. & Tortora G. Phyllis. (1997). *Understanding Textiles*. USA: Merrill.
2. Hollen, N. and Saddler, J. (1979). *Textile*. New York: Mcmillan.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC CORE COURSE**  
**DSC HP 308 : Personal Finance and Consumer Education**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code                            | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course(if any)                              |
|------------------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|------------------------------------------------------------------|
|                                                |          | Lecture                           | Tutorial | Practical/ Practice |                      |                                                                  |
| <b>Personal Finance and Consumer Education</b> | <b>4</b> | <b>3</b>                          | <b>0</b> | <b>1</b>            | <b>XII Pass</b>      | <b>Pass in DSC HP 101</b><br>Introduction to Resource Management |

**Learning Objectives**

1. To provide students' an understanding of income, saving and investment management in the changing socio-economic environment.
2. To acquaint students with the concept of consumers' role in an economy, consumer problems, education and empowerment.
3. To comprehend issues related to consumer protection, legislative measures and redressal mechanisms.
4. To provide insights and practical knowledge of critically evaluating and designing various consumer aids.

**Learning Outcomes**

1. After completing this course, students will be able to:
2. Gain knowledge of income, saving and investment management in the changing socio-economic environment.
3. Understand the role of consumer in the economy, consumer problems, education and empowerment.
4. Comprehend issues related to consumer protection, legislative measures and redressal mechanisms.
5. Gain practical knowledge of critically evaluating and designing various consumer aids.

## **SYLLABUS OF DSC HP 308**

### **THEORY (Credits 3; Hours 45)**

#### **UNIT I: Income and Expenditure**

**15 Hours**

The unit focuses on developing the fundamental concepts of income, savings and investment management and its applicability in changing socio-economic environment.

Subtopics:

- Household Income – Types, Sources, Supplementation of family income
- Income management – significance of budgeting, steps of making a budget, household accounts
- Factors influencing expenditure pattern
- Family savings and investments- need, principles, channels of investment, tax implications
- Consumer credit

#### **UNIT II: Consumer in India: Consumer problems and education Hours**

**12**

This unit attempts to acquaint the students in understanding the consumer problems faced, role of consumer education and empowerment in today's context.

Subtopics:

- Definition of a consumer
- Role of consumers in the economy
- Types of consumer problems – products and service related, causes and remedies
- Guidelines for wise buying practices
- Consumer education and empowerment, sustainable consumption
- Changing nature of the business world –e-commerce, e-business

#### **UNIT III: Consumer Protection**

**9 Hours**

This unit will orient the students in understanding the need for consumer protection, rights and responsibilities available for safeguarding consumers' interest.

Subtopics:

- Consumer protection
- Consumer rights and responsibilities
- Consumer organizations and their role in consumer protection

#### **UNIT IV: Legislative framework for consumers protection**

**9 Hours**

The unit focuses on the legislative frameworks, acts and redressal mechanisms available for consumers for their protection.

Subtopics:

- Basic legislative framework for consumer protection in India
- Consumer Protection Act (COPRA) and its amendment
- Alternative redressal mechanisms
- Standardization and quality control measures

### **PRACTICAL (Credit 1; Hours 30)**

- Understanding and designing standardization marks.

- Evaluation and designing of informative and attractive labels of different types of products.
- Evaluation and designing of advertisements in the print media including products, services and social ads.
- Case study of banks and post offices to understand their services and products.
- Learning to fill different bank forms.
- Analysis of consumer redressal through case study approach.
- Food adulteration tests.

#### **Essential readings**

1. Mital, M., Sawhney, H. K. (2015). *Family Finance and Consumer Studies*. New Delhi: Elite Publishing House Pvt. Ltd.
2. Mital M., Jain, S., & Mehta, C. (2015). *Family finance and Consumer Studies: A Practical Manual, Second Edition*. New Delhi: Elite Publishing House Pvt. Ltd.
3. Seetharaman, P. and Sethi, M. (2001). *Consumerism: Strength and Tactics*. New Delhi: CBS Publishers.

#### **Suggested readings**

1. Khanna, S. R., Hanspal S., Kapoor S. & Awasthi H.K. (2007). *Consumer Affairs*. Universities Press India Pvt. Ltd.
2. Arora, R. *Consumer Grievances Redressal*. New Delhi: Manak Publications.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC CORE COURSE**  
**DSC HP 309 : Introductory Physical Science For Home Science**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title& Code                             | Credits | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course(if any) |
|------------------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-------------------------------------|
|                                                |         | Lecture                           | Tutorial | Practical/ Practice |                      |                                     |
| Introductory Physical Science for Home Science | 4       | 2                                 | 0        | 2                   | XII Pass             | NIL                                 |

**Learning Objectives**

1. To develop basic understanding of different chemical and physical concepts and to relate them with everyday life.
2. To enhance skills of students in handling different equipment.

**Learning Outcomes**

The students would be able to:

1. Study about different chemicals/compounds, their reactions and applications in everyday life.
2. Correlate structures of compounds with their properties and functions.
3. Develop understanding of the basic principles, theories and laws of physics and correlate them with real life situations.
4. Acquire ability to demonstrate basic experimental skills, handling different equipment and understand their working principles.
5. Apply the basic knowledge to different fields of home science.

**SYLLABUS OF DSC HP 309**

**THEORY**  
**(Credits 2; Hours 30)**

**Section A-Chemistry**

**UNIT I: Basic Concepts of Chemistry**

**10 Hours**

Fundamental concepts like solutions, nature of substances and organic chemistry

Subtopics:

- Solutions- Properties of water, types of solutions, ways of expressing concentrations of solutions (normality, molarity, strength), colloids (types, properties and applications of colloids)
- Acids and bases – Definition (Arrhenius, Lewis and Bronsted), examples and applications in daily life, pH, pH scale, buffer solutions and pH measurement
- Oxidising and reducing agents - Oxidation and reduction, antioxidants, examples and applications
- Organic Chemistry – Tetravalency of carbon, catenation, functional groups, types of organic compounds and their importance, nomenclature (examples- alkanes, alkenes, alkynes, alcohols, alkyl halides, aldehydes, ketones, amines, acids and esters).

## **UNIT II: Important Chemical Compounds**

**6**

### **Hours**

Cleaning agents and biomolecules

Subtopics:

- Surfactants – Soaps and synthetic detergents (structure, cleansing action and their applications)
- Disinfectants – Commonly used disinfectants and their hazards, eco-friendly disinfectants
- Dyes- Classification of dyes, natural dyes
- Biomolecules - Importance of carbohydrates, lipids, proteins and nucleic acids.

## **Section B-Physics**

### **UNIT III: Mechanics and electricity**

**10 Hours**

Basics of mechanics and electricity

Subtopics:

- Measurements of Physical Quantities- Units and dimensions
- Different types of motions- Translational motion, Circular motion, rotational motion, oscillatory motion and their applications
- Elasticity, stress, strain, elastic limit, Hooke's law, stress-strain diagram, Young's modulus, Shear modulus and Bulk modulus
- Concept of current, voltage and Ohm's law. Heating and magnetic effect of current
- Alternating Current, AC motor, comparison between alternating current and direct current
- Electrical Protection: Fuses and disconnect switches, circuit breakers, Earthing
- Estimation of electrical energy used and concept of star rating of household equipment
- Renewable energy- Solar energy, Wind energy, hydro energy, geothermal energy

### **UNIT IV: Heat, Optics and Sound**

**4 Hours**

Basics of heat, optics and sound

Subtopics:

- Temperature and its measurements
- Calorimetry, change of state with applications
- Heat transfers and thermal conductivity
- Sound waves, production and properties
- Spectrum of light, basics of diffraction and interference

**PRACTICAL**  
**(Credits 2; Hours 60)**

## Section A- Chemistry

- Safe handling and disposal of chemicals generally used in chemical laboratories
- Calculation and preparation of standard solutions (Sodium chloride, sodium bicarbonate)
- Determination of pH of different solutions
- Experiments using Analytical techniques:
  - Acid-base titrations
  - Redox titrations
  - Estimation of salinity in saline water
  - Determination of hardness of water using complexometric titration

Detection of functional groups- Acids, Alcohols, Aldehydes and Ketones

Qualitative tests for carbohydrates

## Section B- Physics

- Basic mathematical concepts and study of different types of experimental errors, their reporting and graphing techniques
- Study of least count of different measuring instruments and familiarization of multimeter
- Measurement of volume of the given cylinder using Vernier calliper
- Measurement of area of cross section of a rod and a wire using screw gauge
- Determination of elastic constants of a wire by Searle's method
- Comparison of thermometric scales of temperature using graph method and verification of Newton's law of cooling
- Study of different types of lenses and determination of focal length of double convex lens by one pin method
- Setting up of two way lighting circuit and calculation of cost of electricity consumed
- Verification of Ohm's law and to determine the resistance of a conductor using graph method.
- Study of the voltage and current of the solar cells.
- Demonstration of colour measurement using colorimeter.

## Essential readings

1. Ahluwalia V. K. Dhingra, S. and Gulati, A. (2005). College Practical Chemistry, University Press (India) Pvt. Ltd., New Delhi.
2. Bahl A. and Bahl B.S. (2016). A textbook of Organic Chemistry. S. Chand and Sons, New Delhi.
3. Boyle G. (2012). Renewable Energy, Power for a sustainable future 3rd Ed. Oxford University Press, U.S.A.
4. Gomber K.L., Gogia K.L. (2015). Fundamental Physics. Pradeep publications, Jalandhar.
5. Sharma P. and Pathania. (2016). Principles of Physical Chemistry. Vishal Publishing Company, New Delhi.
6. Sukhatme, S.P. and Nayak, J. K. (2017). Solar energy. Tata McGraw - Hill Publishing Company Ltd., India.
7. Walker, J., Resnick, R., Halliday, D. (2013). Fundamentals of Physics. Wiley, United States.

**Suggested readings**

1. Bahl A. and Bahl B.S. (2012). Advanced Organic Chemistry. S. Chand and Sons, New Delhi.
2. Jacob T. (1979). Textbook of Applied Chemistry. McMillan India Ltd., Noida.
3. Lal S. (1995). Fundamental Physics. Pradeep Publication, Delhi.
4. Morrison and Boyd. (2011). Organic Chemistry. Pearson Education, New Delhi.
5. Singh H. (2001). B.Sc. Practical Physics. S. Chand and Co., New Delhi.
6. Vogel (2009). Quantitative Chemical analysis. Pearson Education, New Delhi.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC ELECTIVE**  
**DSE HP 3A1 : Developmental Diversity across Ecological Settings**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code                                       | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the Course (if any)                                          |
|-----------------------------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-------------------------------------------------------------------------------|
|                                                           |          | Lecture                           | Tutorial | Practical/ Practice |                      |                                                                               |
| <b>Developmental Diversity across Ecological Settings</b> | <b>4</b> | <b>2</b>                          | <b>0</b> | <b>2</b>            | <b>XII Pass</b>      | <b>Pass in DSC HP 204</b><br>Lifespan Development I: Prenatal and Early Years |

**Learning Objectives**

1. To learn about the concepts, features and theoretical approaches to ecological settings
2. To know about various ecological settings and diversities and how it shapes development
3. To understand relationship between ecological settings and diversity

**Learning outcomes**

The students would be able to:

1. Acquire an understanding of basic concepts, salient characteristics and theoretical perspectives of ecological settings
2. Demonstrate knowledge of different ecological settings and diversities
3. Be able to identify relationship between ecology, diversity and development

**SYLLABUS OF DSE HP 3A1**

**THEORY**  
**(Credits 2; Hours 30)**

**UNIT I: Concepts and theoretical foundations**

**7 Hours**

- Basic concepts and key terms: ecology, diversity and features of human ecology
- Theoretical approaches and perspectives to understanding ecological systems
- Historical and demographic attributes of ecological settings

**UNIT II: Diverse ecological landscapes**

**12 Hours**

- Diverse settings: urban, rural and tribal ecologies, conflict zones, medical settings, post-disaster contexts
- Socio-cultural and individual variables: caste and class, cultural variations, religion, poverty livelihood, gender, education, health and disability.

- Local and global understanding of human geographies

### UNIT III: Developmental diversity across settings

11 Hours

- Experiences of growing up in India: working children, migrant children, sibling caregivers, growing up with disability
- Contemporary issues and themes addressing ecological diversities – poverty and disability/ gender and disability/ immigration/ refugee status/ environmental changes/ mobility
- Diversity, disadvantage, disability: influence on development

### PRACTICAL (Credits 2; Hours 60)

- Visit a locality and write about the physical and social features of the ecology
- Develop a checklist to understand the ecological setting (with reference to children)
- Using a checklist to study daily schedule of a child with special needs/ child from a disadvantaged group and highlight significant factors in the setting
- Exploring different ecological settings using mental mapping and photo elicitation
- Observe and interview children on the street, working children, a child with special needs and map their ecologies
- Using a theoretical framework, analyze one's own ecological setting and reflect on various diversities
- Case profile to understand the ecological setting of any one of the following:
  - A slum
  - A shelter home
  - A village
  - An institutional care setting
- Representing lived experiences of growing up in diverse ecologies through role play technique
- Analyze and understand the changes in demographic characteristics of your city/town/village using secondary sources
- 

Understanding diversities of childhood ecologies through audio-visual analysis

Film: Babies/ Traffic signal/ Documentary by UNICEF

### Essential readings

1. Anandalakshmy, S., & Bajaj, M. (1981). Childhood in the weavers' community in Varanasi: Socialization for adult roles. In D. Sinha (Ed.), *Socialisation of the Indian child* (pp. 31-38). Concept.
2. Dyson, J. (2006). Respite and Rupees: The Impact of a new market opportunity on everyday lives of children and young people in Indian Himalayas. In D. Behera (Ed.), *Childhoods in South Asia* (pp. 29-42). Pearson.
3. Ghazoul, J. (2020). *Ecology: A very short introduction*. Oxford University Press. <https://doi.org/10.1093/actrade/9780198831013.001.0001>
4. Hutterer, K. L., Terry Rambo, A., & Lovelace, G. (2020). *Cultural values and human ecology in Southeast Asia*. University of Michigan Press.
5. King, R., & Maholmes, V. (2012). *The Oxford Handbook of Poverty and Child Development*. Oxford University Press
6. Lerner, R. M., Schiamberg, L. B., & Anderson, P. M. (2003). *Encyclopedia of Human Ecology: AH* (Vol. 1). ABC-CLIO.

7. Saraswathi, T. S. (Ed.) (1999). Culture, Socialization and Human Development: Theory, Research and Applications in India. Sage Publications Chapter 4: Theoretical Frameworks in Cross-cultural Psychology, Chapter 6: Individualism in a Collective Culture: A Case of Co-existence of Opposites.
8. Saraswathi, T. S., Menon, S., & Madan, A. (2019). *Childhoods in India*. Routledge India.
9. Dakshayani, B. & Gangadhar, M.R. (2016). *Child development among the scheduled tribes of India*. Aayu Publications.
10. Shelton, L. (2018) *The Bronfenbrenner Primer: A Guide to Devel ecology*. Routledge

#### **Suggested readings**

1. Desai, A. (1982). *The village by the sea: An Indian family story*. Heinemann
2. Devi, M. (2003). *Kyun Kyun Ladki*. Tulika Publishers.
3. Harkness, S., & Super, C. (1996). *Parents Cultural Belief Systems: Their Origins, Expressions and Consequences*. New York: The Guilford Press.
4. Shingnapure, V. J. (2007). *Tribal Children: Education, health and labour*. Dattsons.
5. Vasanta, D. (2004). Childhood, Work and Schooling: Some Reflections. *Contemporary Education Dialogue*, Vol. 2(1), 5-29.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC ELECTIVE**  
**DSE HP 3B1 : Food Science**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course(if any)                                   |
|---------------------|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------------------------------------------------|
|                     |          | Lecture                           | Tutorial | Practical/ Practice |                      |                                                                       |
| <b>Food Science</b> | <b>4</b> | <b>2</b>                          | <b>0</b> | <b>2</b>            | <b>XII Pass</b>      | <b>Pass in DSC HP 205</b><br>Foundation of Food Science and Nutrition |

**Learning Objectives**

1. To enable students to understand how food is produced, processed, prepared and preserved.
2. To impart systematic knowledge of sensory & objective evaluation, food laws and their applications in processing of food to meet quality standards.
3. To acquire knowledge about the role of microorganisms in food processing, preservation and spoilage.

**Learning outcomes**

The students would be able to:

1. Students learn the principles and working of various techniques in order to preserve food, to provide safe food for consumption and produce nutritious food.
2. Gain knowledge of methods of food quality evaluation and applications of food laws essential for maintaining food quality and safety.

**SYLLABUS OF 3B1**

**THEORY**  
**(Credits 2; Hours 30)**

**UNIT I: Understanding of Food Science and chemistry**

**12 Hours**

The unit will provide an understanding of the basic terms used in food science, its interdisciplinary approach and applications. The unit will also provide knowledge of the food sources, chemistry and functional properties of important components of the food. Concept of how colloidal systems are formed and their applications in the food industry will be discussed.

Subtopics:

- Introduction to food science: Definition, importance, applications and scope of food science.
- Food Chemistry- Sources, chemistry and functional properties of Carbohydrates, Lipids and Proteins.
- Colloidal Chemistry-Definition, classification, properties and applications of sols, gels, foams and emulsions.

**UNIT II: Basic Food Microbiology****8 Hours**

The unit will introduce types of food microorganisms, and their role in spoilage

*Subtopics:*

- Introduction to microbes in food - Characteristics of predominant micro-organisms in food (yeast, mold and bacteria), bacterial growth curve, factors influencing growth of microorganisms.
- Role of microorganisms in spoilage - Important food spoilage micro-organisms (psychotrophic, thermophilic, osmophilic microbes), spoilage in specific food groups (raw meat, fruits & vegetables), role of microorganisms in food fermentation.

**UNIT III: Food Preservation Techniques****5 Hours**

The unit provides an understanding of different food preservation techniques, and their applications in extending shelf life of different food product.

- Low temperature: Freezing, refrigeration
- High temperature: Drying and dehydration, canning, pasteurization
- Irradiation and use of additives

**UNIT IV: Sensory Science****5 Hours**

The unit will help in understanding the sensory quality attributes and sensory evaluation of food.

*Subtopics:*

- Physiological basis of sensory evaluation
- Subjective and objective methods of sensory evaluation

**PRACTICAL**  
**(Credits 2; Hours 60)**

- Food analysis: Moisture, pH, acidity, Total soluble solids using standard methods of FSSAI.
- Assessment of surface sanitation by swab/rinse method.
- Implementation of GHP, HACCP, ISO 22000 using suitable example.
- Slide preparation and identification of micro-organisms.
- Application of colloidal chemistry to food preparation.
- Preservation of food using different methods (Blanching, Dehydration, Freezing).
- Sol /gel formation and factors affecting gel formation
- Recognition and threshold for basic tastes.
- Evaluation of food labels in accordance with FSSAI rules and regulations on Food labeling and Packaging.

**Essential readings**

1. Frazier WC and Westhoff DC (2014). Food Microbiology, Fifth Edition. TMH Publication, New Delhi.
2. Manay NS and Shadaksharaswamy M (2008). Food-Facts and Principles, Third Edition. New Age International (P) Ltd. Publishers, New Delhi.
3. Mathur P. (2018). Food Safety and Quality Control. Orient BlackSwan Pvt. Ltd., Hyderabad.
4. Potter NN and Hotchkiss H J (1996). Food Science, Fifth Edition. CBS Publication, New Delhi.
5. Suri, S. and Malhotra, A. (2014). Food Science Nutrition and Safety. Delhi: Pearson India Ltd.

**Suggested readings:**

1. Mohini Sethi, Eram Rao (2011). Food science- Experiments and applications, Second Edition. CBSpublishers & Distributors Pvt Ltd.
2. Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food
3. Preparation: A Complete Manual, Fourth Edition. Orient Black Swan Ltd.
4. Sivashankar. B (2002). Food Processing and Preservation. PHI learning Pvt. Ltd.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC ELECTIVE**  
**DSE HP 3C1: Media, Culture and Society**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code               | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course(if any) |
|-----------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-------------------------------------|
|                                   |          | Lecture                           | Tutorial | Practical/ Practice |                      |                                     |
| <b>Media, Culture and Society</b> | <b>4</b> | <b>2</b>                          | <b>0</b> | <b>2</b>            | <b>XII Pass</b>      | <b>NIL</b>                          |

**Learning Objectives**

1. To appraise the importance of culture, cultural transmission and cultural influences on human interactions
2. To gain knowledge of key theories, concepts, models and perspectives in the study of communication & media
3. To understand the relevance and roles of communication media in individual lives as well as in the larger context of culture & society
4. To analyze the relationships, dynamics, and trends within communication media, culture & society

**Learning Outcomes**

The students would be able to:

1. Assess the significance of culture, cultural transmission and cultural influences on human interactions
2. Enhance their awareness on the concepts, models and perspectives in the study of communication & media
3. Comprehend the relevance and roles of communication media in individual lives as well as in larger context of culture & society
4. Critically analyse the relationships, dynamics, and trends within communication media, culture & society

**SYLLABUS OF DSE HP 3C1**

**THEORY**  
**(Credits 2; Hours 30)**

**UNIT I: Understanding Culture**

**6 Hours**

This unit explores the different dimensions of culture and its types. It also highlights the concepts of hegemony and ideology along with cultural influences and role of media. It touches upon the

essence of folk culture and the relation between media, society and popular culture. It revisits the work of Raymond Williams and Stuart Hall in explaining the concepts of culture and further provides diverse perspectives on popular culture

Subtopics:

- Concept of cultures, subcultures and counter culture
- Popular, folk and mass culture
- Role of Ideology and hegemony

## **UNIT II: Media & Media Audience**

**8 Hours**

Unit II highlights the importance of mass media in our lives and the types of media audiences. It elaborates on the processes of media audience analysis

Subtopics:

- Role of Mass Media in society
- Media Audience
- Media Audience analysis (segmentation)
- Types of Audience
- Foucault's Notion of Knowledge and Power
- Queer Studies and Representations of Gender in Media

## **UNIT III: Media and Popular Culture**

**8 Hours**

This unit highlights the relation between media, society and popular culture. It revisits the work of Raymond Williams and Stuart Hall in explaining the concepts of culture and further provides diverse perspectives on popular culture

Subtopics:

- High Culture and Popular Culture
- Relation between Media, Society and Popular culture
- Perspectives of Critical Theorists, Functionalists & Interactionists Raymond Williams, Stuart Hall
- Perspectives of Critical theorists: Culture Industry and Mass Deception; Walter Benjamin

## **UNIT IV: Media Realism and Technologies**

**8 Hours**

This particular unit critically acclaims the notion of media and realism along with gaining insights into postcolonial theory. It further elaborates upon the Indian Context to Media, Culture & Society

Subtopics:

- Introduction to Postcolonial Theory
- Indian Context to relationship between Media, Culture & Society
- Interconnections between Literature, media, Culture and Identity
- Postcolonial from Indian perspective
- Digital media and culture

**PRACTICAL**  
**(Credits 2; Hours 60)**

- Media Critiquing- Choose a movie or television series and apply some of the concepts and techniques about interpretation, ideology, or gender/class/race.
- Audience perceptions about media; audience preferences listenership/ viewership
- Assessing the prevalence of cultural stereotypes in the society and depiction of the same via media

### **Essential readings**

1. Grossberg, Lawrence et al (1998) Media-Making: Mass Media in a popular culture. Sage Publications
2. Mc Quail, Denis. (2000). Mass Communication Theory. London, Thousand Oaks, New Delhi: Sage Publications.
3. Potter, James W (1998) Media Literacy. Sage Publications
4. Bannerjee, P. (2021). Cultural Studies: Texts and Contexts. India: Dattsons. ISBN: 8171922007
5. Nayar, P. (2016). An Introduction to Cultural Studies. India: Viva Books. ISBN: 8130933985
6. Achebe, Chinua. (2010) The African Trilogy: Things Fall Apart; No Longer At Ease; Arrow of God. Alfred A. Knopf
7. Ghosh, Amitav. (2008), Sea of Poppies, Viking Canada
8. Ghosh, Amitav. (2011). River of Smoke. Penguin India
9. Ghosh, Amitav. (2016). Flood of Fire. Penguin India
10. Habermas, J. 2006. 'The Public Sphere: An Encyclopaedia Article' in Media and Cultural Studies- Key Works by Meenakshi Gigi, et.al. (Eds). Oxford: Blackwell Publishing.
11. Williams, Raymond. (1977) Marxism and Literature, Oxford UP
12. Butler, Judith. (1990). Gender Trouble: Feminism and the Subversion of Identity. Routledge

### **Suggested readings**

1. Berger, Asa Author (1998). Media Analysis Technique. Sage Publications
2. Stevenson, N (2002). Understanding Media Studies: Social Theory And Mass Communication, 2nd edition, Sage publications
3. Walder, Dennis. (1998). Post-Colonial Literatures in English: History, Language, Theory. Blackwell Publishers
4. Loomba, Ania. (2005) Colonialism/Postcolonialism. 2nd Edition, Routledge
5. Mambrol, Nasrullah. (2018) "Postcolonialism." Literary Theory and Criticism Notes, 22 Jan. 2018, [literariness.org/2016/04/06/postcolonialism/](http://literariness.org/2016/04/06/postcolonialism/).
6. Watson, Katherine. (2005) "Queer Theory". The Group-Analytic Society, Vol 38, no. 1, 2005, pp. 81-85. DOI:10.1177/0533316405049370
7. Duncan, Margaret Carlisle and Michael Messer. (1993) "Separating the Men from the Girls: The Gendered Language of Televised Sports.. Gender and Society 7 1, pp. 121-137
8. Michel Foucault, (1997) "What Is Enlightenment?" in Paul Rabinow, ed., Ethics: Subjectivity and Truth, The Essential Works of Foucault 1954-1984, Volume I, New Press,

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**DISCIPLINE SPECIFIC ELECTIVE**  
**DSE HP 3D1: Pattern Making for Fashion Design**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code                      | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course(if any)           |
|------------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------------------------|
|                                          |          | Lecture                           | Tutorial | Practical/ Practice |                      |                                               |
| <b>Pattern Making for Fashion Design</b> | <b>4</b> | <b>2</b>                          | <b>0</b> | <b>2</b>            | <b>XII Pass</b>      | <b>Pass in DSC HP 102</b><br>Fashion Concepts |

**Learning Objectives**

1. To impart knowledge regarding the basics of apparel design.
2. To make students understand various terminologies used in relation to garment components and their application in designing garments.
3. To develop a level of proficiency in making patterns for simple garments.
4. To be able to independently lay patterns, cut fabric and sew a garment.
5. To teach the students the fundamentals of fit and enable them to design for different figure types.

**Learning outcomes**

The students would be able to:

1. Develop basic knowledge of apparel design and describe its terminology.
2. Apply the knowledge of fabrics and fabric terminology to follow preparatory steps before garment cutting
3. Use and apply the concept and techniques of pattern making, laying out and cutting
4. Judicious application of knowledge for producing quality in patterns, and processes in garment assembly
5. Use and apply the concept and techniques of various seams and edge finishes

**SYLLABUS OF DSE HP 3D1**

**THEORY**  
**(Credits 2; Hours 30)**

**UNIT I: Introduction to pattern making**

**8 Hours**

This unit will delve into the concept, significance and techniques of body measurements, basic block and patterns.

Subtopics:

- Measurement on body and dress form: importance, precautions, landmarks and procedure of taking measurement
- Importance of patterns and pattern information
- Methods of pattern making
- Rules of pattern making
- Shaping methods, dart and dart equivalents

## **UNIT II: Preparatory steps for garment construction**

**6 Hours**

This unit provides an insight into the concepts and processes of fabric selection, terms, preparatory steps, fabric layouts, pinning, marking and cutting.

Subtopics:

- Fabric types: weights and widths, fabric terms
- Preparatory steps- preshrinking, straightening and truing
- Layouts for patterns- general guidelines, basic layouts- lengthwise, partial lengthwise, crosswise, double fold, open, combination fold
- Layouts for special fabrics- Unidirectional, bold and large prints, plaids, stripes and checks
- Pinning, marking and cutting

## **UNIT III: Seams and finishing of raw edges**

**6 Hours**

This unit offers information on sewing machines, appropriate stitching guidelines, seams and various additional techniques required for finishing seams and garment edges.

Subtopics:

- Sewing machine and components of sewing machine, basic operations (upper and lower threading, needle insertion, bobbin winding)
- Relationship between needle, thread, stitch length and fabric weight
- Seam defects and remedies
- Seam classification - super imposed seam, enclosed seam, lapped seam, bound seam, flat seam and decorative seam

## **UNIT IV: Design & Fit**

**10 Hours**

This unit will acquaint students with different types of garment components and fundamental of fitting.

**(5 weeks)**

Subtopics:

- Designing for different figure types- Triangular, Inverted triangular, Hourglass, Rectangular
- Garment Components:
  - Bodices and yokes
  - Necklines
  - Collars
  - Sleeves and cuffs
  - Plackets and fasteners
  - Pockets
- Factors affecting fit
- Evaluating fit for a basic garment and its components

## **PRACTICAL**

### **(Credits 2; Hours 60)**

#### **1. Designing garments for self**

This unit will provide hands-on skill for making basic slopers and its adaptation to create style variations.

- Development of bodice, Sleeve and skirt for self
- Develop style variations in sleeves and collars for self
- Adaptation of standard skirt block (A-line, Flared, pleated, gathered)
- Adaptation of standard women's bodice block using dart manipulation (single and double dart and dart-tuck)
- 

#### **2. Sewing techniques**

This unit will train the students in operating a sewing machine efficiently and perform basic sewing processes required for garment assembly. As a result, student will be able to stitch a simple garment for self.

- Introduction to sewing machine and basic sewing exercises
- Development and identification of seams with emphasis on Additional techniques for straight, curved and cornered seams: clipping, notching, grading, seam balancing, trimming, under stitching, stay stitching, trimming a corner, handling unequal seams (easing)
- Plackets and fasteners
- Edge finishing (binding, facing)
- Handling Fullness- dart, dart-tuck, gathers, pleats
- Construction of skirt for self
- Construction of skirt top/ kurta for self

#### **Essential readings**

1. Armstrong, H.J., (2009), *Pattern Making for Fashion Design*, Harper Collins Publishers Inc., New York.
2. Liechty, E.G., Potterberg, D.N., Rasband, J.A., (2010), *Fitting and Pattern Alteration: A Multimethod Approach*, Fairchild Publications, New York.
3. Stamper, A.A., S. H. Sharp and L.B. Donnell, (1986), *Evaluating Apparel Quality*, Fairchild Publications,
4. Brown, Patty and Rice Janett (1998) *Ready to Wear Apparel Analysis* (2nd Edition), Prentice Hall.

#### **Suggested readings**

1. Jennifer Lynne & Matthews-Fairbanks, (2018), *Pattern Design: Fundamentals*, Fairbanks Publishing LLC.
2. Reader's Digest (Eds.). (2002), *New Complete Guide to Sewing*, Reader's Digest Association (Canada) Ltd. Montreal.

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**DISCIPLINE SPECIFIC ELECTIVE**  
**DSE HP 3E1: Basics of Design Application**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code          | Credits | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course(if any) |
|------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-------------------------------------|
|                              |         | Lecture                           | Tutorial | Practical/ Practice |                      |                                     |
| Basics of Design Application | 4       | 2                                 | 0        | 2                   | XII Pass             | NIL                                 |

**Learning Objectives**

1. To comprehend the concept of design as applicable to interior spaces.
2. To develop proficiency in making working and presentation drawings to be used by interior space design professional.
3. To understand the application of materials and finishing for creating an aesthetic and sustainable interior

**Learning Outcomes**

The students would be able to:

1. Students will be able to comprehend the concept of design applicable to interior spaces.
2. Students will gain proficiency in preparing presentation drawings to be used in design profession.
3. Students will understand the application of materials and finishes for designing interior spaces

**SYLLABUS OF DSE HP 3E1**

**THEORY**  
**(Credits 2; Hours 30)**

**UNIT I: Design Fundamentals**

**6 Hours**

This unit will develop understanding regarding basics of design.

Subtopics:

- Objectives of design
- Types of design: structural & decorative
- Elements of design
- Principles of design

**UNIT II: Design Application in Interiors**

**8 Hours**

This unit will acquaint students with the concept & application of color, lighting & furnishes in interior spaces.

Subtopics:

- Color in design
- Lighting for interiors
- Surface finishes – wall, floor, ceilings (types and usage)

### **UNIT III: Furniture & Furnishings**

**8 Hours**

This unit will help students learn about furniture, furnishings and accessories in interiors.

Subtopics:

- Furniture – styles, types, construction, selection and purchase, arrangement, care and maintenance
- Furnishings – types & selection
- Accessories

### **UNIT IV: Contemporary trends**

**8 Hours**

This unit will acquaint students with the contemporary trends in interiors.

Subtopics:

- Recent trends in design: Bio-Mimicry, Bio-philic
- Sustainable design & materials

## **PRACTICAL (Credits 2; Hours 60)**

### **1. Introduction to drawing interiors:**

- Basic drawing techniques
- Concept of scale
- Lettering

### **2. Presentation drawings:**

- Drawing & identification of common symbols
- Drawing 1 BHK floor plans & elevations

### **3. Rendering:**

- Rendering Techniques
- Application of rendering in plans

### **Essential readings:**

1. Chris Grimley, Universal principles of Interior Design , (2022), Rockport publishers .
2. Frida Ramstedt ,(2020) Interior Design Handbook , Random House publishers
3. S. Goel, P. Seetharaman , A. Kakkar, Manual on Interior space designing (2015) (ISBN No: 81-88901-44-X), Elite publishers, Delhi
4. M. Pratap Rao (2000), Interior Design Principles and Practice, Standard Publishers Distribution, Delhi.
5. S.K Duggal, (2017) , Building Materials, CRC Press, Delhi.
6. Joseph De Chiara, J. Panero, M. Zelnik (2001), Time Saver Standards for Interior Design and Space Planning , second edition McGraw Hill.
7. Premavathy, Seetharam. & Pannu, Parveen (2005). Interior Design and Decoration. CBS Publishers & Distributors, New Delhi

### **Suggested readings:**

1. CPWD, Manual on Door and Window Details for Residential Building
2. CPWD, Manual on Accessible Built Environment Faulkner, S. and Faulkner, R., Inside Today's Home, Rinehart Publishing company, New York.

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## COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

**Note:** Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

### GENERIC ELECTIVE (GE HS 003) : CHALLENGES IN CONTEMPORARY CHILDHOOD

#### Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code                  | Credits | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
|                                      |         | Lecture                           | Tutorial | Practical/ Practice |                      |                             |
| Challenges in Contemporary Childhood | 4       | 3                                 | 0        | 1                   | XII Pass             | NIL                         |

#### Learning Objectives

1. To understand the social construction of childhood
2. To understand depiction of childhood experiences in India
3. To know and learn about diverse contexts of childhood
4. To appreciate contemporary themes and challenges of Indian childhood

#### Learning Outcomes

The students will be able to:

1. Learn the concepts related to multiple childhood
2. Study children's experiences of ethnicity, class, caste, religion and gender
3. Learn about children in difficult circumstances
4. Get sensitized to appreciate diverse contexts of children

#### SYLLABUS OF GE HS 003

#### THEORY (Credits 3; Periods 45)

##### UNIT I: Influences on Indian Childhood

**12 Hours**

Unit Description: This unit presents an overview by revisiting central themes and concerns related to childhood in India

Subtopics:

- Sociology of childhood
- Disadvantaged childhood
- Caste and childhood
- Gender and children

## **UNIT II: Multiple contexts of Childhood**

**12 Hours**

Unit Description: This unit will focus on understanding children in multiple settings and contexts

Subtopics:

- Childhood in urban, semi-urban, rural and tribal context
- Socialization and growing in diverse families
- Children in foster and institutional settings
- School as a context of development - Educational inequity and learning diversity

## **UNIT III: Children in Difficult Circumstances**

**12 Hours**

Unit Description: This unit will help us to develop understanding of children in difficult circumstances and the challenges

Subtopics:

- Street and Working children
- Trafficked children and children of sex workers
- Children of migrant and refugee families
- Children in conflict with law and children in contact with law
- Children in war and other disaster situations

## **UNIT IV: Contemporary Challenges and Childhood**

**9 Hours**

Unit Description: This unit will focus on the various challenges faced by children in different contexts.

Subtopics:

- Childhood in digital era/cyberbullying/child pornography/violence in schools like bullying
- Gender concerns and safety, Body boundaries and consent
- Supporting childhood in India

### **PRACTICAL (Credit 1; Periods 30)**

- Exploring and analysis of diverse childhood context and challenges through audio-visual materials/social media/print media.
- Interview Street children/working children/ children with disabilities to understand their circumstances
- Profile organisations working for children in difficult circumstances
- Conduct workshop/webinars to understand the various vulnerabilities related to Indian children like cyberbullying, Body boundaries, inclusion & diversity

### **Essential readings**

1. Chopra, G. (2016). Child rights in India: challenges and social action. S.l.: Springer, India, private.
2. Sachdeva ,P.,Murmu,D.F. & Sakshi.(2020).Basic Sociology. Delhi . Elite Publishing
3. Saraswathi, T.S. (Ed.) (1999). Culture, Socialization and Human Development: Theory, Research and Applications in India. Sage Publications Chapter 4: Theoretical Frameworks in Cross-cultural Psychology, Chapter 6: Individualism in a Collective Culture: A Case of Co-existence of Opposites
4. Vasanta, D. (2004). Childhood, Work and Schooling: Some Reflections. Contemporary

**Suggested readings**

1. Balmès, T. (Director), & Chabat, A., Billot, A., & Rouxel, C. (Producers). (2010). *Babies* [Motion picture on DVD]. Universal Studios Home Entertainment.
2. Nissani, M. (1997). Ten cheers for interdisciplinarity: The case for interdisciplinary knowledge and research. *Social Science Journal*, 34(2), 201.
3. Mukunda, K. V. (2009). What Did You Ask in School Today? A Handbook on Child Learning. Noida: Harper Collins. Chapter 4: Child Development, 79-96
4. Sandra, L. Bem (1987). Gender Schema Theory and its Implications for Child Development: raising gender schematic children in a gender schematic society, in M.R. Walsh, (ed). *The Psychology of Women* Harvard University Press Cambridge, 206-226

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## GENERIC ELECTIVE (GE HS 007) : CURRENT CONCERNS IN PUBLIC HEALTH NUTRITION

### Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code                         | Credits | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
|                                             |         | Lecture                           | Tutorial | Practical/ Practice |                      |                             |
| Current Concerns in Public Health Nutrition | 4       | 3                                 | 0        | 1                   | XII Pass             | NIL                         |

### Learning Objectives

1. To understand the multi-faceted nature of nutritional problems and the various interventions that can be adopted at community level for improving the nutritional status.
2. To learn about the policy and intervention programmes operating in India to overcome malnutrition.
3. To understand the concept and determinants of food and nutrition security.

### Learning Outcomes

The student will be able to:

1. Understand the multi-faceted nature of nutritional problems.
2. Aware of the various interventions that can be adopted at community level for improving the nutritional status.
3. Familiar with the policy and intervention programmes operating in India to overcome malnutrition.
4. Understand the concept and determinants of food and nutrition security

### SYLLABUS OF GE HS 007

#### THEORY (Credits 3; Periods 45)

#### UNIT I: Nutritional Problems Affecting the Community

**12 Hours**

Unit Description: Students will be explained about the existing nutritional problems in the community in the present scenario.

Subtopics:

Etiology, prevalence, clinical features and preventive strategies for-

- Undernutrition - Protein energy malnutrition, Moderate Acute Malnutrition, Severe Acute

- Malnutrition, Nutritional Anaemias, Vitamin A Deficiency, Iodine Deficiency Disorders
- Obesity, Metabolic Syndrome
- Coronary heart disease, Diabetes
- Fluorosis

## **UNIT II: Strategies for Improving Nutrition and Health Status of the Community 9 Hours**

Unit Description: Students will be taught about the different approaches and strategies that could help alleviate the nutrition and health status of the community.

Subtopics:

- Appropriate interventions involving different sectors such as Food, Health, and Education – diet diversification, food fortification, supplementation, genetic modification, improved water and sanitation, immunization, promotion of optimal infant and young child feeding practices, growth monitoring and promotion (GMP), diarrhoea management and prevention

## **UNIT III: Nutrition Policy and Programmes 12 Hours**

Unit Description: Students will be introduced to all the major ongoing national level interventions and strategies and goals to combat malnutrition in the nation.

Subtopics:

- Sustainable Development Goals – Introduction, and relevance to nutritional problems in India
- National Nutrition Policy
- Ongoing nutrition programmes – Integrated Child Development Services (ICDS) Scheme, Mid-day Meal Programme (MDMP), National programmes for prevention of Anaemia, Vitamin A deficiency, Iodine Deficiency Disorders, National Programme for Prevention and Control of Cancers, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS), POSHAN Abhiyaan

## **UNIT IV: Food and Nutrition Security 12 Hours**

Unit Description: Students will be taught the concept of food and nutrition security and the associated national level intervention and programs. Subtopics:

- Concept, components, determinants
- Overview of the ongoing public sector programmes for improving food and nutrition security

### **PRACTICAL (Credit 1; Periods 30)**

Planning of low cost nutritious recipes for preschoolers, school age children, adolescents, pregnant and nursing women.

- Planning of nutritious recipes for an obese and an underweight adult.
- Visit to on-going nutrition programmes.

### **Essential readings:**

1. Bamji, MS, Krishnaswamy, K. & Brahmam, G N(Eds.). (2017). Textbook of Human Nutrition (4th ed.). New Delhi, India: Oxford and IBH Publishing Co. Pvt. Ltd.
2. Longvah, T, Ananthan, R, Bhaskarachary, K & Venkaiah, K (2017). Indian Food Composition Tables. National Institute of Nutrition, ICMR, Hyderabad.
3. Park, K (2017). Park's Textbook of Preventive and Social Medicine (24th ed.). Jabalpur, India: Banarasidas Bhanot Publishers.
4. Vir, S (2011). Public Health Nutrition in Developing Countries (Vol 1 & 2). New Delhi,

**Suggested readings:**

1. Gibney, M J, Margetts, B M, Kearney, J M & Arab, L (Eds.). (2005). Public Health Nutrition. Oxford, UK: Blackwell Science.
2. ICMR (2011) Dietary Guidelines for Indians – A Manual. National Institute of Nutrition, Indian Council of Medical Research, Hyderabad.
3. Kishore, J (2016). National Health Programs of India (12th ed.). New Delhi, India: Century Publications.
4. Chadha, R and Mathur, P (eds.) (2015). Nutrition A Lifecycle Approach. New Delhi, India: Orient Blackswan Pvt. Ltd.
5. Ministry of Women and Child Development (MWCD), Government of India. (2019). POSHAN Abhiyaan [online]. Available at: <https://icds-wcd.nic.in/nnm/home.htm> (Accessed: July 12, 2019).
6. Relevant and ongoing public sector programmes for food and nutrition security from Government of India websites (including Ministry of Agriculture and Farmers Welfare, Ministry of Consumer Affairs, Food and Public Distribution, Ministry of Human Resource Development, and other ministries working for food and nutrition security).

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

## GENERIC ELECTIVE (GE HS 010) : PARTICIPATORY DEVELOPMENT AND COMMUNICATION

### Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code                                | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre- requisite of the course |
|----------------------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|------------------------------|
|                                                    |          | Lecture                           | Tutorial | Practical/ Practice |                      |                              |
| <b>Participatory Development and Communication</b> | <b>4</b> | <b>3</b>                          | <b>0</b> | <b>1</b>            | <b>XII Pass</b>      | <b>NIL</b>                   |

### Learning Objectives

1. To understand the concept of participation, Participatory Development and Participatory Communication.
2. To appreciate the role of facilitation for meaningful participation.
3. To develop an understanding of the interplay between the indigenous practices and theoretical concepts of participation.
4. To critically reflect on the role of civil society organizations in promoting participatory approach across sectors and levels of development.
5. To critically examine the use of participatory approach and tools across sectors and regions and relevance to the Indian context.

### Learning Outcomes

1. The student will be able to understand the notion of participation and the dimensions of Participatory Communication
2. The student will be able to apply the principles and approaches of Participatory Communication in community research
3. The student will be able to appreciate and use the different tools and methods of Participatory Learning & Appraisal.
4. The student will be able to reflect on the role of civil society organizations in promoting participatory approach across sectors and levels of development
5. The student will be able to explore the nuances of designing and applying Participatory Media.

### SYLLABUS OF GE HS 010

#### THEORY (Credits 3; Periods 45)

#### UNIT I: Understanding Participatory Approach

**12 Hours**

Unit Description: Unit I delves into the core concept and nature of Participation and its relation with development. It highlights the principles and levels of participation. The Unit also asserts the importance and channels of Participatory Communication and how effective facilitation is and essential for participation of marginalized groups.

Subtopics:

- Concepts of Participation and Participatory Development
- Participation, Power, Voice and Marginalization
- History & Theoretical perspectives on Participatory Development
- Principles & Levels of Participation
- Process of Participation: Dialogue, Reflection & Consensus
- Reflective Practice, Empowerment & Social Change
- Civil Society Organizations & Participatory Development

## **UNIT II: Participatory Approach & Methods**

**9 Hours**

Unit Description: Unit II explores the concept, principles, advantages of Participatory Learning & Appraisal with its plethora of tools and their applications.

Subtopics:

- Participatory Learning & Appraisal: Principles and practices
- Scope and Application of PLA Tools
- Classification of PLA Tools: Relationship, Space & Time Related PLA
- Innovative PLA Tools
- Participatory Research methodology: approach and praxis

## **UNIT III: Participatory Learning & Action**

**12 Hours**

Unit Description: This Unit discusses the application of the Participatory Approach in different contexts such as local governance, NGOs and CSOs, M&E .

Subtopics:

- Participatory Approaches & Local Governance
- People's Participation in community development and Development Programs
- Participatory approaches in management of Disasters & Pandemics
- Role of Traditional & Indigenous knowledge in Participatory Approaches

## **UNIT IV: Participatory Media**

**12 Hours**

Unit Description: The last Unit touches upon the concept, significance, functions and elements of the various Participatory Media.

Subtopics:

- Participatory Communication, Right to Communicate, development & empowerment
- Community Media concept, significance, functions and elements
- Growth, types, characteristics, policy & programing:
  - Community Radio
  - Participatory Video
  - Participatory Print media
  - Participatory New Media

Alternative Theater and the performing arts

## **PRACTICAL (Credit 1; Periods 30)**

- Analysis of case studies in Participatory Development
- Situation Analysis using PLA techniques

- Time Related PLA: Daily Activity Chart
- Space Related PLA: Social Mapping, Resource Map, Transect Walk, Facility Assessment
- Relationship Related PLA: Venn Diagram, Spider Web Diagram
- Ranking Methods: Seed Ranking
- Qualitative PLA Research Tools: Interview, Focused Group Discussion, Case Study
- Participatory Media Analysis & Production

#### **Essential readings:**

1. Mikkelsen, Britha, (2002). *Methods for Development Work and Research*. New Delhi: Sage Publications.
2. Robert Chambers. "What Works and Why?" and "Poor Peoples' Reality" in *Whose Reality Counts? Putting the First Last* (Intermediate Technology Publications, London, 1997): pp. 130-187.
3. Bhatnagar. O.P & Dahama, O.P. (2009). *Education and Communication for Development* 2ed. New Delhi: Oxford & IBH Publishing Co. Pvt Ltd. ISBN-13: 978-8120400306.
4. Kumar, S (2002). *Methods for Community Participation: A Complete Guide for Practitioners*. New Delhi: Vistaar Publications.

#### **Suggested readings:**

1. Ferguson (1994), *The Anti-Political Machine: Development, Depoliticization, and Bureaucratic*. Cambridge University Press pp. 1-167.
2. Ilan Kapoor (2002) "The devil's in the theory: a critical assessment of Robert Chambers' work on participatory development" *Third World Quarterly*. Vol. 23, No. 1, p. 101-117. Cornwall A (2003). *Whose Voices? Whose Choices? Reflections on Gender and Participatory Development* *World Development*. Vol. 31, No. 8, pp. 1325–1342.
3. McIntyre (2008) *Participatory Action Research* Sage University Papers pp.1-60.
4. Dale R, (2004). *Evaluating Development Programmes and Projects*. New Delhi: Sage Publications.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

## GENERIC ELECTIVE (GE HS 017) : FASHION ACCESSORIES

### Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code        | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|----------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
|                            |          | Lecture                           | Tutorial | Practical/ Practice |                      |                             |                                |
| <b>Fashion Accessories</b> | <b>4</b> | <b>3</b>                          | <b>0</b> | <b>1</b>            | <b>XII Pass</b>      | <b>NIL</b>                  | <b>Home Science</b>            |

### Learning Objectives

1. To impart knowledge of fashion accessories
2. To familiarize the students with leading accessory designers
3. To provide knowledge of the basics of common accessories viz., handbag, footwear and hats
4. To help students in understanding design methodology, materials, production process and market dynamics of fashion accessories

### Learning Outcomes

The student will be able to

1. Recognize the role and importance of fashion accessories in the apparel industry
2. Describe the various categories, history, styles and production methods of fashion accessories
3. Restyle and coordinate accessories with apparel using creative ideas
4. Understand forecast, trends, and process of accessory designing
5. Develop skills in range planning and creating fashion accessory

### SYLLABUS OF GE HS 017

#### THEORY (Credits 3; Periods 45)

#### UNIT I: Overview of Fashion Accessories

**12 Hours**

This unit traces the history and importance of fashion accessories. It discusses the fashion cycle, role of an accessory designer and leading accessory brands and designers around the world.

Subtopics:

- History of accessories from ancient times to present
- Importance of fashion accessories in apparel industry
- Fashion cycle of fashion accessories
- Role of an accessory designer

- Leading accessory brands and designers

## **UNIT II: Categories, Styles and Production Methods of Selected Fashion Accessories**

**12 Hours**

The unit brings forth the categories, styles and production methods of fashion accessories. It also helps to understand the coordination of fashion accessories with apparel.

Subtopics:

- Brief history, components, styles, materials and production methods of accessories: Handbags, Footwear, Hats, Belts, Ties, Scarves, etc.
- Coordinating accessories with apparel

## **UNIT III: Concept to Creation: Overview of Fashion Accessories Industry**

**9 Hours**

This unit provides an insight into marketing and promotional aspects of fashion accessories.

Subtopics:

- Inspiration and research for design development
- Trend analysis and forecasting process
- Spec-sheets and Tech Packs
- Sourcing of material
- Costing
- Developing a range
- Care and maintenance

## **UNIT IV: Marketing and Promotion**

**12 Hours**

Ways to increase the life of garments to reduce waste generation.

Subtopics:

- Marketing of fashion accessories
- Window concepts and displays
- Promotional practices

### **PRACTICAL (Credit 1; Periods 30)**

- Study of materials for fashion accessories
- Sketching of fashion accessories – Handbags and Footwear
- Sketching and rendering of life-size handbag and footwear (One each)
- Reporting of national and international accessory brand/ designer (One each)
- Theme based accessory designing - Mood boards, designing and construction (Any one product)
- Restyling project – Restyle plain accessories using any surface ornamentation technique

### **Essential readings:**

1. Genova Aneta 2011, Accessory Design, Fairchild Publications; 1 edition
2. Know Your Fashion Accessories, Celia Stall- Meadows, Fairchild Books; Student ed. Edition (25 August 2003), ISBN-13: 978-1563672453
3. Lau John 2012, Basics Fashion Design 09: Designing Accessories: Exploring the design and construction of bags, shoes, hats and jewellery, A Publishing; 1 edition
4. Schaffer Jane, Saunders Sue 2012, Fashion Design Course: Accessories: Design Practice and Processes for Creating Hats, Bags, Shoes, and Other Fashion Accessories, Barron's Educational Series
5. Stephens Frings Gini, 2007, Fashion: From Concept to Consumer (9th Edition), Prentice Hall

### **Suggested readings:**

1. Abling Bina 2005, marker rendering for Fashion, Accessories, and Home Fashion, Bloomsbury Academic, Illustrated Edition, ISBN 1563673606, 9781563673603.

2. Gervail Olivier 2009, Fashion Accessories, A&C Black, Illustrated edition, ISBN 140811058X, 9781408110584.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

## GENERIC ELECTIVE (GE HS 019) : CORPORATE SOCIAL RESPONSIBILITY

### Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code             | Credits | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
|                                 |         | Lecture                           | Tutorial | Practical/ Practice |                      |                             |
| Corporate Social Responsibility | 4       | 3                                 | 0        | 1                   | XII Pass             | NIL                         |

### Learning Objectives

1. To understand the meaning, scope and importance of Corporate Social Responsibility (CSR)
2. To understand CSR projects with respect to SDGs
3. To understand the Indian legislations for CSR
4. To learn about the implementation and monitoring of CSR activities
5. To understand the need, process and tools of communicating CSR projects
6. To understand CSR reporting guidelines

### Learning Outcomes

The student will be able to:

1. Understand the meaning, scope and importance of Corporate Social Responsibility (CSR)
2. Assess the role of CSR projects with respect to SDGs
3. Understand Indian legislations for CSR
4. Understand implementation and monitoring of CSR projects through case studies
5. Develop material/tools for CSR communication
6. Understand and evaluate CSR reports as per standard reporting guidelines

## SYLLABUS OF GE HS 019

### THEORY (Credits 3; Periods 45)

#### UNIT I: Introduction to Corporate Social Responsibility (CSR)

9 Hours

Unit Description:

This Unit aims at orienting the students towards the concept and importance of Corporate Social Responsibility (CSR), triple bottom line, and ESG

Subtopics:

- Meaning, definition and importance
- History and evolution of CSR
- Sustainable businesses, triple bottom line, ESG (Environmental, Social and Governance)

## **UNIT II: International framework for Corporate Social Responsibility 12 Hours**

Unit Description:

This Unit aims to create an understanding on Indian legislations for CSR, UN guiding principles and SDGs.

Subtopics:

- Indian legislations for CSR; Companies Act, 2013 and Amendments
- UN guiding principles on business and human rights.
- SDGs and CSR

## **UNIT III: Design, implementation and Monitoring of CSR activities 12 Hours**

Unit Description:

This Unit aims to create an understanding towards design, implementation and monitoring of CSR activities, CSR funding and audit

Subtopics:

- CSR design, implementation and monitoring
- Role of Stakeholders in CSR
- Funding for CSR activities
- CSR Audit; issues related to CSR Audit
- Globalization and CSR

## **UNIT IV: CSR Communications 12 Hours**

Unit Description: This Unit aims to create an understanding towards the need, process and tools of CSR communication and CSR reporting guidelines Selection of materials

Subtopics:

- Need, process and tools of communicating CSR projects
- Brand building through CSR communications
- CSR Reporting Guidelines

## **PRACTICAL (Credit 1; Periods 30)**

### **I: Understanding CSR initiatives**

Activities:

- Need Assessment for CSR activities by corporates
- Case studies on CSR initiatives taken by corporates
- Case studies on Foundation/Trust/Section 8 Companies etc. implementing CSR initiatives

### **II: Planning CSR activities and Communications**

Activities:

- Planning innovative CSR Projects/Programmes in context of SDGs
- CSR communications: Presentations, Websites, Print Media, Social media etc.
- Evaluation of CSR reports

### **Essential readings:**

1. Garg, K. (2021). Corporate Social Responsibility (3<sup>rd</sup> edition). Bharat Law House Pvt. Ltd.
2. Institute of Directors India. (2020). A Handbook on Corporate Social Responsibility, A Condensed Guide for Corporate Directors & Senior Executive. Institute of Directors, New Delhi, India.

3. Antonaras, A., & Dekoulou, P. (2019). Cases on Corporate Social Responsibility and Contemporary Issues in Organizations (Advances in Business Strategy and Competitive Advantage) 1st Edition. IGI Global.
4. Paleri, P. (2019). Corporate Social Responsibility: Concept, Cases and Trends. Cengage Learning India Pvt. Ltd. ISBN-10: 9353501601, ISBN-13: 978-9353501600.
5. Lumde, N. (2018). Corporate Social Responsibility in India: A Practitioner's Perspective. Notion Press. ISBN-10: 1644295431, ISBN-13: 978-1644295434.

**Suggested readings:**

1. Mitra, N., & Schmidpeter, R. (2016). Corporate Social Responsibility in India: Cases and Development after the Legal Mandate. Springer International Publishing, Switzerland.
2. Reddy, V. R., & Dheeraja, C. (2016). The Six Essential Steps in Implementing CSR. Studera Press, New Delhi.
3. Chakrabarty, B. (2015). CSR in India. Routledge.
4. Agarwal, S. (2013). CSR in India. SAGE Publications.
5. Chatterji, M. (2011). Corporate Social Responsibility. Oxford University Press India; Reprint edition. ISBN-10: 0198069839 ,ISBN-13 : 978-0198069836.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

# BSc. (Hons.) Food Technology

## DISCIPLINE SPECIFIC CORE COURSE DSC FT07: Meat and Fish Processing Technology

### CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course title & code                 | Credits | Credit distribution of the course |          |                    | Eligibility criteria | Pre-requisite of the course (if any)                       |
|-------------------------------------|---------|-----------------------------------|----------|--------------------|----------------------|------------------------------------------------------------|
|                                     |         | Theory                            | Tutorial | Practical/Practice |                      |                                                            |
| Meat and Fish Processing Technology | 4       | 3                                 | 0        | 1                  | XII Pass             | DSC FT01, DSC FT02, DSC FT03, DSC FT04, DSC FT05, DSC FT06 |

### Learning Objectives

1. To comprehend the meat quality and slaughter processes for meat animals.
2. To understand the concept and methods of processing and preservation of animal foods and by-product utilization.
3. To acquire the knowledge of fish preservation and value-added fish products.

### Learning Outcomes

After completing this course, students will be able to:

1. Understand the need and importance of livestock industry.
2. Comprehend the structure, composition and nutritional quality of animal products.
3. Acquire the concept and methods of processing and preservation of animal foods.
4. Know the technology behind preparation of various animal food products and by-product utilization.
5. Apprehend the importance of fishery industry, the techniques that can be used for preservation of fish and manufacturing of various value-added fish products

### SYLLABUS OF DSC FT07

#### THEORY Credits 3 (45 Hrs.)

#### UNIT I: Introduction, meat quality, Slaughter process and By-products

Unit Description: The unit will provide information on the status and development of livestock industry, meat quality, ante-mortem and post-mortem examination, and by-products

*Subtopics:*

- Status of livestock industry in India, Development of meat industry in India and its need in nation's economy
- Effects of feed breed and stress on production of meat animals and their quality.
- Meat Quality-color, flavor, texture, Water-Holding Capacity (WHC), Emulsification capacity of meat.
- Layout of abattoir, Slaughter, Antemortem examination of meat animals, slaughter of buffalo, sheep/ goat.
- Post-mortem examination of meat, Grading, Post-mortem changes of meat.
- Importance of by-products utilization, classification and uses of by-products, Manufacture of Natural casings

## **UNIT II: Preservation of meat**

Unit Description: The unit will provide knowledge of different meat preservation techniques.

*Subtopics:*

- Refrigeration and freezing, thermal processing- canning of meat, retort pouch, dehydration, irradiation, meat curing, Sausages-processing, types and defects, Packaging of meat

## **UNIT III: Introduction, Chilling and Freezing of fish**

Unit Description: The unit will provide an understanding of the status of fishery industry in India. Fish chilling, storage, freezing will also be covered.

*Subtopics:*

- Status of fishery industry in India. Relationship between chilling and storage life, MAP, general aspects of freezing, freezing systems (air blast freezing, plate or contact freezing 36 spray or immersion freezing, freezing on board, onshore processing, changes in quality in chilled and frozen storage, thawing.

## **UNIT IV: Fish Curing, Smoking and Canning, By-products, fermented fish and concept of other seafoods**

Unit Description: The unit will provide an knowledge of the different fish products processing and preservation techniques.

*Subtopics:*

- Drying and salting of fish, water activity and shelf-life , salting process, salting methods (brining, pickling, kench curing, gaspe curing), types of salts, dried and
- Salted fish products- pindang, fishwood, dried shrimp. Preservation by smoking, smoke production , smoke components, quality, safety and nutritive value of
- Smoked fish, processing and equipment, pre-smoking processes, smoking process control. Traditional chimney kiln, modern mechanical fish smoking kiln, examples of smoked and dried products. Principles of canning, classification based on pH groupings, effect of heat processing on fish, storage of canned fish, pre-process operations, post process operations, cannery operations for specific canned products.(Tuna, Mackerel, Sardine).
- Surimi- Introduction, fish muscle proteins, the surimi process, traditional and modern surimi production lines, quality of surimi products, comparison of surimi and fish mince products.
- Fish protein concentrates (FPC), fish protein extracts (FPE), fish protein hydrolysis (FPH) Flowchart of Indigenous products- Fish sauce and Paste
- Crabs, lobsters, prawns, shrimps.

## **PRACTICAL 1 Credits (30 Hrs)**

- Estimation of moisture content of meat.

- Cut out analysis of canned meat/retort pouches (external parameters).
- Cut out analysis of canned meat/retort pouches (internal parameters).
- Analysis of frozen meat/meat emulsion product.
- Meat/fish product formulation (Ideation/development of product).
- Quality evaluation of fish/prawn.
- Subjective evaluation of Fresh Fish.
- Cut out analysis of canned fish (Sardine/Mackerel/Tuna) (external parameters).
- Cut out analysis of canned fish (Sardine/Mackerel/Tuna) (internal parameters).

#### **Essential Readings**

1. Lawrie, R. A. (2017). Lawrie's meat science. 8th ed. England: Woodhead Publishing Ltd.
2. Sen, D.P. (2005). Advances in Fish Processing Technology. Allied Publishers Pvt.Limited.
3. Hall, G.M. (1997). Fish Processing Technology. 2nd edition NY: VCH

#### **Suggested Readings**

1. Paul D. Warriss. (2010). Meat Science: An introductory text. 2nd Edition. CABI Publishers, Wallingford, UK (2010)
2. Borda D., Nicolau. A. I and Raspor P (2017). Trends in Fish Processing Technology (Contemporary Food Engineering). 1st edition CRC Press

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC CORE COURSE**  
**DSC FT08 : Nutrition Science**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE**

| Course title & code | Credits | Credit distribution of the course |          |                    | Eligibility criteria | Pre-requisite of the course                                |
|---------------------|---------|-----------------------------------|----------|--------------------|----------------------|------------------------------------------------------------|
|                     |         | Theory                            | Tutorial | Practical/Practice |                      |                                                            |
| Nutrition Science   | 4       | 3                                 | 0        | 1                  | XII Pass             | DSC FT01, DSC FT02, DSC FT03, DSC FT04, DSC FT05, DSC FT06 |

**Learning Objectives:**

1. To understand the relationship between food, nutrition and health.
2. To learn the digestion, absorption, functions and food sources of various nutrients.
3. To comprehend the concept of balanced diet.
4. To know the different methods of cooking and ways to prevent nutrient losses.
5. To plan and prepare nutritious dishes for various age groups.
6. To assess nutritional status of adults.

**Learning Outcomes:**

After completing this course, students will be able to:

1. Students will be able to interpret and apply nutrition concepts to evaluate and improve nutritional health of individuals and communities
2. Comprehend the role of digestion, absorption, functions and food sources of various nutrients.
3. Understand the concept of balanced diet and exchange system.
4. Describe different methods of cooking and ways to prevent nutrient losses.
5. Plan and prepare nutritious dishes for various age groups.
6. Assess nutritional status of adults.

**SYLLABUS OF DSC FT08**

**THEORY**  
**Credits 3 (45 Hrs.)**

**UNIT 1: Introduction to Food and Nutrition**

**6 hrs**

**Unit Description:** This unit will introduce the basic knowledge of food and nutrition, its functions. It will also help in understanding the inter-relationship between food, nutrition and health.

*Subtopics:*

- Basic terms used in study of food and nutrition
- Methods of assessment of nutritional status
- Functions of food-physiological, psychological and social
- Understanding relationship between food, nutrition and health

## **UNIT II: Nutrients**

**20 hrs**

**Unit Description:** This unit will provide an understanding on functions, dietary sources and clinical manifestations of deficiency/excess of the following nutrients

*Subtopics:*

- Classification, digestion, absorption, functions, dietary sources, RDA, clinical manifestations of deficiency and excess of the following in brief:
- Energy
- Carbohydrates, lipids and proteins
- Fat soluble vitamins-A, D, E and K
- Water soluble vitamins – thiamine, riboflavin, niacin, folate, vitamin B12 and vitamin C
- Minerals – calcium, iron, iodine, fluorine, sodium, potassium, and zinc

## **Unit III: Planning Balanced Meals and Selection of Healthy Foods**

**6 hrs**

**Unit Description:** This unit will help in understanding the concepts of food groups and balanced diet.

*Subtopics:*

- Food Groups
- Concept of Balanced Diets
- Understanding Nutrition labelling of foods

## **UNIT IV: Methods of Cooking and Nutrient Retention**

**13 hrs**

**Unit Description:** This unit will help in developing know-how of different methods of cooking and ways to prevent nutrient losses

*Subtopics:*

- Dry, moist, frying and microwave cooking - Advantages, disadvantages
- Effect of various methods of cooking on foods and nutrients.
- Preventing nutrient losses

## **PRACTICAL 1 Credits (30 Hrs)**

- Assessment of nutritional status using BMI and waist circumference.
- Identification of food sources for various nutrients using food composition tables.
- Introduction to meal planning, concept of food exchange system.
- Planning and preparation of nutritious snacks for adults using different methods of cooking.
- Planning and preparation of nutritious snacks for pregnant women.
- Planning and preparation of nutritious snacks for lactating women
- Planning and preparation of nutritious snacks for pre-schoolers.

- Planning and preparation of nutritious snacks for adolescents.
- Critical analysis of nutritional labelling of food products.

### **Essential Readings**

1. Byrd-Bredbenner, C., Moe, G., Beshgetoor, D. & Berning, J. (2022). *Wardlaw's Perspectives in Nutrition*, International Edition, 12th edition, New York: McGraw- Hill 29
2. Chadha, R. and Mathur, P. eds. (2015). *Nutrition: A Lifecycle Approach*. Hyderabad: Orient Blackswan.
3. Longvah, T., Ananthan, R., Bhaskarachary, K. and Venkaiah, K. (2017). *Indian Food Composition Tables*. Hyderabad: National Institute of Nutrition, Indian Council of Medical Research, Department of Health Research, Ministry of Health and Family Welfare, Government of India.
4. Seth, V., Singh, K. & Mathur, P. (2018). *Diet Planning Through the Lifecycle Part I: Normal Nutrition- A Practical Manual*. 6th Edition. Delhi: Elite Publishing House.

### **Suggested Readings**

1. Manay NS and Shadaksharaswamy M (2008). *Food-Facts and Principles*, Third Edition. New Age International (P) Ltd. Publishers, New Delhi.
2. Srilakshmi, B. (2021). *Nutrition Science*. 7<sup>th</sup> edition. New Age International.
3. Rekhi T and Yadav H (2014). *Fundamentals of Food and Nutrition*. New Delhi: Elite Publishing House Pvt Ltd.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC CORE COURSE**  
**DSC FT09: Cereals, Pulses & Oilseed Processing Technology**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE**

| Course title & code                                        | Credits  | Credit distribution of the course |          |                    | Eligibility criteria | Pre-requisite of the course (if any)                              |
|------------------------------------------------------------|----------|-----------------------------------|----------|--------------------|----------------------|-------------------------------------------------------------------|
|                                                            |          | Theory                            | Tutorial | Practical/Practice |                      |                                                                   |
| <b>Cereals, Pulses &amp; Oilseed Processing Technology</b> | <b>4</b> | <b>3</b>                          | <b>0</b> | <b>1</b>           | <b>XII Pass</b>      | <b>DSC FT01, DSC FT02, DSC FT03, DSC FT04, DSC FT05, DSC FT06</b> |

**Learning Objectives**

1. To impart knowledge of different methods of Cereal, Pulse & Oilseed processing.
2. To learn about processing of various products & by-products.

**Learning Outcomes**

After completing this course, students will be able to:

1. Understand the concept of quality (composition & types) of Cereals, Pulses & oilseeds for developing good quality end products.
2. Comprehend the processing and preservation of Cereals, Pulses & Oilseeds using various techniques.
3. Comprehend the processing of by-products.

**SYLLABUS OF DSC FT09**

**THEORY**  
**(Credits 3; Hours 45)**

**UNIT I: Introduction of Cereals**

*Subtopics:*

Cereal Processing Technology

Introduction & chemical composition of cereals

- Wheat—Types, milling, flour grade, flour treatments (bleaching, maturing), flour for various purposes
- Rice: Types, Physicochemical properties, milling (mechanical & solvent extraction), parboiling, ageing of rice, utilization of by- products
- Corn: Milling (wet & dry), cornflakes, corn flakes, corn flour
- Barley: Milling (pearl barley, barley flakes)
- Oats: Milling (oatmeal, oatflour & oatflakes), By-products of oat processing
- Rye & Triticale: Milling (flour), uses

## **UNIT II: : Processing of Coarse Grains**

### *Subtopics:*

- Sorghum and Millets (Traditional & commercial milling)

## **UNIT III: Pulse Processing Technology**

### *Subtopics:*

- Introduction to pulses
- Milling of pulses
- Dry milling
- Wet milling
- Improved milling method

## **UNIT IV: Oilseed Processing Technology**

Unit Description: The unit will provide an knowledge of the different fish products processing and preservation techniques.

### *Subtopics:*

- Introduction
- Extraction of oil (Mechanical & Solvent Extraction Milling)
- Refining of oil
- Sources of protein (defatted flour, protein concentrates and isolates, properties and uses)
- Protein texturization, fibre spinning

### **PRACTICAL 1 Credits (30 Hrs)**

- Physical characteristics of Wheat.
- Estimation of Gluten Content of flour.
- Estimation of Pelenske Value of flour.
- Fermenting power of yeast.
- Physical Characteristics of Rice and paddy.
- Cooking characteristics of rice.
- Determination of sedimentation power of flour
- Preparation of Dairy Analogue (Soymilk from Soybeans)

### **Essential readings:**

1. Kent, N.L. 2003. Technology of Cereal, 5th Ed. Pergamon Press.
2. Chakraverty. 1988. Post Harvest Technology of Cereals, Pulses and Oilseeds, revised Ed., Oxford & IBH Publishing Co. Pvt Ltd.

### **Recommended readings:**

1. Marshall, Rice Science and Technology. 1994. Wadsworth Ed., Marcel Dekker, New York.
2. Manay, S. and Sharaswamy, M. 1987. Food Facts and Principles. Wiley Eastern Limited.

**Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

**DISCIPLINE SPECIFIC ELECTIVE**  
**DSE FT01: Novel Food Processing Technologies**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE**

| Course title & code                       | Credits  | Credit distribution of the course |          |                    | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------------|----------|-----------------------------------|----------|--------------------|----------------------|--------------------------------------|
|                                           |          | Theory                            | Tutorial | Practical/Practice |                      |                                      |
| <b>Novel Food Processing Technologies</b> | <b>4</b> | <b>2</b>                          | <b>0</b> | <b>2</b>           | <b>XII Pass</b>      | <b>NIL</b>                           |

**Learning Objectives**

1. To enable students to learn the basics of novel processing techniques.
2. To impart knowledge about the mechanism of microbial inactivation by various processing techniques.
3. To acquire knowledge about the effects of various novel processing techniques on food quality.

**Learning Outcomes**

After completing this course, students will be able to:

1. Understand the principles and mechanism of microbial inactivation by various techniques in order to preserve food and provide safe food for consumption.
2. Comprehend the effects of various novel processing techniques on the food quality.

**SYLLABUS OF DSE FT01**

**THEORY**

**Credits 2 (30 Hrs.)**

**Unit I: High pressure processing and Hurdle technology**

**(10 hrs)**

Unit Description: The unit will provide an understanding of the High-pressure processing used in food industries. The unit will deal with its principle and effects on food quality. The unit will also provide knowledge of the hurdle technology and its use in food preservation.

*Subtopics:*

- **High Pressure Processing:** Definition, principles of high-pressure processing and effects of high pressure on food quality.
- **Hurdle Technology:** Concept and effect on preservation of food.

**UNIT II: Pulsed electric fields processing**

**(8 hrs)**

Unit Description: The unit will introduce fundamentals of pulsed electric field processing. It also deals with concept of e-beam.

*Subtopics:*

- **Pulsed electric fields processing:** Definition, PEF treatment systems, main processing parameters, mechanisms of microbial inactivation.
- **Concept of E-beam**

### **UNIT III: Ultrasound and radiofrequency processing**

**(6 hrs)**

Unit Description: The unit will help in understanding the use of ultrasound and radiofrequency processing in food industry.

*Subtopics:*

- Ultrasound as a food preservation and processing aid, effects of ultrasound on food properties
- Radio-frequency processing.

### **UNIT IV:**

**(6 hrs)**

Unit Description: The unit will provide and insight to various other novel processing techniques such as microwave heating, dielectric heating, ohmic heating, irradiation that aids in food preservation.

*Subtopics:*

- Microwave heating
- Dielectric heating
- Ohmic heating
- Irradiation
- UV-C radiation
- Ozone
- Plasma technology

### **PRACTICAL (2 Credits, 60 Hrs)**

- Market survey of novel processed foods available
- Concept of hurdle technology
- Blanching using UV light
- Ultrasonication
- Setting up of Ohmic heater
- Applications of Microwave processing
- Layout of irradiation unit
- Ohmic heating process calculations
- Quality analysis of novel processed foods vs conventionally processed foods

#### **Essential readings:**

1. P J Fellows (2009). Food Processing Technology: Principles and Practice. Third edition. Wood Head Publishing in Food Science, Technology and Nutrition.
2. Howard Q. Zhang, Gustavo V. Barbosa-Cánovas, V. M. Bala Balasubramaniam, C. Patrick Dunne, Daniel F. Farkas, James T. C. Yuan (2011). Nonthermal Processing Technologies for Food. Wiley-Blackwell.
3. Ortega-Rivas, Enrique (2012). Non-thermal Food Engineering Operations. Springer.
4. Chauhan, O. P. (Ed.). (2019). *Non-thermal processing of foods*. CRC Press.
5. Potter NN and Hotchkiss H J (1996). Food Science, Fifth Edition. CBS Publication, New Delhi.

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## COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

### GENERIC ELECTIVE (GE FT 03) : SENSORY EVALUATION OF FOOD

#### Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code               | Credits  | Credit distribution of the course |          |                     | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|-----------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
|                                   |          | Lecture                           | Tutorial | Practical/ Practice |                      |                             |                                |
| <b>Sensory Evaluation of Food</b> | <b>4</b> | <b>3</b>                          | <b>0</b> | <b>1</b>            | <b>Class XII</b>     | <b>NIL</b>                  | <b>Home Science</b>            |

#### Learning Objectives:

1. To understand sensory organs and their role in sensory evaluation
2. To obtain a basic knowledge of objective and subjective evaluation of food
3. To know the importance of sensory panels and testing methods.
4. Understanding the application of sensory evaluation in food industry.

#### Learning Outcomes:

Students will be able to:

1. Recognize basic tastes and derived tastes in food.
2. Describe flavours, colours and texture in foods.
3. Comprehend concept of sensory panels and various instruments used in assessing the quality parameters of food.

#### SYLLABUS OF GE FT01

### THEORY (Credits 3; Periods 45)

#### UNIT I: Taste

**12 Hours**

Unit Description: Chemistry of five basic taste and their perception through tongue

Subtopics:

- Introduction and importance of taste
- Structure and physiology of taste organs- tongue, papillae, tastebuds, salivary glands
- Mechanism of taste perception

- Chemical dimensions of basic tastes- sweet, salt, sour, bitter and umami
- Factors affecting taste quality, reaction time, taste modification, absolute and recognition threshold
- Taste measurement-Electronic Tongue.
- Taste abnormalities

## **UNIT II: Odour**

**11 Hours**

Unit Description: Identification of various types of odour's their perception and measurement.

Subtopics:

- Introduction, definition and importance of odour and flavour
- Anatomy of nose, physiology of odour perception
- Mechanism of odour perception
- Odour classification.
- Odour measurement-GC-MS, Electronic Nose,
- Olfactory abnormalities

## **UNIT III: Colour**

**11 Hours**

Unit Description: Various attributes of colour and their objective measurement in foods.

Subtopics:

- Introduction and importance of colour
- Dimensions and attributes of colour, appearance factors, gloss etc.
- Perception of colour
- Colour abnormalities
- Measurement of colour; Munsell colour system, Tintometer, CIE colour system, Hunter colour system.

## **UNIT IV: Texture**

**11 Hours**

Unit Description: Concept of texture and its objective assessment. Rheology of all food groups and instruments used.

Subtopics:

- Introduction, definition and importance of texture
- Phases of oral processing
- Texture perception, receptors involved in texture perception
- Texture classification
- Texture measurement – basic rheological models, forces involved in texture measurement
- Some objective methods of texture evaluation of foods- TPA, mixograph, Extensigraph, amylograph, spreadimeter, compressimeter etc.

**PRACTICAL**  
**(Credit 1; Periods 30)**

- Training of sensory panel.
- To perform recognition and sensitivity tests for four basic tastes.
- To perform analytical tests of sensory evaluation.
- Recognition tests for various food flavours.
- Flavour defects in milk.
- Sensory evaluation of dairy products-milk/cheese/butter/ice cream.
- Extraction of pigments from various fruits and vegetables and study the effect of temperature and pH.
- Texture Profile Analysis of any food product- cookies/ biscuits/chips/fruits.
- Measurement of colour by using Tintometer/ Hunter Colour Lab etc.

**Essential readings:**

1. Rao, E. S. (2013). Food Quality Evaluation, Variety Books, New Delhi
2. DeMan, J. (2007). Principles of Food Chemistry, 3rd ed., Springer.
3. Meilgaard. (1999). Sensory Evaluation Techniques, 3rd ed. CRC Press LLC.

**Suggested readings:**

1. Amerine, Pangborn, & Roessler. (1965). *Principles of Sensory Evaluation of food*. London: Academic Press.
2. Harry, T., Lawless, Barbara. & Klien, P. (1991). *Sensory Science Theory and Applications in Food*. Marcel Dekker Network.
3. Rao, E.S. (2014). *Food Quality Testing and Evaluation- Sensory Test Instrumental Techniques*. New Delhi: Variety Book Publishers Distributors

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