DEPARTMENT OF HOME SCIENCE

BSc. (Hons.) Home Science

Category-II

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-HH101) Human Development I: The Early Years

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 I: The Early Years	4	3	0	1	Class XII with Science	-

Learning Objectives

1. To develop an understanding about the discipline of Human Development
2. To gain an insight of development in different domains from conception to early childhood

Learning outcomes

After completing this course, students will be able to:

1. Develop an understanding about the discipline of Human Development
2. Acquire knowledge of development in different domains from conception through infancy and early childhood.
3. Understand the salient features of human development by getting acquainted with various methods of studying children.

SYLLABUS

Unit I: Introduction to Human Development (9 hours)

Unit Description: The unit presents the student with an overview of the discipline of Human Development. The student will develop an understanding of basic ideas and terms that are central to the study of Human Development.

Subtopics: ● Human Development: Definitions, nature and scope ● Domains and stages of development ● Principles of development ● Contexts of development

Unit II: Prenatal development and childbirth (9 hours)

Unit Description: The unit describes the process of development from conception to birth and elaborates on the hereditary and environmental influences that play a role in prenatal development

Subtopics: ● Conception and stages of prenatal development ● Influences on prenatal development ● Prenatal care ● Childbirth: Methods and birth complications

Unit III: Neonate and infant development (12 hours)

Unit Description: The unit draws focus to the first two years of life and provides an understanding of the physical-motor, socio-emotional, cognitive and language development of infants.

Subtopics: ● Capacities of the neonate ● Infant care practices ● Physical motor development ● Socio-emotional development ● Language development ● Cognitive development

Unit IV: Development during early childhood (12 hours)

Unit Description: The unit traces the progression in development that occurs from 2-6 years of life.

Subtopics: ● Physical Motor Development ● Socio-Emotional Development ● Language Development ● Cognitive Development

PRACTICAL (30 hours)

Unit 1 ● Narrative method: recalling and recording an event ● Exploring cultural practices and traditions during - Pregnancy - birth - Infant care

Unit 2 ● Observation method: - observing infants and preschool children in everyday settings - recording the observations ● Neonatal assessment (APGAR scale and Neonatal reflexes) ● Multi-media resources to study prenatal development, infancy, early childhood

Essential readings

1. Berk, L. (2013). Child development. 9th ed. Boston: Pearson.
2. DECE-1 Organising Child Care Services (IGNOU Study Material) https://www.egyankosh.ac.in/handle/123456789/32288
3. Dixit, A. (2019). Baal Vikas (1st ed.). Doaba House.
4. Journey of the first 1000 days: Rashtriya Bal Swasthya Karyakram (2018) Ministry of Health and Family Welfare.
5.https://nhm.gov.in/images/pdf/programmes/RBSK/Resource_Documents/Journey_of_The_Fi rst_1000_Days.pdf
6. Patni, M. (2020). Baal Vikas (3rd ed.). Star Publications.
7. Santrock, J.W. (2011). Life-span development. New York: McGraw-Hill.
8. Singh, A. (Ed.) 2015. Foundations of Human Development. New Delhi: Tata McGraw
9. Hill. Chapter 2,
10. Snow, C.W. (1997). Infant Development. New Jersey, Prentice-Hall Inc.

Suggested Readings

1. Joshi, P. & Shukla, S. (2019). Child development and education in the twenty-first century. Singapore: Springer International
2. Khalakdina, M. (2008). Human development in the Indian context: A socio - cultural focus: 1. India: Sage.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-HH 102) Food Science and Nutrition

Credit distribution, Eligibility and Prerequisites 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		
Food Science and Nutrition	**4**	**3**	**0**	**1**	Class XII With Science	**-**

Learning Objectives

1. To understand the relationship between food, nutrition and health.
2. To describe the function of various nutrients and list their sources.
3. To understand the nutritional contribution of and effect of cooking on different food groups.
4. To describe ways of reducing nutrient losses during cooking and methods of enhancement of nutritional quality of foods.
5. To be able to prepare dishes using principles of food science.

Learning outcomes

After completing this course, students will be able to:

1. Understand the relationship between food, nutrition and health.
2. Describe the digestion, absorption and function of various nutrients and list their sources.
3. Understand the nutritional contribution of and effect of cooking on different food groups.
4. Understand ways of reducing nutrient losses during different methods of cooking and methods of enhancement of nutritional quality of foods.
5. Prepare dishes using principles of food science and assess serving size and nutritional contribution.

SYLLABUS OF DSC- 2

Unit I: Basic Concepts in Food and Nutrition (5 hours)

Unit Description: An introduction to the sciences of food and nutrition and their relationship to health and disease.

Subtopics: ● Basic terms used in study of food and nutrition ● Understanding relationship between food, nutrition and health ● Functions of food-Physiological, psychological and social

Unit II: Nutrients (15 hours)

Unit Description: Functions, dietary sources and clinical manifestations of deficiency/ excess of the nutrients

Subtopics: ● Energy, Carbohydrates, lipids and proteins ● Fat soluble vitamins ● Water soluble vitamins ● Minerals

Unit III: Food groups (15 hours)

Unit Description: Structure, composition, products, nutritional contribution, selection and changes during cooking of various food groups

Subtopics: ● Cereals and Pulses ● Fruits and vegetables ● Milk & milk products ● Eggs ● Meat, poultry and fish ● Fats and Oils ● Spices and herbs ● Beverages

Unit IV: Methods of Cooking and Enhancing the Nutritional Quality of Foods (10 hours)

Unit Description: Different methods of cooking and ways to improve nutrient retention or improve nutritional quality

Subtopics: ● Dry, moist, frying and microwave cooking ● Advantages, disadvantages and the effect of various methods of cooking on foods ● Preventing losses of nutrient during cooking ● Improving nutritional quality of diets by Food synergy, Germination, Fermentation, Fortification and Genetic Modification of foods

Practical component – 30 Hours

Unit I ● Weights and measures; preparing market order and table setting

Unit II Food preparation, understanding the principles involved, nutritional quality and portion size- ● Cereals: Boiled rice, pulao, chapati, paratha-plain/stuffed, poori, pastas ● Pulses: Whole, dehusked, pulse curry ● Vegetables: Dry preparation, vegetable curry ● Milk preparations: Kheer, porridge, custard ● Egg preparations: Boiled, poached, fried, scrambled, omelettes, egg pudding ● Soups: Plain and cream soups ● Baked products: cakes, biscuits/cookies ● Snacks and Breakfast Cereals: pakoras, cutlets, samosas, cheela, upma/poha, sandwiches ● Salads: salads and salad dressings

Essential readings

1. Chadha R and Mathur P (eds)(2015). Nutrition: A Lifecycle Approach. Hyderabad: Orient Blackswan.
2. Rekhi T and Yadav H (2014). Fundamentals of Food and Nutrition. New Delhi: Elite Publishing House Pvt Ltd.
3. Srilakshmi B (2014). Food Science, 6th Edition. Delhi: New Age International Ltd.
4. Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). The Art and Science of Cooking: A Practical Manual, Revised Edition. New Delhi: Elite Publishing House Pvt Ltd.
5. Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Hyderabad: Orient Black Swan

Suggestive readings (if any)

1. Bamji MS, Krishnaswamy K, Brahmam GNV (2016). Textbook of Human Nutrition, 4th edition. New Delhi: Oxford and IBH Publishing Co. Pvt. Ltd.
2. Byrd-Bredbenner C, Moe G, Beshgetoor D, Berning J. (2013). Wardlaw's Perspectives in Nutrition, International Edition, 9th edition, New York: McGraw- Hill.
3. Sethi P, Lakra P. Aahar Vigyan, Poshan evam Suraksha (Hindi); First Ed; 2015; Delhi: Elite Publishing House (P) Ltd.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3) COMMUNICATION CONCEPTS AND THEORIES

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		
Communication Concepts and Theories	4	3	0	1	Class XII pass with Science	

Learning Objectives

1. To learn about the concept, nature, and scope of communication.
2. To understand the process of communication with the help of theories, models, and elements of communication.
3. To recognize and appreciate the role of Perception, Empathy, Persuasion, Culture and Listening in communication.
4. To be able to comprehend the various communication transactions and their role in day-to day life with special reference to public communication.
5. To understand the relationship between culture and communication and its applications in real life settings.

Learning outcomes

The students would be able to:

1. Develop a clear understanding of the concepts of human communication.
2. Comprehend the elements and models governing the process of effective communication.
3. Gain understanding about the related concepts of communication such as Perception, Empathy, Persuasion and Listening
4. Understand the various communication transactions as well as the qualities and skills required of an effective public speaker.
5. Appreciate the role and application of factors for effective communication.

SYLLABUS OF DSC-3

Unit I: Communication: Core Concepts (10 Hours)

Unit Description: The Unit 1 explores the fundamentals of Human Communication tracing the history of communication from the olden times to the present times. It highlights the concept, nature, types, scope, and postulates of communication and discusses the functions performed through communication

Subtopics: ● Historical background, concept, nature, functions, and scope of communication ● Types of Communication – Formal and informal communication; Verbal and Non-verbal communication; Digital and Non-digital communication ● Verbal communication- Principles, types, effective use of verbal messages for communication ● Non-verbal communication-functions, types, skills, channels of non-verbal communication, inter-relationship between culture and non-verbal skills ● Elements of communication - Source, Message, Channel, Receiver, Feedback, Context, Noise & Effects

Unit II: Communication Models and Theories (10 Hours)

Unit Description: The Unit II emphasizes the models and theories of the communication process. The further delves on the importance of these models and theories for understanding the effectiveness of communication as a process.

Subtopics: ● Models of Communication: Types of models- Linear, Interaction and Transaction models, (Models by Aristotle, Harold Laswell, Shannon &Weaver, Charles Osgood, Wilbur Schramm, Helical model) ● Theories of Communication: Mass Society, Propaganda, Limited Effects, Individual Difference and Personal Influence

Unit III: Factors for Effective Communication (13 Hours)

Unit Description: The Unit delves with intricate concepts such as Empathy, Persuasion, Perception and Listening that are associated with communication. The unit also discusses the relationship between culture and communication.

● Factors for effective communication: Definitions, goals and principles of Empathy, Perception, and Persuasion ● Empathy: Concept and Theories ● Perception: Concept and Theories ● Listening in Human Communication-Listening process, significance of good listening, styles of listening, barriers to listening, culture and listening, listening theories ● Culture and communication- Relationship between culture and communication, signs, symbols and codes in communication

Unit IV: Communication Transactions and Learning (12 Hours)

Unit Description: The Unit III elucidates upon the various levels of communication transactions. This Unit in particular lays thrust on the Public communication and 'need and importance' of communication for learning. The unit also highlights the concept of communication for development.

Subtopics: ● Levels of communication transactions ● Public communication- Concept, types, techniques and skills in public speaking, qualities of an effective public speaker, overcoming speaker apprehension ● Communication, and Learning: Learning as Communication Process, Domains of Learning. Theories of learning ● Audio-Visual Aids in communication- definitions, functions, classification including Edgar Dale's Cone of Experience ● Communication for Development- Concept and approaches

Practical components – 30 Hours

● Exercises to understand visual communication: Elements of Art and Principles of Design
● Exercises to explore dimensions of non-verbal communication
● Hands on practice with different types of public speaking
● Exercises in effective listening skills
● Exercises on building empathy for effective communication
● Analysis and designing of IEC materials

Essential readings

Devito, J. (2012). Human Communication. New York: Harper & Row.

Barker, L. (1990). Communication, New Jersey: Prentice Hall, Inc; 171.

Anand, S. & Kumar, A. (2016). Dynamics of Human Communication. New Delhi: Orient Black Swan.

Vivian, J. (1991). The Media of Mass Communication. Pearson College Div; 11th edition (19 March 2012).

Punhani & Aggarwal (2014). Media for Effective Communication. Elite Publishers, New Delhi.

Suggestive readings

Patri, V. R. and Patri, N. (2002). Essentials of Communication. Greenspan Publications

Baran, S. (2014). Mass Communication Theory. Wadsworth Publishing.

Stevenson, D. (2002). Understanding Media Studies: Social Theory and Mass Communication, Sage Publications.

McQuail, D. (2000). Mass Communication Theories. London: Sage Publications.

Zeuschner, R. (1997). Communicating Today. California State University, USA.

BSC. (HONS.) FOOD TECHNOLOGY

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-FT01) Fundamentals of Food Technology

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 Food Technology	**4**	**3**	**0**	**1**	**Class XII with PCM/PCB**	**-**

Learning Objectives

1. To understand the basic principles of food science and technology.
2. To understand the structure, composition, nutritional value, changes during processing and storage of various plant and animal foods.

Learning outcomes

1. Appreciate the principles of food science and technology.
2. Attain knowledge of the structure, composition, nutritional quality and post-harvest changes in various plant foods
3. Comprehend the structure and composition of various animal foods. 4. Understand the fundamentals of various plant and animal food processing

SYLLABUS OF DSC-1

Unit I: Introduction to Food Science and Technology (4 Hours)

The unit presents the student with an overview of the food science and technology.

Unit II: Structure, Nutritional Composition and Technological aspects of Plant foods (12 Hours)

Unit Description: Cereals, Millets and Pulses

Subtopics: Introduction to cereals, nutri-cereals (millets), pseudo cereals. ● Wheat- Structure and composition, types of wheat, Diagrammatic representation of longitudinal structure of wheat grain. ● Malting, dextrinization, gelatinization, types of browning Maillard & caramelization. ● Rice- types of rice, parboiling of rice- advantages and disadvantages. ● Pulses- Introduction to pulses and legumes. ● Naturally occurring toxic constituents in pulses, types of processing- soaking, germination, decortication, cooking and fermentation.

Unit III: Structure, Nutritional Composition and Technological aspects of Plant foods (13 Hours)

Unit Description: Edible Oils, Fruits and Vegetables

Subtopics: Fats & Oils- Classification of lipids, saturated fatty acids, unsaturated fatty acids, essential fatty acids, trans fatty acids. ● Refining of oils-different methods, hydrogenation ● Rancidity –Types- hydrolytic and oxidative rancidity and its prevention. Fruits & Vegetables- Classification of fruits and vegetables, composition, pigments, types of fibre. ● Enzymatic browning and its prevention, ● Post-harvest

changes in fruits and vegetables – Climacteric and non-climacteric, ripening, physicochemical changes-physiological and horticultural maturity, pathological changes, during the storage of fruits and vegetables.

Unit IV: Nutritional Compositional and Technological aspects of Animal foods

(16 Hours)

Unit Description: Flesh Foods - Meat, Fish, Poultry and Milk and Milk products

Subtopics: ● Meat – Definition of carcass, composition of meat, post-mortem changes in meat- rigor mortis, tenderization of meat, curing and ageing of meat. ● Fish - Classification and composition of fish, aquaculture, characteristics of fresh fish, Types of spoilage in fish- microbiological, physiological, biochemical. ● Poultry - Structure and composition of egg, egg proteins, characteristics of fresh egg, deterioration of egg quality. difference between broiler and layers. ● Milk & Milk Products- Definition of milk, composition of milk and types of market of milk, milk processing- homogenization, pasteurization.

Practical component – 30 Hours

1. To study enzymatic browning in fruits & vegetables.
2. To study different types of non-enzymatic browning.
3. To study gelatinization behavior of various starches.
4. To study the concept of gluten formation of various flours.
5. To study germination.
6. To study dextrinization in foods.
7. To perform quality inspection of egg.

Essential readings

1. Bawa. A.S., Chauhan, O.P, Raju. P.S. (2013) ed. Food Science. New India Publishing Agency
2. Potter, N. N., & Hotchkiss, J. H. (2012). Food science. Springer Science & Business Media.
3. Srilakshmi, B. (2018). Food science. New Age Publishers. 7th edition.

Suggestive reading

1. De, Sukumar. (2007). Outlines of Dairy Technology. Oxford University Press
2. Kent, N.L.(2018). Kent's Technology of Cereals: An introduction for students of food science and agriculture. Elsevier. 5th edition.
3. Meyer. (2006). Food Chemistry. CBS publishers and distributors.
4. Stewart, G.F., &Amerine, M.A.(2012). Introduction to Food Science and Technology. Elsevier, 2nd Edition.
5. Rao, E.S. (2019) Fundamentals of Food Technology and Preservation, Variety Books, New Delhi.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-FT02) Principles of Food Science

Credit distribution, Eligibility and Prerequisites 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		
Principles of Food Science	**4**	**3**	**0**	**1**	Class XII with **PCM/PCB**	**-**

Learning Objectives

1. To impart basic concepts of food science, food chemistry and food sanitation.
2. To introduce the concept of food microbiology, sensory science and food packaging.

Learning outcomes

Understand the basic concepts of

1. Structure and composition, food science and food sanitation.
2. Food microbiology, sensory science and food packaging

SYLLABUS OF DSC- 2

Unit I: Surface Chemistry and Structural properties of foods (12 Hours)

Unit Description: Surface Chemistry and Structural properties of foods

Subtopic: Introduction to engineering properties of food and biomaterials, structure and chemical composition of foods, physical properties and surface chemistry (colloids, emulsions, foam, sols, gels, pectin gels) and application

Unit II: Sensory properties of foods (10 Hours)

● Basic description of taste, flavour, odour, colour and texture. ● Theories of gustation, olfaction, colour and texture. ● Techniques of sensory evaluation (Descriptive and Discriminative tests)

Unit III: Basic Food Microbiology (8 Hours)

Introduction to types of microorganisms, Food as a substrate for microorganism, bacterial growth curve, Factors affecting growth of microbes : Intrinsic and Extrinsic

Unit IV: Waste management and sanitation (9 Hours)

Properties of Waste water, hardness of water, break point chlorination, physical and chemical nature of impurities, BOD, COD, waste water treatment, detergents and sanitizers used in food industry, CIP and COP system with reference to food industry

Unit V: Introduction to Food Packaging (6 Hours)

Objectives of packaging, types of packaging materials (paper, glass, plastic, metal and wood, rigid and flexible packaging) and properties

Practical component – 30 Hours

1. Preparation and standardization of reagents
2. Determination of moisture content of food samples
3. Demonstration of fat/ protein estimation
4. Preparation of degree brix solution
5. Application of colloidal chemistry to food preparation
6. To perform sensitivity / threshold tests for basic taste
7. Introduction to microscopy and study of morphology of bacteria, yeast and mold using permanent slides.
8. Determination of alkalinity/ hardness of water
9. Determination of BOD/COD and total dissolved solids of water samples
10. Identification and testing (Thickness, GSM) of different types of packaging materials

Essential readings

- Coles, R., McDowell, D., & Kirwan, M. J. (Eds.). (2003). Food packaging technology (Vol. 5). CRC press.
- De, S. (1996). Outlines of dairy technology. Oxford University Press.
- DeMan, J. M., Finley, J. W., Hurst, W. J., & Lee, C. Y. (2018). Principles of food chemistry, 4th ed. Springer.
- Frazier, W.C. and Westhoff, D.C.(2004). Food Microbiology.New Delhi. TMH Publication
- Shadaksharaswamy, M., & Manay, N. S. (2011). Food, facts and principles. 4 th ed. New Age international publisher. New Age International.
- Meyer LH.(2006). Food Chemistry, CBS Publication, New Delhi.
- Potter N.N., Hotchkiss J.H. (2007). Food Science,5th ed. CBS Publication, New Delhi
- Ranganna, S. (2002). Handbook of Analysis of quality control for fruit and Vegetables products 2nd Ed. Tata Mcgraw Hill pub. Co. Ltd. New Delhi

Suggestive readings (if any)

- Jenkins, W.A. and Harrington, J.P. (1991). Packaging Foods with Plastics, Technomic Publishing Company Inc., USA.
- Norman, G. Marriott. and Robert, B. Gravani. (2018). Principles of Food Sanitation,6th ed. New York, Springer

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-FT03) MILK & MILK PRODUCTS TECHNOLOGY

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		
MILK & MILK PRODUCTS TECHNOLOGY	**4**	**3**	**0**	**1**	**Class XII pass** with **PCM/PCB**	

Learning Objectives

1. Processing of milk and milk products at industry level
2. To know the compositional and technological aspects of milk
3. To study processed milk products

Learning outcomes

1. Understand the importance of Dairy industry
2. Understand the various properties and composition of milk.
3. Understand the technology of manufacturing of various products like Butter, ghee, Yoghurt, Dahi, Shrikhand, Ice-cream, Milk powder, channa, Paneer, Cheese (cheddar), Khoa
4. Understand market milk industry stages of milk processing and working of a few Dairy equipment's

SYLLABUS OF DSC-3

Unit I: Physical properties of milk (7 Hours)

• Color • Taste • pH and buffering capacity • Refractive index • Viscosity • Surface tension • Freezing & boiling point • Specific heat and electrical conductivity

Unit II: Composition of milk (16 Hours)

Unit Description: Macro nutrients and micronutrients of milk; milk sugar, fat and protein.
Subtopics: • Lactose (alpha and beta forms and their differences) • Significances of lactose in dairy industry • Composition and structure • Fat constants (Saponification value, Iodine value, RM value, Polenske value, peroxide value) • Difference between casein and serum protein • Different types of casein (acid and rennet) • Uses of casein

Unit III: Market milk industry and milk products (22 Hours)

Processing of milk and milk products
Subtopics: • Systems of collection of milk reception • Platform testing • Various stages of processing; Filtration, Clarification Homogenization, Pasteurization • Description and working of clarifier, cream separator, homogenizer and plate heat exchanger • Principle of processing of following milk products -Butter, ghee, yoghurt, dahi, shrikhand, ice-cream, milk powder, channa, paneer, cheese (cheddar), khoa

Practical components – 30 Hours

1. To determine specific gravity of milk
2. To determine acidity of milk
3. To perform COB test in milk
4. To estimate milk protein by Folin method
5. To estimate milk fat by Gerber method
6. To prepare casein and calculate its yield
7. To perform MBRT test in milk
8. Schematic diagram of pasteurization of milk in dairy industry
9. Study energy regeneration in dairy industry
10. Study and schematic diagram of CIP in dairy industry

Essential readings

● De, Sukumar. (2007). Outlines of dairy technology. Oxford University Press.
● Webb B.H.and Alford (2005). Fundamentals of dairy chemistry. CBS Publisher.

Suggestive readings

● P.F. Fox, T. Uniacke-Lowe and J.A.O' Mahony (2005). Dairy Science and Technology. Taylor & Francis.
● P. Walstra, Jan T.M. Wouters and Tom J. Geurts (2015). Dairy chemistry and Biochemistry. Springe.

BSC. (PROG.) HOME SCIENCE
Category-II

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-1) –: INTRODUCTION TO 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		
Introduction to Resource Management	4	3	-	1	Class XII pass	-

Learning Objectives

The Learning Objectives of this course are as follows:

1. To comprehend the fundamentals of resource management, their purpose and utilization in today's context and conservation approaches.
2. To understand the functions and processes of management in a scientific manner for optimum use of resources.

Learning outcomes

The Learning Outcomes of this course are as follows:

The students will be able:

1. Comprehend the concept and fundamentals of resource management in a changing scenario.
2. Acquaint themselves with the available resources, their uses and conservation approaches.
3. Utilize resources in an efficient and judicious manner.
4. Understand the functions and processes of management in a scientific manner for the optimum use of resources.

SYLLABUS OF DSC-1

UNIT – I Basics of Management **(9 Hours)**

This unit will develop understanding regarding the concept of management and role of motivation in management.

Subtopics:

- Concept, nature, universality and scope of management
- Theories and Approaches to Management
- Ethics in management
- Motivation in management

UNIT – II Functions of Management **(12 Hours)**

Students will be able to develop complete understanding of different management functions and their importance in the process of management.

Subtopics:

- Decision Making: Concept, significance and steps involved in decision-making process.
- Planning: Nature and characteristics, classification of plans & steps in planning.
- Organizing: Concept, significance and steps involved in organizing process.
- Supervision: Types of supervision (directing & guiding), factors of effective supervision.

● Controlling: Types of control, steps in controlling, requirements of effective control.
● Evaluation: Types and steps of evaluation.

UNIT – III Time and Energy Management (12 Hours)

This unit will orient the students towards application of management processes to time and energy as important resources.

Subtopics:

- Time Management: Concept, Tools of time management, types of time plans, Steps in making a time plan.
- Energy Management: Concept, principles of body mechanics, types of fatigue.
- Work Simplification: Techniques, Classes of Change.

UNIT – IV Prenatal Development (12 Hours)

Students will gain understanding of prenatal through presentations on stages of prenatal development and factors which have an impact.

Subtopics:

● Stages of prenatal development
● Factors affecting prenatal development

Practical component

Unit I: Identification and Development of managerial competencies

Activities:

● Micro Lab and Who am I
● SWOT analysis
- Self
- Case studies: Individuals
- Case studies: Organizations
● Building Decision making abilities
● Team building management games
● Decision Making through Case Analysis

Unit II: Time and Energy Management

Activities:

● Time Management:
- Evaluation of time plans through case analysis:
o Case Study - 1
o Case study - 2
- Analysis of time use pattern of self
- Preparation and evaluation of time plans
● Work improvement using time and motion study techniques
- pathway chart or travel chart / process chart - observe, record, and analyze an activity.
- pathway chart or travel chart / process chart - observe, record, and analyze an activity with improvement.

Essential readings

1. Goel, S. Ed. (2016). Management of resources for sustainable development. New Delhi: Orient Blackswan Pvt. Ltd.
2. Moore, T. J. (2021). Family resource management (4th ed.), ISBN-13: 978-1544370620.
3. Chhabra, T.N. (2020) Business Organization & Management. ISBN: 9789385071102
4. Griffin, R. W. (2016). Fundamentals of Management. Cengage Learning.

5. Griffin, R. W. (2013). Management: Principles and practices (11th ed.). South-Western Cengage Learning.
6. Rao, V.S. P. (2008). Principles & practice of management. Konark Publishers Pvt. Ltd.
7. Koontz, H., & O' Donnel, C. (2005).Management: A systems and contingency analysis of managerial functions. New York: McGraw-Hill Book Company.

Suggestive readings:

1. Kreitner, R. (2009). Management Canada: Houghton Miffin Harcourt Publishing Company.
2. Robbin, S.P. (2009). Fundamentals of management. Pearson Education.
3. Steidl, R. & Bratton, E. (1968). Work in the Home. USA: John Wiley & Sons, Inc.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): FASHION CONCEPTS

Credit distribution, Eligibility and Prerequisites 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		
FASHION CONCEPTS	4	3	-	1	Class XII pass	-

Learning Objectives

The Learning Objectives of this course are as follows:

1. To understand the basics of fashion and the fashion industry.
2. To impart knowledge about functions and theories of clothing.
3. To develop sensitivity towards selection of garments and garment design.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. Identify the role and functions of clothing and recognize the factors affecting the selection and evaluation of clothing.
2. Explain the concept of fashion, its terminology, sources and factors affecting it.
3. Being aware of global fashion centers.
4. Apply the knowledge of elements and principles in design interpretation.

SYLLABUS OF DSC- 2

UNIT – I Clothes and Us (12 Hours)

This unit introduces the student to key concepts of how and why people started to wear clothes, and what factors are at play in the current times for selecting clothing for the individual.

- Clothing functions and theories of origin
- Clothing terminology
- Individuality and conformity, conspicuous consumption and emulation
- Body shapes
- Selection and Evaluation of quality of ready-made garments
- Selection of clothes for self

UNIT – II Understanding Fashion (12 Hours)

This unit will deal with the basic concepts in understanding fashion, from key terms to the why and how of fashion and more contemporary knowledge of fast and slow fashions.

- Fashion cycle
- Terminology
- Theories of fashion adoption
- Sources of fashion research

- Factors favouring and retarding fashion
- Role of a Designer
- Fast Fashion: Characteristics of Fast Fashion, Fast Fashion and Consumer
- Slow Fashion: Characteristics, Slow Fashion as a process, importance of changing from fast to slow fashion.

UNIT – III Design in Garments (9 Hours)

This unit orients the student from a design perspective in garments; the various elements that comprise a garment and the various principles that govern and guide in developing a good design.

UNIT – IV Fashion (12 Hours)

This unit will apprise the student on the forecasting process for fashions, functioning of the industry and various garment categories for production

● Structure and Functioning of Fashion Industry
● Forecasting: Fashion seasons
● Garment Categories
● Fashion Centres
● Careers in Fashion

Practical component – 30 Hours

Unit I: Hand stitches

This unit will impart hands-on skill for making small products using upcycling of used articles of clothing or home textiles and how value addition may be achieved in garments by using popular embroidery stitches.

● Prepare samples of -
- Basic hand stitches for creating a seam and edge finishing.
- Decorative Hand Stitches

Develop an upcycled product.

Unit II: Elements & Principles of Design

This unit will train the students to identify the various elements of a design that a garment uses and the principles that create an aesthetic design. Eventually a student will be able to effectively use these elements and principles of design to create well designed garments.

● Create a collection of garments for analysis from print and visual media.
● Analyze the various elements that comprise the garments.
● Identify the various principles of design used in the selected garments

Essential readings

1. Brown, Patty, Rice J., 1998, Ready to Wear Apparel Analysis. Prentice Hall.
2. Marshall S G, Jackson H O, Stanley MS, Kefgen M & Specht T, 2009, Individuality in
3. Clothing & Personal Appearance, 6th Edition, Pearson Education, USA.
4. Tate S.L., Edwards M.S., 1982, The Complete Book of Fashion Design, Harper and Row Publications, New York.
5. Fringes G.S., 1994, Fashion From Concept to Consumer, 6th edition, Prentice Hall, New Jersey.

Suggestive readings

1. R. Andrew, 2018, Key Concepts for Fashion Industry, Bloomsbury Publishing, India.
2. Reader's Digest (Eds.). 2002, New Complete Guide to Sewing, (Canada) Ltd. Montreal.

DISCIPLINE SPECIFIC CORE COURSE – 3 (DSC-3): INTRODUCTORY LIFE SCIENCES FOR HOME SCIENCE

Credit distribution, Eligibility and Prerequisites 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 LIFE SCIENCES FOR HOME SCIENCE	4	2	-	2	Class XII pass	-

Learning Objectives

The Learning Objectives of this course are as follows:

1. To introduce students to animal and plant diversity, and its significance for human life.
2. To make students aware of the fundamentals of cell structure, physiology and growth.
3. To enable students to appreciate the interdependence of ecosystems and its environmental underpinnings.
4. To make students aware of basics of immunology, genetics and biotechnological applications.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. The students would be able to identify animals and plants of human concerns and ecological importance.
2. The students would be able to appreciate the existential link between plants, microbes, animals and humans.
3. The students would develop hands-on experience on plant propagation methods along with a functional understanding of plant physiology.
4. The students would understand the importance of prenatal screening, and biotechnology.
5. The student would be able to make a pedigree chart of a family and identify the inheritance pattern of a character.

SYLLABUS OF DSC- 3

Section A – Botany

UNIT – I Introduction to the Plants: Cytology, Morphology and Economic Botany (8 Hours)

Fundamentals of Plant diversity, Plant morphology and Plant Resource Utilization

Subtopics

- Introduction to Plant Diversity
- Types of a cell: Prokaryotes and Eukaryotes
- Plant cell- An Overview, Types, Structure and Function
- Angiosperm plants: Morphology (Parts of plants with modifications and Life cycle)
- Plant Nutrition and Soil: Essential Elements and Functions, Nutrient cycles, Biofertilizers, Bio-enzymes
- Introduction to Economically important plants: Fibre Crops, Medicinal Plants, Oil Crops, Timber Plants, Food Crops

UNIT – II Plant Physiology, Propagation of Plants and Gardening (7 Hours)

Basics of plant physiology, Plant propagation and Gardening
Subtopics

- Important physiological processes (Diffusion, Osmosis and plasmolysis)
- Brief account of transpiration, photosynthesis and respiration in plants
- Seed Propagation
- Vegetative Propagation: Cuttings – stem leaf and root, Layering, Grafting
- Gardening: Concept and Types with example of Kitchen Garden, Community gardens, and Maintenance of Plants
- Role of Plants in Air pollution Control
- Introduction to Organic farming, Climate smart agriculture

Section B – Zoology

UNIT – III Animal Diversity and Human needs (8 Hours)

Animal diversity and importance in human life
Subtopics

- Types, Structure and Function of Animal Cell and its Components
- Animals and their ecosystem services (role of animals in pollination, seed dispersal, soil health, food security, domestic animals)
- Animal diversity in human environment: threats and conservation, human-animal conflict
- Economic importance and control of common household pests e.g. cockroach, housefly, mosquitoes and termites
- Identification and control of important stored grain pests
- Zoonotic disease: Transmission, Prevention and Control (Taeniasis, Ascariasis, Malaria, COVID-19, Bird flu, Rabies, Tuberculosis)

UNIT – IV Genetics, Immunity and Biotechnology (7 Hours)

Basics of genetics, birth defects, immunity and biotechnology
Subtopics

- Structure and Function of Genes and Chromosome
- Laws of Heredity and sex linked inheritance
- Case Studies: Inheritance of Thalassemia, Sickle Cell Anaemia and Phenylketonuria (PKU)
- Overview of Birth defects: Types and Causes with example like Down's syndrome etc.
- Basics of Human Immunity
- Introduction to Biotechnology: Application in Animal Improvement and Medicines

Practical component – 30 Hours

SECTION A- BOTANY

1. Study the role of sunlight during photosynthesis
2. Study the rate of transpiration on both the surfaces of leaves
3. Assessment of soil quality: determination of soil pH, test for nitrates, nitrites
4. Preparation of soil mixture, potting and re-potting
5. Raising of healthy seedlings in a nursery bed
6. Propagation of plants through stem cutting , air layering and underground layering
7. Propagation of plants by approach grafting and veneer grafting
8. Identification and classification of economically important Food Crops, Medicinal, Fibre crops, Timber Plants and Oil Crops
9. Identification, care and maintenance of important plants in controlling air pollution
10. Preparation of temporary mount of onion peel

11. Preparation of temporary mount of epidermis of Rhoeo plant to study distribution of stomata on upper and lower surface of leave

SECTION B- ZOOLOGY

1. Study of cell structure through temporary slides: Blood Cells
2. Study of cell structure through temporary slides: Neurons
3. Study of cell cycle stages through permanent slides: Mitosis
4. Study of cell cycle stages through permanent slides: Meiosis
5. Identification of few common animal and birds in the human environment
6. Estimation of species richness and abundance of animal/ birds in the human environment using point count method
7. Estimation of species richness and abundance of animal/ birds in the human environment using transect method
8. Identification of life cycle stages of two common household pests: Termite and Mosquito
9. Methods of pest control and its application in houses (through audio/ visual/ seminar/visit)
10. Pedigree chart preparation & analysis
11. Demonstration of vermicomposting: preparation and monitoring of the setup at home
12. Case study of a zoonotic/ parasitic disease: COVID-19 pandemics/ bird flu

Essential readings

1. Jordan E. L. and Verma P. S. 2009. Invertebrate Zoology, S. Chand and Co. Ltd, New Delhi.
2. Raven P. and Johnson G. 2010. Biology. Tata McGraw Hill Publication, New Delhi.
3. Soni N. K. and Soni V. 2010. Fundamentals of Botany. Tata McGraw Hill Publication, New Delhi.
4. K. Park. 2016. Textbook of preventive and social medicine. Banarsidas Bhanot Publishers.
5. Singh J. S., Singh S. P. and Gupta S. R. 2017. Ecology, Environment Science and Resource Conservation. S.Chand (G/L) & Company Ltd, India.

Suggestive readings

1. Chadha K. L. 2012. Handbook of Horticulture. ICAR Publication, New Delhi.
2. Gopalaswamiianger K.S. 1991. Complete gardening in India. Messers Nagaraj and Co., Madras.
3. Magurran, A.E. 1988. Ecological Diversity and Measurement. Croom Helm Limited, Australia.
4. Gupta R. 2015. Fundamentals of Zoology: Theory and Practice. Elite Publishing House Pvt. Ltd., New Delhi.
5. Hartman H. T and Kester D. 1986. Plant Propagation: Principles and Practices Prentice Hall of India Pvt. Ltd., New Delhi.
6. Kotpal, R. L. 2000. Modern Textbook of Zoology. Rastogi Publications, Meerut.
7. Upadhyay R. 2017. Elements of Plant Science. Elite Publishing House, New Delhi.
8. Vij, U and Gupta, R. 2011. Applied Zoology. Phoenix Publishing House, New Delhi.