BHARATHIDASAN UNIVERSITY  **TIRUCHIRAPPALLI - 620 024.**

B.Sc. HOME SCIENCE

CHOICE BASED CREDIT SYSTEM –

LEARNING OUTCOMES BASED CURRICULUM FRAMEWORK (CBCS - LOCF)

(Applicable to the candidates admitted from the academic year 2022-23 onwards)

(NAAN MUDHALVAN SCHEME was implemented from 2nd to 6th Semester)

Sem.	Part	Course	Title	Ins. Hrs.	Credit	Exam Hours	Marks		Total
							Int.	Ext.	
I	I	Language Course – I Tamil $ / Other Languages + #		6	3	3	25	75	100
	II	English Course - I		6	3	3	25	75	100
	III	Core Course – I (CC)	Food Science	5	5	3	25	75	100
		Core Practical – I (CP)	Food Science	4	4	3	40	60	100
		First Allied Course – I (AC)	Human Physiology	4	4	3	25	75	100
		First Allied Practical (AP)	Human Physiology	3	-	-	-	-	-
	IV	Value Education		2	2	3	25	75	100
	TOTAL			**30**	**21**	**-**	**-**	**-**	**600**
II	I	Language Course - II Tamil $ / Other Languages + #		6	3	3	25	75	100
	II	English Course - II		4	3	3	25	75	100
	III	Core Course – II (CC)	Principles of Nutrition	5	5	3	25	75	100
		Core Practical – II (CP)	Principles of Nutrition	4	4	3	40	60	100
		First Allied Practical (AP)	Human Physiology	3	2	3	40	60	100
		First Allied Course – II (AC)	Fundamentals of Biochemistry	4	4	3	25	75	100
		Add on Course – I ##	Professional English – I	6*	4	3	25	75	100
	IV	Environmental Studies		2	2	3	25	75	100
	VI	Naan Mudhalvan Scheme (NMS) @@	Language Proficiency for Employability - Effective English	2	2	3	25	75	100
	TOTAL			**30**	**29**	**-**	**-**	**-**	**900**

III	I	Language Course – III Tamil $ / Other Languages + #		6	3	3	25	75	100
	II	English Course - III		6	3	3	25	75	100
	III	Core Course – III (CC)	Fundamentals of Human Development	5	5	3	25	75	100
		Core Practical - III (CP)	Fundamentals of Human Development	4	4	3	40	60	100
		Second Allied Course – I (AC)	Early Chidhood Care and Education	4	4	3	25	75	100
		Second Allied Practical (AP)	Early Chidhood Care and Education	3	-	-	-	-	-
		Add on Course – II ##	Professional English - II	6*	4	3	25	75	100
	IV	Non-Major Elective I @ - Those who choose Tamil in Part I can choose a non-major elective course offered by other departments. Those who do not choose Tamil in Part I must choose either a) Basic Tamil if Tamil language was not studied in school level **or** b) Special Tamil if Tamil language was studied upto 10^{th} & 12^{th} std.	Bakery and Confectionary	2	2	3	25	75	100
	VI	Naan Mudhalvan Scheme (NMS) @@	Digital Skills for Employability – Microsoft Digital Skills	-	2	3	25	75	100
	TOTAL			**30**	**27**	**-**	**-**	**-**	**800**
IV	I	Language Course –IV Tamil $ / Other Languages + #		6	3	3	25	75	100
	II	English Course – IV		6	3	3	25	75	100
	III	Core Course - IV (CC)	Textile and Clothing	5	5	3	25	75	100
		Core Practical - IV (CP)	Textile and Clothing	4	4	3	40	60	100
		Second Allied Practical – I (AP)	Early Childhood Care and Education	3	2	3	40	60	100
		Second Allied Course – II (AC)	Garment Embellishment Techniques	4	4	3	25	75	100
	IV	Non-Major Elective II @ - Those who choose Tamil in Part I can choose a non-major elective course offered by other departments. Those who do not choose Tamil in Part I must choose either Basic Tamil if Tamil language was not studied in school level **or** Special Tamil if Tamil language was studied upto 10^{th} & 12^{th} std.	Food Preservation	2	2	3	25	75	100
	VI	Naan Mudhalvan Scheme (NM) @@	Employability Skills - Employability Skills	-	2	3	25	75	100
	TOTAL			**30**	25	-	-	-	800

V	III	Core Course - V (CC)	Family Resource Management	5	5	3	25	75	100
		Core Course – VI (CC)	Food Service Management	5	5	3	25	75	100
		Core Course – VII (CC)	Home Science Extension and Communication	5	5	3	25	75	100
		Core Practical -V (CP)	Family Resource Management	4	4	3	40	60	100
		Major Based Elective – I (Any one)	1. Nutrition through Life Cycle 2. Community Nutrition	5	4	3	25	75	100
	IV	Skill Based Elective I	Computer Applications in Home Science	4	2	3	25	75	100
		Soft Skills Development		2	2	3	25	75	100
	VI	Naan Mudhalvan Scheme (NMS) @@	Marketing & Design Tools – Digital Marketing	-	2	3	25	75	100
	TOTAL			**30**	**29**	**-**	**-**	**-**	**800**
VI	III	Core Course - VIII (CC)	Dietetics	6	5	3	25	75	100
		Core Course - IX (CC)	Principles of Interior Design	6	5	3	25	75	100
		Core Practical – VI (CP)	Dietetics	4	4	3	40	60	100
		Major Based Elective – II (Any one)	1. Food Microbiology 2. Consumer Economics	5	4	3	25	75	100
		Project	Project	4	3	-	20	80	100
	IV	Skill Based Elective – II	Fundamentals of Entrepreneurship Development	4	2	3	25	75	100
	V	Gender Studies		1	1	3	25	75	100
		Extension Activities **		-	1	-	-	-	-
	VI	Naan Mudhalvan Scheme (NMS) @@	Food Safety & Quality Management	-	2	3	25	75	100
		TOTAL		**30**	**27**	**-**	**-**	**-**	**800**
GRAND TOTAL				**180**	**158**	**-**	**-**	**-**	**4700**

$ For those who studied Tamil upto 10th +2 (Regular Stream).

+ Syllabus for other Languages should be on par with Tamil at degree level.

Those who studied Tamil upto 10th +2 but opt for other languages in degree level under Part- I should study special Tamil in Part – IV.

The Professional English – Four Streams Course is offered in the 2nd and 3rd Semester (only for 2022-2023 Batch) in all UG Courses. It will be taught apart from the Existing hours of teaching / additional hours of teaching (1 hour /day) as a 4 credit paper as an add on course on par with Major Paper and completion of the paper is must to continue his / her studies further. (As per G.O. No. 76, Higher Education (K2) Department dated: 18.07.2020).

* The Extra 6 hrs / cycle as per the G.O. 76/2020 will be utilized for the Add on Professional English Course.

@ NCC Course is one of the Choices in Non-Major Elective Course. Only the NCC cadets are eligible to choose this course. However, NCC Course is not a Compulsory Course for the NCC Cadets.

** Extension Activities shall be outside instruction hours.

@@ Naan Mudhalvan Scheme.

SUMMARY OF CURRICULUM STRUCTURE OF UG PROGRAMMES

Sl. No.	Part	Types of the Courses	No. of Courses	No. of Credits	Marks
1.	I	Language Courses	4	12	400
2.	II	English Courses	4	12	400
3.	III	Core Courses	9	45	800
4.		Core Practical	6	24	700
5.		Allied Courses I & II	4	16	400
6.		Allied Practical	2	4	200
7.		Major Based Elective Courses	2	8	200
8.		Add on Courses	2	8	200
9.		Project	1	3	100
10.	IV	Non-Major Elective Courses (Practical)	2	4	200
11.		Skill Based Elective Courses	2	4	200
12.		Soft Skills Development	1	2	100
13.		Value Education	1	2	100
14.		Environmental Studies	1	2	100
15.	V	Gender Studies	1	1	100
16.		Extension Activities	1	1	0
17.	VI	Naan Mudhalvan Scheme	5	10	500
	Total		**48**	**156**	**4700**

PROGRAMME OUTCOMES:

1. Display skills, promote and apply scientific knowledge in the various fields of Home Science ensuring progressive development of the individual and able to find sustainable solution to solve the issues pertaining to the community/Industry.
2. Identify, analyze and formulate novel ideas to enhance holistic development with multidimensional perspectives of Home Science utilizing the principles and its applications.
3. Demonstrate advanced comprehensive knowledge with distinct technical attributes relating to the key concepts and principles of scientific phenomenon and their applications in day-to-day life upholding professional code of ethics and values.
4. Create citizens with problem solving, decision making and communication skills to effectively interact with all stakeholders ensuring individual progress and career advancement at the National and Global levels.
5. Acquire real time experience through demonstrations, internship and project for further career prospects.
6. Enrich ethnicity and cultural practices through the conceived concepts and flourish as women entrepreneurs and leaders.

7. Design solutions for complex problems and design components or processes that meet the specific needs with appropriate consideration for public health and safety, societal and environmental conditions
8. Creating genuine concern for society and environment that culminates in purposeful extension and outreach activities to inculcate social citizenship.

PROGRAMME SPECIFIC OUTCOMES:

1. Display professional skills and competencies in fields of Home Science matching industrial requirements for enhancing employability.
2. Address the issues and challenges prevailing in the society by the application of principles, concepts conceived by adopting and applying the best practices related to health and wellbeing.
3. Develop core competency skills to design and devise strategies to promote social, cultural, economic, ecological and gender equity. Develop effective communication and foster support extending to the community for sustainable livelihood.
4. Acquire proficiency in the perspectives of Home Science and engage in professions upholding moral principles, values and ethics.
5. Appraise and distinguish situations that demand immediate care and guidance in identification of developmental delays in children and exhibit professional competency in service and rehabilitation.
6. Transfer knowledge on ecofriendly technologies and means of diligent management of household resources to the community.
7. Acquire critical thinking, decision making attributes and aesthetic skills to enhance professional competency by updating and applying emerging trends and technologies.
8. Foster entrepreneurial skills enable pursuit of higher education, research and career in all the spheres of Home Science causing meaningful societal impact.

*****

First Year	**CORE COURSE I FOOD SCIENCE**	**Semester: I**
Code:	**(Theory)**	**Credit: 5**

COURSE OBJECTIVES: To enable the students to

- Understand the classification of foods according to their functions.
- Gain knowledge on the composition and nutritive value of foods.
- Know the basic methods of cooking.

UNIT - I INTRODUCTION TO FOOD SCIENCE AND COOKING METHODS:

Definitions - Food Science, Food, Nutrients, Nutritional Status, Mal-nutrition- Under – nutrition, over nutrition, Balanced diet, Hunger- Hollow Hunger, Hidden Hunger, Health, Meal, Menu. Food Groups - Basic five, My Plate, Nutritional classification of foods – Energy yielding, Body building and Protective foods. Cooking - Objectives, cooking methods- Moist and Dry heat methods of cooking, merits and demerits. Microwave cooking and solar cooking.

UNIT – II CEREALS AND PULSES:

Cereals and Cereal products - Structure and Nutritive value of rice and wheat, Nutritional importance of millets– maize, jowar, ragi, bajra; Milling of rice and wheat; Parboiling of rice, Products of wheat and rice, Enrichment and fortification of cereals and flours, Batters and doughs; Malting of cereals. Pulses - Nutritive value, factors affecting cooking quality of pulses, germination – process, advantages. Nuts - Composition and nutritive value-toxins in nuts and oilseeds

UNIT – III VEGETABLES, FRUITS AND MILK:

Vegetables - Classification, Nutritive value; Pigments- fat soluble, water soluble; selection of vegetables, cooking of vegetables- changes during cooking, nutrient loss, effect of cooking on the pigments. Fruits - Classification, Nutritive value; Changes during ripening of fruits, enzymatic browning and prevention, storage. Milk and Milk Products - Composition and Nutritive value, Different types of milk, effect of heat, acid and enzymes on milk.

UNIT – IV EGG AND FLESH FOODS:

Egg - Structure, Composition and Nutritive value. Factors affecting coagulation and foam formation, testing freshness in egg- candling. Meat- structure, composition, a list of different types of meat, cuts of meat, post mortem changes in meat, and tenderness of meat. Poultry- composition and classification. Fish- structure, composition, nutritive value, selection of fish.

UNIT V - FATS, SUGARS AND SPICES:

Fats and oils- composition, processing and refining of fats, refined oils, plasticity, hydrogenation, winterization. Smoking point, factors that lower smoking point, absorption of fat during cooking. Sugar- nutritive value, sugar related products, stages of sugar cookery, crystallization, factors affecting crystallization. Spices and condiments- types and uses in Indian cookery, medicinal value.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Browse material related to effect of cooking on the nutritive value of different foods. Food Sample Booklet (Millets, pulses, spices). Develop games on food and nutrients

REFERENCES:

1. Srilakshmi, B., (2010), Food Science, 6th edition New Age International (P) Limited, New Delhi.
2. Sunetra, R., (2007), Food Science and Nutrition, Oxford University Press, India.
3. Chandrasekhar, U.,(2002),Food Science and Application in Indian Cookery, Phoenix Publishing House P. Ltd., New Delhi.
4. Potter, N., and Hotchkiss, J.H., (1995), Food Science, 5th edition, Chapman & Hall, New York.
5. Shakuntala, M. and Shadaksharaswamy. M., (2000), 2nd Edition, Foods, Facts and Principles, New Age International Pvt. Ltd., Publishers, New Delhi.
6. Brow, A., (2000), Understanding Food, Thomson Learning Publications,
7. Parker, R. (2000), Introduction to food Science, Delmer, Thomson Learning Co., Delma.
8. Mehas, K.Y. and Rodgers, S.L. Food Science and You, Mc Millan Mc Graw Company, New York, 2000.
9. https://www.pdfdrive.com/food-science-books.html
10. https://archive.org/details/textbookoffoodsc0000khad
11. https://himitepa.lk.ipb.ac.id/e-book/
12. www.fao.org
13. www.wfp.org

COURSE OUTCOMES:

- Identify the foods and classify them based on the basic V food group system
- Define the foods and describe its structure
- Demonstrate their ability in selecting the good food and reject those with low quality
- Analyse the different nutrients present in a food
- Compare the nutrients present in the different types of food and suggest the nutrient rich foods.

*****

First Year	CORE PRACTICAL I FOOD SCIENCE	Semester I
Code:	(Practical)	Credit: 4

GENERAL:

- Different types of cereals, pulses, vegetables, fruits and nuts and oil seeds – Observation
- Guidelines to be followed in laboratory.
- Method of Measuring Ingredients.
- Demonstration of Cooking Methods.
- Estimate the percentage of edible portion of foods.

PRACTICALS:

1. Cereals – Preparation of rice by steaming, absorption method, Straining and Pressure cooking. Batters and dough. Preparation of idli, millet upma, chapathi, poori, fried rice, briyani, bisibelabath string hoppers, puttu, and Millet based variety rice.
2. Pulses – Factors affecting the cooking quality of pulses. Preparation of sambar, sundal, bholi, mysore-pak, vada, channa masala, thuvaiyal, green gram payasam, sprouted salad and koottu.
3. Vegetables – Selecting, cleaning, coring, pitting and chopping of fruits and vegetables. Avial, porriyal, pugath, stew, kuruma, podimas, pachadi, stuffed chapathi, cauliflower manchurian, vegetable kofta, stuffed capsicum, baked vegetables.
4. Fruits – Fritters, halwa, salad, stuffed items, payasam, panchamirtham
5. Milk – Cottage Cheese, paneer, phirnee, payasam, ice cream, kova, buttermilk curry, basanthi and jamun, sweet lassi, shrikand.
6. Egg – Boiled, scrambled, poached, curry, masala, omelette.
7. Fats and oils - Preparation- shallow fry- vegetable cutlet and deep fry; banana chips, vadai, diamond cuts.
8. Stages of sugar cookery.
9. Three course, five course and seven course menu planning.
10. Score card preparation and sensory evaluation.

*****

First Year | **FIRST ALLIED COURSE I** | **Semester : I**

HUMAN PHYSIOLOGY

Code: | **(Theory)** | **Credit: 4**

COURSE OBJECTIVES: To enable the students to

- Understand the structure and functions of various organs of the body
- Obtain a better understanding of the principles of nutrition through the study of physiology
- To gain knowledge on the importance of hormonal and nervous regulation of the body.

UNIT – I TISSUE AND BLOOD:

Cell and tissues - Structure of Cell and functions of different organelles. Classification, structure and functions of tissues. Blood - Constituents of blood- RBC, WBC and Platelets and its functions. Erythropoiesis, Blood clotting, Different Blood groups. Haemoglobin – Structure and functions; erthropoiesis, Blood coagulation, Reticulo- Endothelial System – Definition and functions, Lymphatic System.

UNIT - II CARDIO VASCULAR AND RESPIRATORY SYSTEM:

Heart and Circulation - Structure of heart and blood vessels; Properties of cardiac muscle, cardiac cycle, origin and conduction of heart beat; measurement of arterial blood pressure. Respiratory System - Structure of Respiratory organs; Sub – divisions of lung air; Mechanism of respiration.

UNIT - III DIGESTIVE AND EXCRETORY SYSTEM:

Digestive System - General Anatomy; Digestion in the mouth, stomach and intestines. Movements of the intestine;Role of Liver and Pancreas – Structure and Functions. Excretory system - Physiology of the Urinary System- Structure of kidney and nephron; Formation of urine, micturition. Skin – Structure and function of skin.

UNIT - IV ENDOCRINE AND REPRODUCTIVE SYSTEM:

Endocrine System - Structure and functions of thyroid, pituitary, parathyroid, adrenals, islets of langerhans of pancreas. Reproductive System - Anatomy of the male and female reproductive organs; menstrual cycle, Development of Embryo; Pregnancy and parturition.

UNIT - V NERVOUS SYSTEM AND SENSE ORGANS:

Nervous System - General classification of nervous system , Structure of nerve cell and Spinal cord; Basic Knowledge of different parts of the brain – anatomy and functions of cerebrum, cerebellum and medulla oblongata. Sense Organs - Structure and function of eye, ear, physiology of taste and smell.

UNIT - VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Write an assignment on Artificial respiration and ECG. Develop E content on Structure and physiological functions of any one organ.

REFERENCES:

1. Sembulingam, K. (2000). Essentials of Medical Physiology. Jaypee Brothers Medical Publishers (P) Ltd., New Delhi
2. SaradhasubrahmanyamandMadhavanKutty, (2020).Text book of Human Physiology. S.Chand Publication.
3. Chatterjee C.C (2004). Human Physiology. Volume I. Medical Allied Agency. Kolkata
4. Chatterjee C.C (2004). Human Physiology/ Volume II.Medical Allied Agency. Kolkata
5. Gillian Pocock, Christopher D. Richards, David A. Richards (2018). Human Physiology. oxford University Press.(5th ed)
6. Lauralee Sherwood (2015). Human Physiology: Cells to systems. Cengage Learning
7. H S Ravi Kumar Patil, H. K. Makari, H. Gurumurthy, S. V. Sowmya, (2009). A text book of Human Physiology. I.K. International Publishing House Pvt. Limited.
8. Guyton and Hall (2000). Textbook of Medical Physiology. Saunders. States of America.
9. Wilson, Ross (2014). Anatomy and Physiology in Health and Illness. Reed Elsevier India Private Limited. NewDelhi.
10. Murugesh.N(2011). Anatomy and Physiology. Sathya Publishers. Madurai
11. Chaudhri, K. (1993). Concise Medical Physiology, New Central Book Agency Ltd., Calcutta.
12. https://egyankosh.ac.in/handle/123456789/81726
13. https://tripurauniv.ac.in/
14. https://nwtc.libguides.com/
15. https://palmbeachstate.libguides.com/

COURSE OUTCOMES:

- Outline composition and functions of blood
- Interpret anatomy and physiology of circulatory and respiratory system
- Discuss regulation of digestive and excretory system
- Relate structure and functions of endocrine and reproduction system
- Explain the structure, functions of nervous system and sense organs

*****

First Year **FIRST ALLIED PRACTICAL I** **Semester : I & II**

HUMAN PHYSIOLOGY

Code: **(Practical)** **Credit: 2**

COURSE OBJECTIVES: To enable the students to

- To acquire knowledge on cellular arrangements and blood components.
- To learn methods to be adopted for the measurement of various blood parameters

PRACTICALS:

1. Histology of Tissues – Columnar, cubical, ciliated, squamous, stratified squamous.
2. Microscopic structure of organs – lungs, artery, vein, stomach, ovary, testis, uterus, pancreas.
3. Histology of muscles – cardiac, striated, non –striated
4. Estimation of Haemoglobin, Bleeding time, Clotting time
5. Measurement of Blood pressure using Sphygmomanometer.
6. Determination of Pulse rate using Pulsoximeter.
7. Blood smear preparation and staining procedure
8. Determination of Bloodgroup and Rh factor.
9. Enumeration of Red blood cells.
10. Enumeration of White blood cells.
11. Demonstration of differential count of leucocyte.

REFERENCES:

1. G.K.Pal and Parvati Pal (2016). Textbook of practical physiology. Universities press.(India) private limited.
2. Sembulingam, K. (2000). Essentials of Medical Physiology. Jaypee Brothers Medical Publishers (P) Ltd. New Delhi.
3. Chatterjee C.C (2004). Human Physiology Volume I. Medical Allied Agency.Kolkata
4. Saradha Subrahmanyam and K. Madhavan kutty (2020).Text book of Human Physiology. S.Chand Publication.
5. Gillian Pocock, Christopher D. Richards, David A. Richards (2018). Human Physiology.(5th ed) Oxford University Press
6. Lauralee Sherwood (2015).Human Physiology: Cells to systems. Cengage Learning.

COURSE OUTCOMES:

- Identify cells present in the body
- Describe cellular arrangement in tissues and organs
- Articulate the methods to be adapted for the measurement of various blood parameters
- Explain cellular arrangement in tissues and organs
- Appraise number of cells present in blood.

*****

First Year **CORE COURSE II** **Semester : II**

PRINCIPLES OF NUTRITION

Code: **(Theory)** **Credit: 5**

COURSE OBJECTIVES: To enable the students to

- Understand role of macro and micro nutrient relevant to human health.
- Introduce composition of various food groups.
- Gain knowledge on physiological role, requirement and deficiency conditions of macro and micro nutrient.
- Learn to calculate energy expenditure of humans.
- Know the importance of water to maintain homeostasis of human body.

UNIT - I INTRODUCTION TO NUTRITION:

Definition of nutrition, health, nutritional status and malnutrition. Inter-relationship between health and nutrition.
RDA– Definition, factors affecting RDA, general principles of deriving RDA, Determination of RDA of different nutrients.

UNIT - II CARBOHYDRATES AND ENERGY:

Carbohydrates – Definition, nutritional classification, functions, RDA, sources and deficiency and excess effects. Dietary Fibre – definition, Classification, components of dietary fibre, physiological and metabolic effect, role of fibre in prevention of diseases, RDA and sources.

Energy –Forms of energy, units of measurement, determination of energy value of food, total energy requirement, energy requirements during work, thermic effect of food. Basal Metabolic Rate – Factors affecting Basal metabolic rate,

UNIT - III PROTEINS AND LIPIDS:

Proteins – Definition, nutritional classification of proteins and amino acids, functions of proteins and amino acids, RDA, sources, and deficiency and excess. Evaluation of protein quality.(PER, BV, NEU, CS)

Lipids – Definition, nutritional classification of lipids, functions, RDA, sources. Essential fatty acids – Definition, functions, sources, deficiency and excess effects, omega fatty acids-functions and food sources.

UNIT - IV MICRONUTRIENTS:

Vitamins - Fat Soluble Vitamins (A, D, E &K) - Functions, RDA, sources, deficiency and excess. Water Soluble Vitamins (B&C) - Functions, RDA, sources, deficiency and excess.

Minerals - Macro Minerals (Calcium, Phosphorus, Potassium, Sodium) - Functions, RDA, sources, deficiency and excess effects.
Micro Minerals (Iron, Iodine, Fluorine) - Functions, RDA, sources, deficiency and excess effects

UNIT – V WATER AND NUTRIENT INTERRELATIONSHIP:

Definition, distribution of water, function, requirements, sources, water balance, maintenance of water balance, distribution of electrolytes, maintenance of electrolyte balance.
Macronutrients and vitamin interrelationship

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Determine energy requirements of any five individuals by factorial approach method. Record clinical symptoms of any one vitamin deficiency among the community.

REFERENCES:

1. Raheena Begum M (2009). Textbook of Foods. Nutrition and Dietetics Sterling Publishers, New Delhi
2. Mahtab S. Bamji (2017). Textbook of Human Nutrition. Oxford & IBH Publishing Co Pvt Ltd
3. Bogert, J.G.V. Briggs, D.H. Calloway (1985). Nutrition and physical fitness. (11th ed) W.B. Saunders Co., Philadelphia. London. Toranto
4. Wardlaw, G.M. Insel, P.H. (1990) Perspectives in Nutrition. Times Mirror / Mosby College Publishing Co. St. Louis. Toronto. Boston.
5. William, S.R. (1985). Nutrition and Diet Therapy. (5th ed) Mosbey Co. St. Louis.
6. M. Swaminathan (1993). Principles of Nutrition and Dietetics. Bappco 88. Mysore Road. Bangalore.
7. Maurice E. Shils, James A. Olson, Moshe Shike (1994). Modern Nutrition in health and disease.Vol. I & II (8th ed) febiger Philadelphia. A waverly Company.
8. Martin Eastwood (2013). Principles of Human Nutrition Wiley Publishing
9. Raheena Begum M (2009). Textbook of Foods. Nutrition and Dietetics Sterling Publishers, New Delhi
10. Mahtab S. Bamji (2017). Textbook of Human Nutrition. Oxford & IBH Publishing Co Pvt Ltd.
11. Mahan Kathleen L, Sylvia Escott Stump (2001). Krause's, Food nutrition and Therapy, W.B. Saunders Co.
12. https://www.anme.com.mx/libros/Principles%20of%20Human%20Nutrition.pdf
13. https://egyankosh.ac.in/bitstream/123456789/333
14. https://www.anme.com.mx/libros/Principles%20of%20Human%20Nutrition.pdf
15. https://open.umn.edu/opentextbooks/textbooks/622

COURSE OUTCOMES:

- Illustrate sources, requirements, role and deficiency of macro and micro nutrient
- Explain beneficial effects of macro and micro nutrient on human health.
- Analyze quality of nutrients present in food.
- Describe basal metabolism rate and energy expenditure of humans.
- Relate water and electrolyte balance in human body and the interrelationship of nutrients.

*****

First Year **CORE PRACTICAL II** **Semester : II**

PRINCIPLES OF NUTRITION

Code: **(Practical)** **Credit: 4**

COURSE OBJECTIVES: To enable the students to

- Gain knowledge on calculate nutritive value of Indian foods.
- Know sources of macro and micro nutrient.
- Learn about the analytical methods of nutrients.

PRACTICALS:

1. Plan, prepare and calculate the nutrients of macro nutrient rich dishes of one serving
   a. Energy – High Calorie and Low Calorie
   b. Carbohydrate – High Carbohydrate and Low Carbohydrate
   c. Protein – High Protein and Low Protein
   d. Fat – High Fat and Low Fat
   e. Dietary Fibre – High Fibre and Low Fibre.

2. Plan, prepare and calculate the nutrients of micro nutrient rich dishes of one serving - Vitamins:
   Vitamin A, Vitamin C, Thiamine, Riboflavin, Niacin, Pyridoxine, Folic Acid and Cyanocobalamine.

3. Plan, prepare and calculate the nutrients of micro nutrient rich dishes of one serving - Minerals:
   Calcium, Iron, Zinc, Phosphours, Sodium and Potassium.

4. Demonstration on estimation of nitrogen in food using Kjeldahl method.

5. Demonstration on estimation of total fat in food using Soxhlet method

REFERENCES:

1. Gopalan.C, Rama Sastri.V.B and Balasuramanian.S.C (2016). Nutritive Value of Indian Foods National Institute of Nutrition (ICMR) Hyderabad.
2. Food Safety and Standards Authority of India (2015) Manual of Analysis of Foods Food Safety and Standards Authority of India.
3. Thangam E. Philip (2015). Modern Cookery for Teaching and the Trade, Volume-I Orient Blackswan Private Limited. New Delhi.
4. Varley, H., Gowenlak, A.H. and Hill, M. Practical Clinical Biochemistry, William Itinmaon Medical Books, London, 2000.
5. Oser, B.L., Harke's Physiological Chemistry XIV Edition Tata McGraw Hill Publishing Company Ltd., Bombay, 2001.

COURSE OUTCOMES:

- State the comparison of measurement of raw and cooked volume of food
- Explain the food sources of macro and micro nutrient
- Give examples of macro and micro nutrient rich recipe
- Interpret the nutrient content of the recipe.
- Apply the procedure involved in estimation of fibre, fat and nitrogen.

First Year **FIRST ALLIED COURSE II** **Semester II**

FUNDAMENTALS OF BIOCHEMISTRY

Code: **(THEORY)** **Credit: 4**

COURSE OBJECTIVES: To enable the students to

- Review the biological system of energy metabolism.
- Study the chemical/biochemical properties and metabolic pathways of carbohydrates, lipids, and proteins.
- Examine the regulatory mechanisms of macronutrient metabolism and associated signaling pathways.
- Understand the research techniques used in basic biochemistry and nutritional biochemistry research.

UNIT - I CARBOHYDRATE:

Monosaccharides - types, characteristics and properties; disaccharides, oligosaccharides, polysaccharides – biological significance, Carbohydrate metabolism-Metabolic Pathway - Glycolysis, TCA cycle, HMP shunt, Gluconeogenesis from TCA intermediates / amino acids / acetyl-CoA, concept of Glycogenesis and glycogenolysis.

UNIT – II PROTEIN:

Amino acids - classification, structure, properties, Protein structure: peptide linkage, covalent backbone, three-dimensional conformation; quartenary structure of oligomeric proteins. Determination of -N and -C terminal amino acids, Protein functions. Metabolism – Synthesis of protein and metabolism of amino acid

UNIT – III LIPID:

Classification, structure, properties; biological significance. Bioenergetics - electron transport and oxidative phosphorylation, redox potential, high energy compounds, ATP and significance, Lipid metabolism - beta oxidation of fatty acids, Biosynthesis of fatty acids.

UNIT – IV NUCLEOTIDES AND NUCLEIC ACIDS:

Structure of Purine and pyrimidine nucleotides - double helical structure of DNA, biosynthesis and catabolism of purine and pyrimidine nucleotides.

UNIT – V ENZYMES:

Enzymes - Definition, IUPAC classification of enzymes, factors affecting enzyme activity, Line weaver burk plot, Michaelis –Menton model, rate of enzyme activity, Inhibition of enzyme activity – feedback inhibition, allosteric inhibition

UNIT - VI CURRENT CONTOURS (For continuous internal assessment only):

Learn life at the molecular level. Functions of enzyme. Prepare models for Carbohydrate/ Protein metabolism.

REFERENCES:

1. J. L. Jain, Sunjay Jain and Nitin Jain, Fundamentals of Biochemistry Publishers: S. Chand & Co Ltd, 2008.
2. Ambika Shanmugam, Fundamentals of Biochemistry for Medical Students, 7th Edition, Lippincott Williams and Wilkins, 2012.
3. Jeremy M. Berg, John L. Tymoczko, Lubert Stryer, Biochemistry, Palgrave MacMillan; 7th revised international edition,2011
4. Victor Rodwell, David Bender, Kathleen M. Botham, Peter, J.Kennelly, P.Anthony Weil, Harpers Illustrated Biochemistry, McGraw-Hill Education/ Medical; 30 edition,2015
5. DavidL, Nelson, Michael M,Cox, Lehninger's Principles of Biochemistry, W.H. Freeman; 5th edition, 2008.
6. https://labalbaha.files.wordpress.com/2014/04/fundamentals-of-biochemistry.pdf
7. http://www.freebookcentre.net/Chemistry/BioChemistry-Books-Download.html
8. https://agrimoon.com/fundamentals-of-biochemistry-pdf-book/
9. https://biochem.oregonstate.edu/content/biochemistry-free-and-easy

COURSE OUTCOMES:

- Interpret the significance of Carbohydrate metabolism
- Acquire Knowledge on role of protein in metabolism and functions.
- Infer Knowledge on lipid metabolism and biosynthesis of lipids.
- Exemplify Nucleotides and Nucleic Acids
- Understand the role of enzymes in metabolism and clinical conditions.

*****

Second Year **CORE COURSE III** **Semester : III**

FUNDAMENTALS OF HUMAN DEVELOPMENT

Code: **(Theory)** **Credit: 5**

COURSE OBJECTIVES:

- Learn about the characteristics, needs and developmental tasks of different stages in the human life cycle
- Understand the different theoretical frameworks fundamentals
- Learn about the classic human development theories
- Develop professional attitude for working with human beings across life span

UNIT – I BASIC CONCEPTS:

Introduction to Human Development- significance, stages of life span; Growth and Development- meaning, principles, factors influencing growth and development. Methods of child study- projective technique, observation, experimentation, case study (elementary treatment) and Nature- Nurture Controversy

UNIT – II PRE-NATAL DEVELOPMENT AND CHILD BIRTH:

Conception, stages of prenatal development- period of ovum, period of embryo and period of fetus; Signs and symptoms of Pregnancy; Common discomforts and complications of Pregnancy; Factors influencing prenatal development; Maternal mortality- causes and prevention; Child Birth – stages and types; Post-natal care of the mother.

UNIT – III DEVELOPMENT DURING INFANCY:

Period of Infancy- Appearance of the new born: size- physical proportion and physiological functions; sensory abilities of the new born; Low birth weight, premature babies; Apgar test, care of the new born, Immunization. Infant feeding- Breast feeding and its advantages, bottle feeding and supplementary feeding.

UNIT – IV DEVELOPMENT DURING BABYHOOD, CHILDHOOD AND ADOLESCENCE:

Babyhood - Physical, motor, cognitive, language, social, and emotional development during the first two years; Infant mortality- causes and prevention. Early and Late Childhood - Physical, motor, social, emotional, cognitive, moral and language development; developmental tasks; behavior problems and handling the problems; Habit formation- principles and advantages of habit formation. Adolescence - Physical development- pre-pubertal growth, changes in primary and secondary sexual characteristics in boys and girls; mental, social and emotional development. Cognitive Perspectives of Learning: Piaget theory and its application in teaching learning Social-Constructivist Perspectives: Vygotsky‘s theory and its application in teaching learning

UNIT – V DEVELOPMENT DURING EARLY, MIDDLE AND LATE ADULTHOOD:

Early adulthood- Characteristics of early adulthood; developmental tasks; Marital adjustments; vocational adjustments. Parenthood - Preparation and Adjustment. Middle adulthood - Characteristics; developmental tasks; adjustment to physical changes, social adjustments and health problems. Late adulthood - Characteristics; developmental tasks;

adjustment to physical changes, adjustments to retirement, adjustment to changes in Family life; living arrangements health problems.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Browse - Assisted Reproductive Technology (ART), IVF (In Vitro fertilization) or test tube baby, ICSI (Intra Cytoplasmic Sperm Injection), GIFT (Gamete Intra Fallopian Transfer), AI (Artificial Insemination).

REFERENCES:

1. Suriakanthi. A (2009). Child Development – An Introduction. Gandhigram: Kavitha Publications
2. Hurlock, E . B. (2007) Development Psychology a Life Span Approach. New Delhi Tata Mc Graw Hill Publishing Company Ltd.
3. Nanda V.K., (1998): Principles of Child Development, New Delhi: Anmol
4. Rajammal P. Devadas and Jaya N. Muthu (2002). A Text Book of Child Development, New Delhi: Macmillan Publishers.
5. Hurlock, E.B., (2004) Child Growth and Development. New York: Tata Mc.Graw Hill Company.
6. Hurlock, E. B., (1973). Adolescent Development. Tjokyo: Mc graw Hill Rogakush Limited.
7. Papalia. E. Diane et al (2005). Human Development (9th Edn). New Delhi: Tata Mcgraw Hill.
8. Jerry. J. Bigmer (1983) Human Development a Life Span Approach. NewYork: Macmillan Publishing Co., Inc.
9. https://online.maryville.edu/online-bachelors-degrees/human-development-and-family-studies/resources/stages-of-human-development/#stages-human-development
10. https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=8x0nJkh/R0vHkX1U70Z/CQ==

COURSE OUTCOMES:

- Describe the need and importance of studying human growth and development across life span.
- Explain prenatal development and child birth
- Showcase the characteristics, needs and developmental tasks of different stages from conception to adolescence
- Explain the broad theoretical perspectives of learning
- Describe the characteristics, problems and issues related to different stages of adulthood

*****

Second Year **CORE PRACTICAL III** **Semester : III**

FUNDAMENTALS OF HUMAN DEVELOPMENT

Code: **(Practical)** **Credit:4**

PRACTICALS:

1. Preparation of an album/video content on developmental milestones of children
2. Preparation of poster/ booklet/leaflet on Human Development course
3. Visit to Maternity hospital to observe child birth and neonatal reflexes – write a report
4. Visit to ICDS centre
5. Event – World Breast Feeding Week
6. Collection of newspaper and magazine articles as well as internet searches on behavioural problems of school children – write a report.
7. Self assessment of peer group interactions and pubertal changes.
8. Documentation of parenting styles.
9. Interaction with middle aged women on their problems.
10. Assess the problems of adolescents

REFERENCES:

1. Suriakanthi. A (2009), Child Development – An Introduction. Gandhigram: Kavitha Publications
2. Hurlock, E. B. (2007), Development Psychology a Life Span Approach. New Delhi Tata Mc Graw Hill Publishing Company Ltd.
3. Nanda V.K., (1998), Principles of Child Development, New Delhi: Anmol
4. Rajammal P. Devadas and Jaya N. Muthu (2002), A Text Book of Child Development, New Delhi: Macmillan Publishers.
5. Hurlock, E.B. (2004) Child Growth and Development. New York: Tata Mc.Graw Hill Company.
6. Hurlock, E . B. (1973). Adolescent Development. Tjokyo: Mc graw Hill Rogakush Limited.
7. Papalia. E.Diane et al (2005). Human Development (9th Edn). New Delhi: Tata Mcgraw Hill.
8. Jerry.J.Bigmer (1983) Human Development a Life Span Approach. NewYork: Macmillan Publishing Co., Inc.
9. https://online.maryville.edu/online-bachelors-degrees/human-development-and-family-studies/resources/stages-of-human-development/#stages-human-development
10. https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=8x0nJkh/R0vHkX1U70Z/CQ

*****

Year : II **SECOND ALLIED COURSE-I** **Semester : III**

EARLY CHILDHOOD CARE AND EDUCATION

Code: **(Theory)** **Credit: 4**

COURSE OBJECTIVES:

- Understand the significance of early childhood years and intervention programs for early childhood development.
- Develop insight in to the current programs and policies in ECCE.
- Acquaint with indigenous (Indian) models of Early Childhood Education and know the current early childhood issues.
- To learn about different curriculum models and pedagogical approaches in early childhood education.

UNIT – I CONCEPT AND SIGNIFICANCE OF ECCE:

Early Childhood Care and Education (ECCE)- Meaning for "Child", "Childhood", "Early Childhood Care and Education", importance, significance and objectives of ECCE, types of ECCE programmes- play centres, day care, Montessori, kindergarten, balwadi, anganwadi, mobile crèche and play group.

UNIT – II POLICIES AND PROGRAMMES IN ECCE IN INDIA:

ECCE Policy Framework: National Policy on Education (2020), Article 45 in Indian Constitution and 86thAmendment, National Curriculum Framework (2020), and ECCE in Right to Education (2010). India Newborn Action Plan (INAP), 2014, Integrated Child Development Services (ICDS), Rashtriya Bal Swasthya Karyakram (RBSK), Commitment to International Convention- Education for All (EFA), Sustainable Development Goals (SDGs), and National Policy on ECCE (2013); Programmes and provisions in ECCE in Indian: Public Sector- ICDS, Rajiv Gandhi Crèche Scheme, ECCE in SSA, Private sector provisions in ECCE and Voluntary Sector initiatives in ECCE

UNIT – III ORGANIZATIONAL SETUP AND MATERIAL MANAGEMENT:

Physical arrangements needed for an ideal ECCE centre– Place/Building/Space– indoor and outdoor, amenities and facilities for indoor and outdoor, garden, play ground, storage. Equipments and materials required for play and learning- Selection, care and use of equipments; Equipments needed for urban and rural preschools, indigenous and low cost teaching materials.

UNIT – IV ACTIVITIES FOR YOUNG CHILDREN IN ECCE:

Age/developmentally appropriate activities, art and creative activities, music and rhythmic activities, mathematic, language and communication activities, nature and science activities, 3'R's- reading readiness, writing readiness and readiness for arithmetic, literature for children, indoor and outdoor play activities- role of teacher in planning and implementing the activities.

UNIT – V ORGANIZATIONAL MANAGEMENT AND COMMUNITY INVOLVEMENT EVALUATION OF ECCE PROGRAMMES:

Infrastructure, safety, ECCE professionals- competence, skill, methodology, working with parents and community for continuity of home-school interactions and evaluation of pre-

school participation. Theoritical perspectives and management process of ECCE centres Documentation and Financial Management- importance and principles of record keeping, types of records; financial allocations and budgetary considerations, budget making and resource generation avenues.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Identification techniques of developmental delays in children.

REFERENCES:

1. Jagannath Mohanthy and Bhagyadhar Mohanthy,(2000),“ Early Childhood Care and Education”, Deep and Deep Publications PVT limited, New Delhi
2. Billman, J., & Sherman, J.A. (1996). Observation & Participation in Early Childhood Settings, A Practicum Guide. New York: Allyn & Bacon, A simon& Schuster Company.
3. Aggarwal, J. C. (2007). Early Childhood Care and Education: Principles and Practices. Shipra: New Delhi.
4. Arni, K. and Wolf G. (1999). Child Art with Everyday Materials. TARA Publishing.
5. Muralidharan, R. and Banerji.V. (1989) A Guide Booklet of Nursery Teachers, New Delhi : NCERT.
6. Morrison, G. S. (2003). Fundamentals of early childhood education. Merrill/Prentice Hall:
7. Virginia Singh, A. (1995). Playing to Learn: A training manual for Early Childhood Education. M. S. Swaminathan Research Foundation. Swaminathan, M. (1998). The First five Years. Sage Publications
8. https://wcd.nic.in/sites/default/files/national_ecce_curr_framework_final_03022014%20%282%29.pdf
9. https://www.education.gov.in/shikshakparv/Infographics/ECCE_en.pdf
10. https://onlinecourses.swayam2.ac.in/cec19_mg34/preview
11. https://digital.nios.ac.in/content/376en/4.pdf

COURSE OUTCOMES:

- Explicate the importance of early childhood years need for intervention programs for early childhood development.
- Explain the current programs and policies in ECCE.
- Categorize various indigenous (Indian) models of Early Childhood Education and apply it to understand the current early childhood research, theoretical trends and issues.
- Evaluate curriculum models used in early childhood education.
- Able to manage a ECCE centre.

*****

Second Year **SECOND ALLIED PRACTICAL** **Semester : III & IV**

EARLY CHILDHOOD CARE AND EDUCATION

Code: **(Practical)** **Credit:2**

PRACTICALS:

1. Visit to nursery schools, day care, crèches, anganwadi for observation of preschool programme and writing report.
2. Collection of newspaper and magazine articles as well as internet searches on play equipments, address of production units and suppliers – Prepare a file.Develop low cost and indigenous play materials
3. Organise workshops in any two of the following
   - Understanding childhood nutrition and health
   - Developing work sheets to teach concepts
   - Enhancing social and language skills
   - Music, movement and drama for children
4. Prepare a Scrap Book/picture book/ resource book for toddlers
5. Identify, plan and record activities and methods of playful interactions to foster development in children birth –two years.
6. Identify, plan and record activities and methods of playful interactions to foster development in children two -six years.
7. Curriculum planning and space design
8. Methods and tools to assess progress of children and programme
9. Prepare a file of activities related to Nature and Science, Maths and language, Games for cognitive development.

REFERENCES:

1. Jagannath Mohanthy and Bhagyadhar Mohanthy, (2000),“ Early Childhood Care and Education”, Deep and Deep Publications PVT limited, New Delhi
2. Billman, J., & Sherman, J.A. (1996). Observation & Participation in Early Childhood Settings, A Practicum Guide. New York: Allyn & Bacon, A simon& Schuster Company.
3. Aggarwal, J. C. (2007). Early Childhood Care and Education: Principles and Practices. Shipra: New Delhi.
4. Arni, K. and Wolf G. (1999). Child Art with Everyday Materials. TARA Publishing.
5. Muralidharan, R. and Banerji.V. (1989) A Guide Booklet of Nursery Teachers, New Delhi: NCERT.
6. Morrison, G. S. (2003). Fundamentals of early childhood education. Merrill/Prentice Hall:
7. Virginia Singh, A. (1995). Playing to Learn: A training manual for Early Childhood Education. M. S. Swaminathan Research Foundation. Swaminathan, M. (1998). The First five Years. Sage Publications
8. https://wcd.nic.in/sites/default/files/national_ecce_curr_framework_final_03022014%20%282%29.pdf
9. https://www.education.gov.in/shikshakparv/Infographics/ECCE_en.pdf
10. https://onlinecourses.swayam2.ac.in/cec19_mg34/preview
11. https://digital.nios.ac.in/content/376en/4.pdf

*****

Second Year **NON MAJOR ELECTIVE I** **Semester III**

BAKERY AND CONFECTIONARY

(Theory)

Code **Credit: 2**

COURSE OBJECTIVES: To enable the students to

- Understand the principles& methods of baking.
- Acquire basic skills in baking and confectionery.
- Understand the role of various food components in baking and the interaction of the elementsused for baking.
- Expand their knowledge related to the art of decoration of baked foods and confectioneryitems.

UNIT - I BASIC BAKING & EQUIPMENTS:

Baking: Meaning, process and scientific principles involved in baking, Classification of baked products. Basic plan and layout of a bakery unit. Role of major and minor equipments in bakery unit.

UNIT – II BAKING INGREDIENTS:

Ingredients used in baking - Flour, Water, Yeast, Sugar, Shortening, Milk, Egg, Butter, Salt, Leavening Agents,.

Leavening agents: Definition and classification- physical; chemical-baking powder and its types, baking soda; biological- yeast- types and role in baking.

UNIT – III BREAD & CAKES :

Bread - Ingredients, steps in bread making process, processing methods, characteristics of good bread (external and internal).

Cakes - Ingredients, types, cake making methods, test for doneness, characteristics of good cake (external and internal. Icing: Meaning, types, ingredients used and preparation guidelines.

UNIT – IV COOKIES & PASTRIES:

Cookies - Characteristics, preparation methods and problems in cookie making.
Biscuits - Steps involved in biscuit making.
Pastries - Types and method of preparation.

UNIT – V SUGAR CONFECTIONARIES:

Sugar confectionery – Role of sugar in confectionary preparation, Candies –Fondant, toffee, fudge, marshmallows, gums, jellies, chocolates – properties of these candies. Indian confectionary / Sweets – Types, preparation, ingredients and their role in preparation.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Visit to the bakery unit. Preparation of a Project report for starting a bakery unit

REFERENCE BOOKS:

1. Avantina Sharma, 2019. Textbook of Food Science and Technology. 3rd edition. CBS publishers, ISBN-10: 9789386478009, ISBN-13:978-9386478009.
2. Dubey SC. 2002. Basic Baking. Society of Indian Bakers, New Delhi.
3. John Kingslee.2006. A professional text book to Bakery and Confectionary. New Age International Pvt Limited Publisher, New Delhi.
4. Uttam K. Singh. 2011. Theory of Bakery and Confectionary An operational approach. Kanishka Publishers and Distributors, New Delhi.
5. Yogambal Ashokkumar. 2012. Bakery and Confectionary. PHI publication.
6. John Kingslee. 2014. A professional text to Bakery and Confectionary. New Age International (P) Limited.
7. Lilian Hiagl and Meyer.2004. Food chemistry. CBS publishers and Distributors.
8. Shakunthala Manay N and Shadak sharaswamy M. 2005. Food Facts and Principles, New AgeInternational (P) Ltd Publishers
9. Neelam Khetarpaul, Raj Bala Grewal and Sudesh Jood.
10. 2013. Bakery science and cerealtechnology. Daya publishing house.
11. Vijaya Khader. 2001.Text book of Food Science and Technology.
12. Indian Council ofAgricultural Research, New Delhi.
13. https://www.sihmbalangir.org/upload/Cakes%20&%20Pastries%20Book.pdf
14. https://www.cookingandme.com/2010/05/31/types-of-ovens-how-tochoose-oven/
15. https://www.chinimandi.com/types-of-sugar/
16. http://penyrheolcomp.net/technology/wpcontent/uploads/sites/2/2014/06/Cake-Making-

COURSE OUTCOMES:

- Explain the properties and functions of various ingredients in bakery science.
- Understand the role and use of equipments in the production of baked foods.
- Apply, prepare variety of doughs, batters, and fillings for baking with a sound understanding of mixing methods and baking techniques.
- Classify and prepare basic confectionary products.
- Infer knowledge on role of sugar in confectionaries.

*****

Second Year **CORE COURSE IV** **Semester : IV**

TEXTILE AND CLOTHING

Code: **(Theory)** **Credit: 5**

COURSE OBJECTIVES:

- Obtain a broad understanding of textiles and technical terms involved in textiles.
- Get acquainted with the properties and uses of various textile fibers.
- Develop the skills for identification of fibers and fabrics(yarns, weaves and finishes)
- Develop skills in making wise selection of textiles and acquire knowledge on laundry and stain removal.
- Learn the methods of dyeing, printing, and finishing of fabrics.

UNIT – I INTRODUCTION TO TEXTILES:

Definition of textile fibers, classification of textile fibers, basic unit and polymer bonds in textile fiber, physical and chemical properties of fibers. Fibers: Natural fibers(morphology and polymer system, production, properties); Cellulosic (Cotton, Jute); Protein (Silk, Wool); Man-made fibers (manufacturing process, chemical spinning, properties). Viscose Rayon: Acetate Rayon, nylon, polyester, acrylic, elastomeric.

UNIT – II YARN AND FABRIC YARNS:

Classification of yarns: simple, ply and cord; types of yarn: textured and novelty; twist in yarn: "s" and "z", number of twist; properties of yarn: strength, extension, fineness, length, diameter, composition; woven fabrics: looms and its part. Classification of basic weaves: plain, twill, satin; novelty weaves: pile, Leno-Gauze, honeycomb; Knitted fabrics: types: hand knitting, machine knitting and nonwoven fabrics.

UNIT – III COLORATION, FINISHING OF TEXTILES DYES AND CARE OF TEXTILES:

Dyes: classification, components of dyeing and its relation to dye material - auxiliaries, temperature and dye bath: Printing: styles of printing; modern methods of printing; pre-preparation for printing (printing paste, printing table); Finishing: basic finishes- singeing, scouring, bleaching, sizing, weighting, degumming, mercerizing, sanforizing and calendaring; special finishes. Laundry, Storage and Care of Textiles: Introduction, types of water, soaps, detergents methods and care during laundering of different textiles.

UNIT – IV INTRODUCTION TO CLOTHING CONSTRUCTION:

Anthropometric Measurements: Introduction and importance; instruments used for anthropometric measurements; Standardization and size charts: importance and use of size charts; size charts of child, woman and man; factors affecting selection of fabrics- social factors, economic factors, physiological factors and environmental factors. Design Components - Elements and principles of design- Introduction, basic elements of design, basic principles of design, relation between elements and principles of design to the clothing and fashion; color, line and texture in relation to: age, season, occasion, figure and complexion.

UNIT – V SEWING MACHINES:

Types of sewing machines - Mechanical sewing machine, electronic sewing machine, computerized or automated sewing machine and embroidery machine; parts of sewing machine. Tools and equipment used for clothing construction- measuring tool, drafting tool, marking tool, cutting tool, stitching tool, pressing tool, needles, threads and their relation to fabric; types of needles for hand and machine sewing; selection of right thread, needle for the fabric to be sewn.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Blended fabric, Natural dyes – scrap book.

REFERENCES:

1. Corbman, B. P and Potter, M. D. (1983) Textiles fiber to fabric, International Edition, Mc Graw hill book Co, New York.
2. Dantyagi, S. (1996).Fundamentals of Textiles and their Care. India: Orient Black swan Private Limited.
3. Deepali Rastogi and Sheetal Chopra (2017) Textiles Science, Direct Black swan private ltd, Hyderabad.
4. Practical Clothing Construction – Part I and II, Mary Mathews, Cosmic Press, Chennai (1986)
5. Holman, Gillian. (1997), Pattern Cutting Made Easy, BSP.
1. Booth, J.E. (1996). Principles of Textile Testing. New Delhi: CBS Publishers & Distributors Pvt. Ltd.
2. Hollen, R. N., Saddler, J., & Langford, A. (1979).Textiles. Macmillan Publishers.
3. Joseph, M. (1992), Introductory Textile Science. Sixth edition, California: Harcourt College, Publishers.
4. Madhulika, P. (2013). Weaving. New Delhi: Random Publishing.
5. Needles, L.H. (1986). Textile Fibers, Dyes, Finishes, and Processes. USA, New Jersey: Noyes publications.
6. Rastogi, D., & Chopra, S. (2017). Textile Science. India: Orient Blackswan Private Limited.
7. Sekhri, S. (2011).Textbook of Fabric Science: Fundamentals to Finishing. India: PHI Learning Pvt. Ltd.

8. Tyagi, A. (2016).Handbook of Fashion and Textile Design. New Delhi: Sonali publication.
9. Cream, Penelope, (1996), The Complete Book of Sewing - A Practical Step by Step Guide to Sewing Techniques, DK Publishing Book, New York.
1. https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=8x0nJkh/R0vHkX1U70Z/CQ==
2. https://www.gutenberg.org/ebooks/21534
3. https://textilestudycenter.com/textile-books-free-donwload/

COURSE OUTCOMES:

- Develop an understanding of concepts and basics of textiles and define the key textile terms.
- Develop critical understanding of the techniques of yarn and fabric manufacture.
- Identify the fibres, yarn and fabrics for its appropriate use.
- Able to construct garments
- Explain sewing machine and skilled to use

*****

Second Year **CORE PRACTICAL-IV** **Semester: IV**

TEXTILE AND CLOTHING

Code: **(Practical)** **Credit: 4**

1. Fiber identification: identification of natural and manmade fibers by following three methods i.e. microscopic test, burning test and solubility test.
2. Demonstration of yarn: detail study of the ply of yarn, count of yarn using beesley yarn count balance, twist by twist tester, crimp by crimp tester and strength of the yarn by single yarn or lea strength tester.
3. Dyeing: dyeing of yarn/fabric with different classes of dyes
   a. Dyeing of cotton yarn and fabric with direct dyes
   b. Dyeing of silk, wool and nylon yarn and fabrics with basic and acid dyes.
   c. Dyeing of polyester yarn and fabric with disperse dyes.
4. Printing of fabrics using:
   i. Direct style - block, stencil and screen
   ii. Resist style - Tie &Dye, Batik
5. Care of Textiles
   i. Stain removal
   ii. Mending of textiles
   iii. Starching using different types of starches
6. Preparation of fabric for cutting
   a. Preshrinking
   b. Identification and straightening of Grain.
7. Taking measurements
8. Tools and Equipment used in Garment Construction: Squares and Scales, French curves – for armhole, necklines etc.
9. Basic hand stitches- basting, back stitch, hemming visible/invisible, lock stitch.
10. Drafting on paper and transferring pattern markings from paper.

REFERENCES:

1. Corbman, B. P and Potter, M. D. (1983) Textiles fiber to fabric, International Edition, Mc Grawhill book Co, New York.
2. Practical cutting and tailoring part II Eshwasri Anwahi, Lakhraj Hans R.B Publications, Delhi 4. Advanced.
3. Zarapker System of Cutting- Zarapker. K. R, Navneet Publications ltd.
4. Practical Clothing Construction – Part I and II, Mary Mathews, Cosmic Press, Chennai (1986)
5. Holman, Gillian. (1997), Pattern Cutting Made Easy, BSP.
6. Joseph, M. (1992), Introductory Textile Science. Sixth edition, California: Harcourt College, Publishers.
7. Madhulika, P. (2013). Weaving. New Delhi: Random Publishing.
8. Needles, L.H. (1986). Textile Fibers, Dyes, Finishes, and Processes. USA, New Jersey: Noyes publications.
9. Sekhri, S. (2011).Textbook of Fabric Science: Fundamentals to Finishing. India: PHI Learning Pvt. Ltd.
10. Tyagi, A. (2016).Handbook of Fashion and Textile Design. New Delhi: Sonali publication.
11. Cream, Penelope.,(1996), The Complete Book of Sewing - A Practical Step by Step Guide to Sewing Techniques, DK Publishing Book, New York.
12. https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=8x0nJkh/R0vHkX1U70Z/CQ==

*****

Second Year **SECOND ALLIED COURSE –II** **Semester : IV**

GARMENT EMBELLISHMENT TECHNIQUES

Code: **(Theory)** **Credit:4**

OBJECTIVES: To enable the students to

- Impart knowledge on various embroideries stitches
- Gain practical knowledge on different embroideries of India
- Learn different techniques of garment enrichment
- Know the special techniques for garment enrichment

UNIT – I PREPARATION OF SAMPLES:

Embroidery: Definition, classification, basic hand embroidery stitches- chain stitch, running, back, satin, stem, cross, laisy daisy, herring bone, feather stitch; knotted stitch- french knot, bullion knot, material, motifs, colour combination.

UNIT – II INTRODUCTION OF TRADITIONAL INDIAN EMBROIDERY:

History, types of embroidery of different state of India – Kutch, Kathiwar, Pulkari, Kantha, Kasuthi, Chambarumal, Gold &Silver embroidery, Zardosi, Chikankari, Kashida. Tribal Embroidery- Introduction, types: Nagaland, Manipuri, Lambadi, Thoda with their traditional influence, symbolism, techniques, fabric, stitches and colour combination.

UNIT – III PATCH WORK:

History, structure, types of patch work: traditional patchwork, crazy patchwork, crochet patchwork, Japanese patchwork; techniques of patchwork: qucik squares, water colour, strip to the strip, log cabin, magic triangle, quilting corners, checkboard, Russian square, honeycomb, applique, quilting, cut work, eyelet work, shadow work.

UNIT – IV CROCHET:

Introduction, tools, material, techniques and types; Knitting: basic, texture, rib, Diagonal, lace pattern, cable pattern, cross; Knotted: definition, types- bend, binding, coil knot, decorative knot, hitch, lashing, loop, plait, slip, slipped, seizing, sennit, splice, stopper and whipping.

UNIT –V SPECIAL TECHNIQUES:

Braiding, hooking, smocking- definition; smocking types- cable stitch, stem stitch, outline stitch, cable flowerette, wave stitch, honeycomb stitch, surface honeycomb stitch, trellis stitch, vandyke stitch, bullion stitch, bead and sequins, fringes, mirror work. Fabric painting- using fabric colours, glitters and pastes.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Scrapbook on embroidery and embellishment

REFERENCES:

1. Shaylaja; D. Naik, Traditional Embroideries of India – APH corp, New Delhi 1996
2. Sheila paine: Embroidered Textile- Thames & Hudson Ltd. 1990
3. Textiles of the Arts and Crafts Movement By Maire Loughran
4. Selection & Personal Appearance – a guide for the consumer, Upper Saddle River, Prentice Hall Inc., 2000.
5. Mabel D.E. & A.K. Clothing for Moderns, 3rd edition, New York: Mac Million, publications.
6. https://www.youtube.com/watch?v=4tboUqTV41U
7. https://youtu.be/foELmSWaERE
8. https://mymodernmet.com/what-is-embroidery-definition/

*****

Second Year **NON MAJOR ELECTIVE II** **Semester IV**

FOOD PRESERVATION

Code **(THEORY)** **Credit: 2**

COURSE OBJECTIVES:

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

UNIT – I CONCEPT OF FOOD PRESERVATION:

Importance of Food Preservation, Review of the basic Principles behind food preservation: Asepsis, removal, anaerobic conditions: Types of spoilages and methods of prevention. Preservation of fruits as Sugar concentrates, Jam, Jelly, Marmalade, candies, crystallized or glazed fruits, Factors affecting jelly formation.

UNIT – II PRESERVATION BY HIGH TEMPERATURE:

Preservation by high temperature - blanching, pasteurization, sterilization ,canning and UHT processing, microwave heating, baking, roasting and frying. Retort processing of Ready to Eat (RTE) products.

UNIT – III PRESERVATION BY LOW TEMPERATURE:

Preservations by low temperature **-** Refrigeration – Principles of working system, Freezing – Principles, Methods of freezing- Advantages and disadvantages. Guidelines for food freezing.

UNIT – IV PRESERVATION BY DRYING AND RADIATION:

Preservation by drying, concentration and evaporation: Principles, methods, Advantages and disadvantages. Food Irradiation - Principles, Sources of radiation, Units of radiation, Applications of irradiation in food preservation.

UNIT – V PRESERVATION BYUSING CHEMICALS:

Preservation by using chemicals-Class I preservatives and Class II preservatives Developed preservatives. Preservation by using chemicals-Class I preservatives and Class II preservatives Developed preservatives. Food additives - Definition, types and functions, permissible limits and safety aspects.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Visit to food Preservation Industry. Preparation of a Project report for Preservation Techniques.

REFERENCES:

1. Dearosier NW. 1975. The Technology of Food preservation. AVU Publishing co., WestPort, Connecticut.
2. DubeySC. 2017. Basic Baking. 5th Edition, Chanakya Mudrak Pvt. Ltd., New Delhi.
3. Siddappa GG, Tandon GN.1967. Preservation of fruits and vegetables. ICAR, New Delhi.
4. Peckham CG. 1969. Foundation of food preparation. Freeland-Graves, JeanneHimich, Sixth Edition
5. Potter NN. 1973. Food Science. AVI Publishing Co., West Port, Connecticut.
6. Faridi F. 2004. Dough Rheology and Baked Product Texture. CBS Publication, New Delhi.
7. Manay S and Shanaksharaswami M. 2014.Foods: Facts and Principles. New AgePublishers, New Delhi.
8. Maria Parloa, 2009. Canned fruit preserves and jellies: Household methods of preparation.US Department of Agriculture, Washington.
9. Rainact AL. 2013. Basic Food Preparation .Complete Manual, 3rd Edition, OrientLongman, Private limited, Mumbai.
10. Samuel A, Martz, 2004. Bakery Technology and Engineering. PAN-TECHI InternationalIncorporated, Private limited, Madras.
11. Shafiur, Rahman, M. 2007, Handbook of Food Preservation. 2 nd edition, CRC press, NewDelhi.
12. http://labgraos.com.br/manager/uploads/arquivo/cap--26-handbook-of-food-preservation-pdf-
13. http://www.uop.edu.pk/ocontents/Lecture%20no%202.pdf
14. https://www.canr.msu.edu/smprv/uploads/files/Safe_Practices_for_Food_Processes_Chpt._3
15. _Factors_that_Influence_Microbial_Growth.pdf
16. https://www.medicalnewstoday.com/articles/318630
17. https://www.ifst.org/resources/information-statements/food-irradiation

COURSE OUTCOMES:

- Know the principles of preservation behind the methods of preservation and understand the stages of sugar cookery, quality of pectin and acidity in the development of preserved food products.
- Explore the principles of preservation by use of low temperature.
- Explore the principles of preservation by use of high temperature.
- Acquire skills to formulate dehydrated food based products.
- Develop skills for setting up a bakery unit and to enhance entrepreneurial skills in bakeryand confectionery.

*****

Third Year **CORE COURSE V** **Semester: V**

FAMILY RESOURCE MANAGEMENT

Code: **(Theory)** **Credit: 5**

COURSE OBJECTIVES:

- understand the purpose of managing resources in daily life and efficiently manage the resources available
- identify goals, values and standards
- set goals that are practical in the management of resources
- understand the need of Ergonomics in management of resources

UNIT – I INTRODUCTION TO RESOURCE MANAGEMENT IN FAMILY SETTINGS:

Introduction to home management- meaning, definitions, need, philosophy and scope of family resource management. Approaches to resource management – family resources Vs home management. Ethics in management of resources – essential qualities for success. Motivating factors in management – Values, Standards and Goals – meaning, types/ classification and influences. Theories of Motivation- Maslow's hierarchy of needs theory; human wants – nature and role in management

UNIT – II RESOURCES:

Classification and characteristics of family resources. Factors affecting utilization of family resources. Maximizing use of resources and resource conservation. Natural resources: renewable and non – renewable resources, methods of use renewable resources for residential use.

UNIT – III FUNCTIONS OF MANAGEMENT: AN OVERVIEW:

Decision Making - Types of decisions; factors of control, role of values, standards and goals in decision making process. Management process: Definitions and steps in management process: Planning, Controlling, Organizing and Evaluation. Importance of managing resources of the family. Relation of Family Resource Management to other areas of Home Science

UNIT – IV RESOURCE MANAGEMENT PROCESS:

Management process of resources - Money- sources of income, meaning of income and expenditure, steps in money management, Budgeting- budget items, and methods of handling money. Time – concept of time schedule, time norms and peak loads. Energy – Types of effort (Manual, pedal, visual etc). Concept of body posture, drudgery and fatigue, classification of activities (sedentary, moderate and heavy), use of labour saving devices in management of time and energy, methods of ease fatigue. Mundel's Classes of Change, time and motion studies, working heights at different levels.

UNIT – V ERGONOMICS: ROLE IN MANAGEMENT OF HUMAN RESOURCES:

Ergonomics – concept and principles, work, worker and work environment relationship, role of work, workplace and equipment's (appliances) as sources of drudgery. Occupational health hazards – sources, problems and solutions. Waste management: Home level solid and liquid waste management practices.

UNIT - VI: CURRENT CONTOURS (For Continuous Internal Assessment Only):

Application of Management Processes in: Event Planning &Execution

REFERENCE BOOKS:

1. Varghese, M.A et al. – "Home Management", (Second Edition), New Age International (P) Limited, Publishers, 7/30 A, Daryaganj, New Delhi – 110002.
2. Nickel P. and Dorsey J.M. (1991): Management in Family Living 4th edition Wiley and Eastern, New Delhi.
3. Asay, S.M. and Moore, T.J. (2016) Family Resource Management, Third Edition
4. Atkinson, Jacqueline (1993) - Better time management. Indus Publishing house, New Delhi
5. Historical and contemporary Developments, Dominant Publishers and Distributors, New Delhi – 110002.
6. Sylvia M. Asay, Tami J. Moore, Family Resource Management, Third Edition, 2016.
7. Varghese, M.A., N.N. Ogale, and Srinivasan, K., Home Management; Wiley Eastern Ltd., 1992.
8. Neeru Garg Sushma Gupta, Textbook of Family Resource Management, 9 th Edition 2008.
9. https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=8x0nJkh/R0vHkX1U70Z/CQ==
10. http://ecoursesonline.iasri.res.in/mod/page/view.php?id=122107
11. https://www.yourarticlelibrary.com/home-management/home-science-work-simplification-methods-with-diagram/47806

COURSE OUTCOMES:

- Recognize the importance of wise use of resources to achieve one's goals.
- Become a good home maker.
- Gain knowledge in various aspects in home economics.
- Manage energy, time and money efficiently
- Apply the concepts of ergonomics in designing homes

*****

Third Year **CORE COURSE VI** **Semester: V**

FOOD SERVICE MANAGEMENT

Code: **(Theory)** **Credit: 5**

OBJECTIVES: Students will be able to

- Know the functioning of different types of food service institutions.
- Understand the types of kitchen and kitchen layout
- Comprehend the space allocation and arrangement of food service units.
- Develop skills on the concept of quantity food cookery
- Utilize resources effectively in food service industry.

UNIT – I FOOD SERVICE INDUSTRY:

Types of Food Service Institutions -Commercial and Non-commercial
Definition, objectives and functions of Hotel, Motel, Restaurant, Cafeteria and chain hotels.

Welfare – Hospital, School lunch, Residential establishment and Industrial catering.

Transport – Air, Rail, Sea and Space, Miscellaneous – Contract and outdoor.

UNIT – II FOOD PRODUCTION AND SERVICE:

Food Production: Importance, Principles of Menu Planning in Food Service Institutions, Type of Menu, Techniques of Menu Writing. Standardization of Recipe, Portion Control, Utilization of left over foods in food service institutions.
Food cost control. Book of accounts

Food Service: Formal and Informal types, Styles of Food Services, Centralized and Decentralized System of Service

UNIT – III FOOD SERVICE MANAGEMENT:

Management: Principles, Functions and Tools of Management Resource management **-** Money, Time, Energy, Computer applications in menu planning.

Personnel Management: Recruitment, Selection, Induction, Training, Motivation and Leadership, Wages and other welfare benefits for personnel Laws Governing Food Service Establishment pertaining to employees –Labour laws.

UNIT – IV PHYSICAL PLANT, EQUIPMENT AND FOOD PURCHASE:

Layout of kitchens, types of kitchens – Planning, Receiving and storage space of foods, table setting, Dishwashing.

Equipment - Classification, factors involved in selection, use and care of major equipments

Food Purchase- Procedures and Factors involved in the selection of food

UNIT – V HYGIENE, SANITATION AND SAFETY IN FOOD SERVICE INSTITUTIONS:

Definition, importance of personnel hygiene, importance of pest and rodent control in food services. Safety in disposal of food waste. Accidents in food service and safety procedure, legal responsibilities of food service manager FSSAI (Food safety standard authority of India), Procedures to apply for FSSAI in Tamil Nadu. Entrepreneurship in catering.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Application of principles of sanitation in college laboratory and hostel. Visit to catering institutions to know about organization pattern and personnel Management. Cost comparison of different types of fuel. Explore the different traditional and modern equipments used in food service. Eco kitchen / green kitchen concepts

REFERENCES:

1. West, B.B. and Wood, L. 1979. Food Service in Institutions, John Wiley, New York.
2. Kinton.R And Ceserani,V. 1992.The Theory of Catering . ELBS Publishers.
3. T.Ramaswamy. Principles of Management Himalaya Publication.
4. Subba Rao, P. 2014 Management Theory and Practice, Himalaya publication
5. Swaminathan, M.1979, Food Service and Experimental Foods, Ganesh & Co., Madras
2. Mohini Sethi and Surjeet Malhan, "Catering Management – an integrated approach", 2nd edition, Wiley Eastern Limited, New Delhi, Reprint 2007.
3. Suganthi, V and Premakumari, C. (2017). Food Service Management. Chennai: Dipti Press (OPC) Pvt.LTD.
4. Mary, B. Gregoire, Marian, C. Spears. (2007). Food Service Organizations. United States : Pearson Prentice Hall.
5. Jyoti,S.Sharma. (2006). Food Service Modern Technique and Practices. New Delhi :Akansha Publishing House.
6. Roday, S. (2017). Food Hygiene and Sanitation. (2nd ed.). India: McGraw-Hill Education (India) Pvt Limited.
7. https://www.ccohs.ca/oshanswers/hsprograms
8. https://www.eatrightpro.org/practice/practice-resources
9. https://www.ers.usda.gov/topics/food-markets-prices/food-service-industry.aspx
10. https://theicn.org/
11. www.fssai.gov.in

COURSE OUTCOMES:

- Elucidate the origin and categorization of food service sectors.
- Develop skills in volume food production, various styles of services
- Employ the basic principles and tools of management for efficaciously handling an establishment and utilize the expertise obtained for managing human resources.
- Understand the concepts of layout, equipment in cooking and service area and the food purchase
- Explore the importance of hygiene and safety in the food service units and comprehend the procedures for registration of the units.

*****

Third Year **CORE COURSE VII** **Semester : V**

HOME SCIENCE EXTENSION AND COMMUNICATION

Code: **(THEORY)** **Credit: 5**

OBJECTIVES: To enable the students to

- Understand the concept of Communication and its role in exchange of information
- Examine the models and barriers to communication
- Learn about the concept of extension, extension approaches and models
- Enhance the students in the selection and use of media in different socio-cultural environment

UNIT – I CONCEPT OF EXTENSION EDUCATION:

Meaning, objectives and principles of Extension Education and Home Science Extension Education; Role of home science in developing a community. Historical review of extension education in India and abroad; Role and qualities of an Extension worker; Role and Functions of Extension Educator; Qualities of extension educator; Role of Home Science in National Development.

UNIT – II COMMUNICATION CONCEPT AND MODELS:

Meaning, definition, nature, scope and importance of communication Functions of communication – information function, command or instructive function, influence or persuasive function and integrative function. Elements of communication - three elements-source, message, receiver; four elements-encoding, decoding, sender and receiver; five elements- communicator, communicate, message, channel and feedback. Means of communication- oral, written, sign/signal, action, object; types of communication - formal and informal communication; pattern - one way, two way, circular; communication media-print and electronic media; advantages and disadvantages of communication media. Models of communication- Aristotle model, Shanon-Weaver mode, Berlo model and Scharmm model.

UNIT - III EFFECTIVE COMMUNICATION:

Characteristics of effective communication- clear, correct, complete and precise message, reliability, consideration of the recipient; skills- observance, clarity and brevity, listening and understanding, self-efficacy and self confidence; significance- team work, team building, problem solving and decision making skills, facilitate creativity and reduces misunderstanding; concepts relating to communication- perception, fidelity, communication gap, empathy, homophily and heterophily. Barriers to communication- semantic, psychological, organizational and personal.

UNIT - IV COMMUNICATION AND EXTENSION:

Communication and Extension - concept, need, functions, principles and scope of extension; steps in extension teaching; elements of extension communication system; communication methods in extension- group method, mass method and individual method; pros and cons of communication and extension.

UNIT – V EXTENSION MODELS AND APPROACHES:

Models- Innovation transfer model, Social education model, Indigenization model, Social action/Conscientation models, Empowerment participation model, Combination models; approaches- general extension, commodity specialized, training and visit, agricultural, extension participatory, project, farming systems development, cost sharing and Educational Institution approach.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Learning Current Government programs for families in urban or rural area

REFERENCES:

1. Dahama, O.P. and Bhatnagar, O.P. (1987). Education and Communication for Development. Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.
2. Gupta, D. (2007). Development Communication in Rural Sector. New Delhi: Mukhopadhyay, Abhijeet Publication.
3. Nisha, M. (2006). Understanding Extension Education. New Delhi: Kalpay Publications.
4. Reddy, A. (2010). Extension Education. Sree Lakshmi Press, Bapatla.
5. Joshi Uma (1997). Text Book of Mass Communication and Media. Anmol Publications: New Delhi.
6. Ray, G.L. (2013). Extension communication and Management , Kalyani Publications, India
7. Rogers Everett, M. (2003). Diffusion of Innovations, 5th Ed. New York: The Free Press
8. Singh, U.K and Nayak, A.K. (2007). Extension Education. New Delhi: Common Wealth, Publishers.
9. Wilson, M.C., and Gallup, G. (1955). Extension Teaching Methods. Washington: US Department of Agriculture.
10. Nair, R.(1993). Perspective in Development communication, Sage Publications, New Delhi.
11. Pankajam, G (2000). Extension- Third Dimension of Education, Gyan Publishing House, New Delhi.
12. https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=8x0nJkh/R0vHkX1U70Z/CQ==
13. https://onlinecourses.swayam2.ac.in/cec19_mg32/preview
14. http://ecoursesonline.iasri.res.in/course/view.php?id=243

COURSE OUTCOMES:

- Describe the association between Home Science and Extension
- Gain knowledge on the need and importance of communication and its significance in exchange of information
- Able to communicate effectively with the community
- Analyse the models of Communication and role of media in societal development and perceive the importance of extension education.
- Acquire knowledge on the extension models and approaches

*****

Year : III | **CORE PRACTICAL- V** | **Semester : V**

FAMILY RESOURCE MANAGEMENT

Code: | **(Practical)** | **Credit: 4**

PRACTICALS

1. Comprehend and give a write up on values held and goals set – different age groups
2. Identify resources in and around a family, their use and benefits accrued: Prepare an Inventory
3. Harnessing natural resources: model making – solar devices, windmills, rainwater harvesting, water conservation measures
   - Identification and development of self as are source.
   - Building Decision Making abilities through management games
   - Role play
4. Goal setting exercise for one academic year
5. Elucidate changing value systems in Indian conditions – pros and cons
6. Preparation of time plans for self and family
7. Drafting family budget for different income groups
8. Trial experiments on time and energy management using different household appliances
9. Determining working heights for different individuals at different levels
10. Planning an Event through managerial process

REFERENCES:

1. Varghese,M.A et al. – "Home Management", (Second Edition), New Age International (P) Limited, Publishers, 7/30 A, Daryaganj, New Delhi – 110002.
2. Nickel P. and Dorsey J.M. (1991): Management in Family Living 4th edition Wiley and Eastern, New Delhi.
3. Asay, S.M. and Moore, T.J. (2016) Family Resource Management, Third Edition
4. Atkinson, Jacqueline (1993) - Better time management. Indus Publishing house, New Delhi
5. Sylvia M. Asay, Tami J. Moore, Family Resource Management, Third Edition, 2016.
6. Varghese, M.A., N.N. Ogale, and Srinivasan, K., Home Management; Wiley Eastern Ltd., 1992.
7. Neeru Garg Sushma Gupta, Textbook of Family Resource Management, 9 th Edition 2008.
8. https://epgp.inflibnet.ac.in/Home/ViewSubject?catid=8x0nJkh/R0vHkX1U70Z/CQ==
9. http://ecoursesonline.iasri.res.in/mod/page/view.php?id=122107
10. https://www.yourarticlelibrary.com/home-management/home-science-work-simplification-methods-with-diagram/47806

*****

Third Year **MAJOR BASED ELECTIVE I** **Semester: V**

1) NUTRITION THROUGH LIFE CYCLE

Code: **(Theory)** **Credit:5**

OBJECTIVES: To enable the students to

- Understand the importance of nutrition and health.
- Comprehend the basic aspects of meal planning.
- Obtain knowledge on the nutritional needs pertaining to different stages of life.
- Plan diet for various age groups.

UNIT – I MEAL PLANNING AND NUTRITION IN ADULTHOOD:

Acceptable Dietary Intake, Use of ICMR RDA in planning balanced diet, Basic principles of meal planning, RDA, food allowance for different age groups, factors influencing nutritional requirements for all age groups. Nutrition in adulthood – reference man and reference women, nutritional and food requirements of an adult man and women, body composition, nutrition and health issues, meal planning to suit different income levels.

UNIT – II NUTRITION IN PREGNANCY AND LACTATION:

Nutrition during pregnancy – stages of pregnancy, physiological changes, weight gain in pregnancy, complications, factors influencing the outcome of pregnancy, nutritional requirements and meal planning for pregnant women. Nutrition for lactating women – Physiology and psychology of lactation, hormonal control, colostrum – composition, composition of breast milk, factors affecting the volume and composition of breast milk, nutritional requirements of a nursing mother, meal planning, factors responsible for lactation failure.

UNIT – III NUTRITION IN INFANCY:

Nutrition in infancy – birth weight of infants, rate of growth, milestones in development (only stages), immunization schedule, nutritional requirements, process of breast feeding, superiority of breast milk, advantages of breast feeding, comparison of human milk with cow's milk, artificial feeding, weaning and supplementary foods, weaning problems and complications. Characteristics of low-birth weight infant, small for date babies, pre-term babies-Feeding of preterm infants.

UNIT – IV NUTRITION IN THE PRESCHOOLERS AND SCHOOL AGE CHILDREN:

Nutrition in preschool age – Growth and development, nutritional requirements, factors affecting nutritional status, food requirement, low cost supplementary foods, nutrition related problems in childhood, meal planning for the preschool child. Nutrition in the school age children – Growth pattern in school children, nutritional and food requirement, packed lunch – factors to be considered, sample menu, nutritional problems, meal plan for the school children.

UNIT – V NUTRITION IN ADOLESCENCE AND ELDERLY:

Nutrition in adolescence - growth and development, body composition, puberty, secondary sexual characteristics, psychological changes, nutritional requirements, nutritional problems, malnutrition due to early marriage, food habits and meal plan. Eating disorders-Binge eating, anorexia nervosa, bulimia nervosa. Nutrition in elderly – definition of

geriatrics, changes in body composition, physiological changes, psychological and socio-economic factors in relation to food intake, nutritional requirement, food modification in old age. Nutrition related problems.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Dissemination of nutrition knowledge for chosen target groups during. National Nutrition Month. Sensitising the nursing mothers on the importance of breast feeding during World Breast Feeding Day.

REFERENCES:

1. Mahtab, S., Bamji, Krishnasamy, K., Brahmam, G.N.V., (2012) Text Book of Human Nutrition, Third Edition, Oxford and IBH Publishing Co. P. Ltd., New Delhi.
2. Srilakshmi, B., (2013), Dietetics, New Age International (P) Ltd., New Delhi.
3. Swaminathan, M., (2012), Advanced Textbook on Food and Nutrition, Vol. 1, Second Edition, Bangalore Printing and Publishing Co. Ltd., Bangalore.
4. Shubhangini, A., Joshi (2002): Nutrition and Dietetics, 2nd edition, Tata McGraw-
5. Hill Publishing Company Limited, New Delhi.
6. Krishnasamy, K. and Sesikeran, B., (2013), Dietary Guidelines for Indians, NationalInstitute of Nutrition, ICMR, Hyderabad.
7. Gopalan, C. Rama Sastri, B.V. and Balasubramanian, (2014), Nutritive Value of Indian Foods, NIN, ICMR, Hyderabad.
8. Longvah, T., Ananthan, R., Baskarachary, K. and Venkaiah, K., (2017), Indian FoodComposition Table, NIN, ICMR, Hyderabad.
9. Krause, M.V. and Hunscher, M.A., (2000) Food, Nutrition and Diet Therapy, 14th Edition, W.B. Saunders, London.
10. Antia, F.P. (2005): Clinical Nutrition and Dietetics, Oxford University Press, Delhi.
11. Wardlaw, G.M., Hampi, J.S., DiSilvestro, R.A., (2004), Perspectives in Nutrition, 6th edition, McGraw Hill, New York.
12. Chadha, R. and Mathur, P., (2015), Nutrition: A Lifecycle Approach, Orient Blackswan, New Delhi.
13. https://www.pdfdrive.com/nutrition-through-the-life-cycle-e187862410.html
14. https://ocw.ui.ac.id/pluginfile.php/12209/mod_resource/content/1/Nutrition%20Through%20the%20Life%20Cycle%20by%20Judith%20E.%20Brown%20%28z-lib.org%29.pdf
15. http://www.freebookcentre.net/medical_text_books_journals/nutrition_ebooks_online_texts_download.html
16. https://vdoc.pub/documents/nutrition-through-the-life-cycle-3rd-edition-6krnmbdqjeq0

COURSE OUTCOMES:

- Relate the different stages of growth and nutrient requirements in the human life cycle.
- Compare the Recommended Dietary Allowance for different age groups based on gender and activity.
- Illustrate the food and nutritional requirements for specific groups of people based on their age and food habits.
- Explain the nutrition related problems common in different stages of life cycle and its impact on health.
- Recommend specific nutrients and foods for various age groups quantitatively and qualitatively.

*****

Third Year	**MAJOR BASED ELECTIVE I 2) COMMUNITY NUTRITION**	**Semester: V**
Code:	**(Theory)**	**Credit: 4**

COURSE OBJECTIVES: To enable the students

- Gain insight into the national nutritional problems and their implications
- Gain knowledge about methods of nutritional assessment and modes of extending nutrition knowledge to community.
- Appreciate the national and international contribution towards nutrition improvement.
- Develop skills in organizing and evaluating nutrition projects in the community

UNIT – I NUTRITIONAL DEFICIENCY DISEASES IN INDIA:

Definition – Health, Nutrition, Malnutrition- Undernutrition and Overnutrition, Effect of malnutrition on human development Prevalence of Macronutrient deficiency diseases - PEM, Micronutrient deficiency diseases- Vitamin A deficiency diseases, anaemia, fluorosis ,Goiter in India. Causes of malnutrition in India: i) Socio-economic factors - poverty, population explosion, unemployment and under employment, illiteracy, family planning, food production, food insecurity, Public Distribution System (ii) Cultural factors – food habits, attitudes, taboos; food fads and fallacies.

UNIT – II ASSESSMENT OF NUTRITIONAL STATUS:

Importance and objectives of assessing nutritional status of a community. Methods - Direct assessment- Nutritional anthropometry - Height, weight- Indices used to measure malnutrition; MUAC, Chest circumference, Head circumference, skinfold thickness, Waist and hip circumference and waist hip ratio ii) Clinical examination iii) Biochemical methods iv) Diet Survey Indirect assessment-Vital statistics – IMR, MMR, PNMR, NNMR

UNIT – III NATIONAL AND INTERNATIONAL NUTRITIONAL ORGANISATIONS:

National organisations – Objectives and functions of ICMR, NNMB, NIN, NFI, NSI, FNB. National Nutrition Policy – Aim, Direct - short term nutrition intervention, Indirect -long term nutrition intervention. International organizations - Objectives and functions of WHO, FAO, UNICEF, World Bank; Contribution towards national development.

UNIT – IV NUTRITION INTERVENTION PROGRAMMES:

Integrated Child Development Services – Objectives, beneficiaries, components and challenges in providing services. Chief Minister's Nutritious Noon Meal Programme - Objectives, beneficiaries, components and challenges in providing services. National Prophylaxis Programmes - Objectives, Beneficiaries and Components of National Anaemia Prophylaxis Programme- Long term and short term strategies; National Goiter Prophylaxis Programme; National Vitamin A Deficiency Diseases Prophylaxis Programme - Long term and short term strategies.

UNIT – V NUTRITION EDUCATION:

Definition, Need, Objectives, Implementation, Importance of Nutrition Education for the Community. Methods of Nutrition Education- Audio Visual Aids – Projected and non-

projected. Nutrition Education Programme - planning, execution and evaluation. Concepts and purpose of KAP study; Use of computers to impart nutrition education – power point presentation, preparation of e-learning module.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Prepare different types of visual aid for the nutrition education. Nutritional status assessment for self and peers. Spot study - ICDS and Noon meal functioning.

REFERENCES:

1. Swaminathan, M., (2007), Essentials of Food and Nutrition, An Advanced Textbook Vol.I, The Bangalore Printing and Publishing Co. Ltd, Bangalore.
2. Srilakshmi, B., (2008), Nutrition Science, New Age International publishers (P), Ltd, Chennai.
3. Joshi, S.A., (2007), Nutrition and Dietetics, II Edition, Tata McGraw-Hill Publishing Company Ltd., India.
4. Reddy, R.S., (1997), Nutrition and Health Education, Commonwealth publishers, New Delhi.
5. Mishra, R.C.,(2005), Health and Nutrition Education, A.P.H Publishing Corporation, New Delhi.
6. Gibney, M.J., Margetts, B.M., Kearney, J.M., Arab,L., M.J., (2005), Public Health, Nutrition, Blackwell Publishing Company, UK.
7. https://www.academia.edu/43641174/Community_nutrition_a_handbook_for_health_and_development_workers
8. https://ujlink.uj.ac.za/
9. www.worldcat.org
10. www.nal.usda.gov/legacy/fnic/life-stage-nutrition
11. https://www.medicosrepublic.com/community-nutrition-pdf-free-download/

COURSE OUTCOMES:

- List the nutritional problems and their implications in national development.
- Discuss the methods of nutritional assessment and modes of extending nutrition knowledge to community.
- Relate the objectives and functions of national and international agencies in alleviating the nutrition and health problems.
- Compare the components and beneficiaries of nutrition intervention programmes in India
- Plan and develop skills in organizing and evaluating nutrition education programmes in the community

*****

Year: III **SKILL BASED ELECTIVE I** **Semester: V**

COMPUTER APPLICATIONS IN HOME SCIENCE

Code: **(THEORY)** **Credit: 2**

COURSE OBJECTIVES: Students will be able to

- Know the basics of computers.
- Create awareness of the ways in which information technology is used in practical and work-related situations.
- Explore computer applications in health education, practice, administration and research.

UNIT – I BASICS OF COMPUTER:

Classification of computers- Generation of computers. Input and output devices. Introduction to Internet – Using search engine – Google search – Exploring the next using Internet Explorer and Navigator – Uploading and Download of files and images – E-mail ID creation – Sending messages – Attaching files in E-mail

UNIT – II MS WORD AND DOCUMENTATION:

Starting MS-Word .Creating and formatting a document, Table creation and operation. Processing of data – Tabulation& Graphical representation of data, guidelines for writing references and bibliographical citation- APA, MLA, Chicago, Harvard style, Use of software in writing references and bibliographical citation, Plagiarism-code of ethics and Application of plagiarism software (in brief).

UNIT – III MS EXCEL AND DATA ANALYSIS:

Starting excel Work sheet, cell, inserting data into rows or columns Sorting data, auto sum. Generating graphs, Integrating charts with WORD. Data Analysis using MS Excel. Simple statistical analysis using Excel, making graphs and charts.

UNIT - IV MS POWERPOINT:

Starting MS – PowerPoint. Auto Wizard, creating a presentation using auto content wizard. Blank presentation, creating and saving a presentation. Adding a slide to a presentation. Slide sorter, slide show, editing slides. Use of clip art, word art gallery. Adding transitions and animation effects, setting timings for slide show. Printing presentation documents

UNIT - V COMPUTER AND MOBILE APPLICATIONS IN THE FIELD OF HOME SCIENCE:

Learning the application of softwares and mobile apps in the field of Home science. Websites related to all fields of Home Science: PubMed & Medscape, Literature search strategies. Uses of computer applications within hospitals and the healthcare system, Design of interiors, Design of clothing , Google forms and add ons in Google apps.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Preparation of MS PowerPoint with animation effects on any related topics of home science. Installation of Google apps and create a Google form on any topic of home science. Create different types of chart and graphical representation.

REFERENCES:

1. Best, JW and Kahn, JV (1992) Research in Education.6th ed. New Delhi, Prentice Hall of India Pvt. Ltd,.
2. Kothari, CR (2004) Research Methodology, Methods & Techniques, 2nd ed. New Age International Publishers.
3. Goode, WJ and Hatt, PK (1981) Methods in Social Research, McGraw Hill International Editions, Sociology Series.
2. Kerlinger, FN (1983) Foundations of Educational Research. 2nd ed.
3. Marjory L. Joseph, William D Joseph (1996) Research Fundamentals in Home Economics / Human Ecology. Plycon Press. WHO (2001) Health Research Methodology – A Guide for Training in Research Methods.
4. Subramanian, S., (1999), Introduction to Computers, S. Chand Publishers.
5. Norton, P., (2017), Introduction to computer, Tata Mc Graw Hill Publishing Co Ltd., New Delhi.
6. Nagpal, D. P, (2000), Mastering Microsoft Office 2000, Wheeler Publishing, New Delhi.
7. Saxena. S, (2000), MS Office 2000 for Everyone, Vikas Publishing House; First Edition.
8. Ahilya. R, (2016), Computer, Lucent Publications; VIII Edition.
9. https://nios.ac.in/media/documents/vocational/CLS/Certificate_Course_in_Library_Science_english/M4_PDF/M4L1.pdf
10. https://www.youtube.com/watch?v=X1io7tFR6jI
11. https://workspace.google.com/intl/en_in/products/forms/?utm_source=google&utm_medium=cpc&utm_campaign=1011352-Workspace-APAC-IN-en-BKWS-PHR-Golden&utm_content=text-ad-none-none-DEV_c-CRE_535092417260-ADGP_Hybrid%20%7C%20BKWS%20-%20PHR%20%7C%20Txt%20~%20Forms-KWID_43700065212411237-kwd-368041541485&userloc_9075213-network_g&utm_term=KW_create%20google%20forms&gclid=CjwKCAjwzeqVBhAoEiwAOrEmzRhn6uK72pFydIN08jbIJ8lxfGbQdSXVb1pX7MHf1JiceWIFNdkxMxoCR1sQAvD_BwE&gclsrc=aw.ds
12. https://www.researchgate.net/publication/228373445_Use_of_online_technology_for_multimedia_education

COURSE OUTCOMES:

- Use internet for learning in the field of home science.
- Proper way to document the data collected
- Choose right way of charts and graphs to improve the presentation of reports
- Explore the different mode of preparation of powerpoint presentation using objects
- Widen the knowledge on apt websites and apps to be used for practice.

*****

Third Year	**CORE COURSE VIII DIETETICS**	**Semester: VI**
Code	**(Theory)**	**Credit: 5**

COURSE OBJECTIVES: To enable the students to

- Provide comprehensive knowledge on principles and planning of therapeutic diets.
- Acquire knowledge on nutritional needs of normal and sick persons.
- Assess the nutritional/ disease condition and effectively manage the nutritional needs of target people.
- Develop capacity and aptitude for taking up dietetics as a profession.

UNIT – I CONCEPT OF DIET THERAPY:

Purpose and principle of therapeutic diets, modification of normal diet, classification of therapeutic diets; Special feeding techniques – enteral and parenteral feeding. ; Role of dieticians in nutritional care. Diet counselling, Indian Dietetic Association (IDA)

UNIT – II DIETARY MANAGEMENT OF FEVER AND DEFICIENCY DISEASES:

Aetiology, symptoms and principles of dietary management:-Protein energy Malnutrition; Vitamin A deficiency; Anaemia & Iodine deficiency; Febrile conditions – Acute & Chronic-Typhoid, influenza, malaria, tuberculosis.

UNIT – III DIETARY MANAGEMENT OF GI TRACT & LIVER:

Aetiology, symptoms and principles of dietary management: - Diarrhoea, dysentery and constipation; Peptic ulcer, Irritable bowel syndrome; Disease of liver & Gall bladder- Hepatitis, cirrhosis, cholelithiasis

UNIT – IV LIFE STYLE DISORDERS/DISEASES:

Aetiology, symptoms, complications and principles of dietary management: -Obesity, Diabetes mellitus; Cardio vascular diseases – hypertension, atherosclerosis; Cancer.

UNIT – V DIETARY MANAGEMENT OF RENAL DISEASES & SPECIAL CONDITIONS:

Aetiology, symptoms and principles of dietary management. Nephritis, nephrosis, urolithiasis, renal failure – acute and chronic and Dialysis – types; Nutrition for children with special needs - Autism & Cerebral palsy

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Visit to the Dietary Department of Hospital. Preparation of diet charts & diet prescription/ready reckoner with reference to a specific health ailment

REFERENCES:

1. Srilakshmi B, Dietetics (2017), New Age International Publishing Ltd.
2. Antia F. P. Clinical Dietetics and Nutrition,2002 4th edition, Oxford university press.
3. Indian Dietetic Association, (2018) Clinical Dietetics Manual Elite Publishing House Pvt. Ltd
4. Meenakshi Bajaj (2019) Diet Metrics: Hand Book of Food Exchanges, Notion Press Media Pvt Ltd,
5. Shubhangini A Joshi (2021) Nutrition and Dietetics, McGraw Hill
6. Sheila John, Jasmine Devaselvam (2016) Essentials of Nutrition and Dietetics for Nursing, Wolters Kluwer India Pvt. Ltd
7. Davidson and Passmore, Human Nutrition and Dietetics, Churchill Livingstone publication.
8. Sue Rodwell Williams, Basic Nutrition and Diet Theraphy, 2000 Mosby publication.
9. Garrow J.S, James W. P.T, (2000), Human Nutrition and Dietetics, 10th edition, Churchill Livingston, London.
10. Guthrie H. A, Picciano M. F (1995), Human Nutrition, Mosby, St. Louis Missorie.
11. Mohan K. L, Krause M.V (2002), Food , nutrition and Diet Therapy, W.B.Saunders Co, Philadelphia.
12. Robinson C.H., Lawler M.R, Cheweth W.L; and Gaswick A.E, Normal and Therapeutic Nutrition ,17 th edition, Mac Milan Publishers.
13. https://www.cdc.gov/nutrition/index.html
14. https://archive.nptel.ac.in/courses/126/104/126104004/
15. https://www.pdfdrive.com/nutrition-and-dietetics-text-books-online-e6071568.html
16. https://www.infobooks.org/free-pdf-books/medical/nutrition/

COURSE OUTCOMES:

- Understand and critically modify the normal diet to suit various therapeutic conditions and develop the knowledge, skills and attributes required to meet entry level competency required for a dietician
- Recognize and identify the deficiency disorders and plan a diet
- Apply the knowledge of nutrition and dietetics to manage therapeutic intervention.
- Evaluate, investigate and formulate diet for Life style disorders
- Analyse, apply, and plan a Diet of GI Tract & excretory diseases.

*****

Third Year **CORE COURSE IX** **Semester: VI**

PRINCIPLES OF INTERIOR DESIGN

Code: **(THEORY)** **Credit: 5**

COURSE OBJECTIVES: Students will be able to

- Have foundation in fundamentals of art and design
- Apply the knowledge, skills, processes, and theories of interior design.
- Learn the accessories used for interiors and the different types of flower arrangements principles

UNIT – I INTRODUCTION OF INTERIOR DESIGN:

Concept of Interior Design-Meaning of Interior Design and Interior Decoration. Design – Definition, Meaning, Purpose. Types, elements and principles

UNIT – II COLOR:

Concept of colour; Dimensions of colour – Hue, value and intensity, Colour therapy & Psychology. Colour systems, harmonies, Application of colour harmonies in the interiors and exteriors

UNIT – III LIGHTING & ACCESSORIES:

Importance of lighting; Sources, Types, Glare- its types, causes and prevention. Accessories-Meaning, Types-functional, decorative, both functional and decorative. Lighting accessories- fixtures, Lighting for areas and specific activities. Picture mounting, wall hangings

UNIT – IV FURNITURE:

Styles of furniture – traditional, contemporary and modern design. Furniture for different purpose, furniture materials. Selection and arrangement – Furniture for various rooms – Living, dining, bedroom, kitchen, study room, office. Furniture dimensions, care and maintenance

UNIT – V WINDOW/ DOOR TREATMENTS &FLOWER ARRANGEMENTS:

Selection, use & care of furnishing materials. Draperies, curtains - different door and window coverings. Use of flowers and containers for Interior Decoration – Importance, materials required, care and maintenance of flowers, vase selection, basic shapes. Styles in flower arrangement, dried and pressed flowers, and Japanese arrangements – IKEBANA

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Develop drawing sheets to study the principles and elements of design. Preparation of colour charts, developing 3D models to apply the color systems. Home visit to observe the interiors / Visit to Light /furniture mart. Exhibit flower arrangement show

REFERENCES:

1. The making of interiors – An introduction- Allen Tate- Harper & Row Publishers, New York, 1987.
2. Interior Design & Decoration, Fourth Edition, Sherrill Whiton- Prentice Hall, 1974.
3. Interior lighting for Designers, Third edition – Gary Gordon &Jamco L. Nuckolls – John Wiley & Sons, New York, 1995.
4. The Encyclopaedia of Decorative Styles – William Hardy & Steve Adams – New Burlington books, London, 1988.
5. Seetharaman P, Pannu P, Interior Design and Decoration, 1st Edition, CBS Publishers and Distributors Pvt Ltd, New Delhi, 2015.
6. Dorothy S.and Darlene .M. Introduction to Interior Design Macmillan publishing company, New York,1979.
7. Gold Stein.H.& Gold Stein.V. Art in Every Day life- Mac Millian and Company , New York,1966.
8. Wildhide E, The Interior Design Directory, 1st Edition, Quardrille Publishing Ltd, 2009
9. Andrews S, Textbook of Hotel Housekeeping Management & Operations, First edition Reprint, Tata McGraw Hill Education, New Delhi, 2007
10. Khanna G, Art of Interior Design, 1st Edition, Indica Publishers, 2005
11. Murphy B, Flawless Interior Decorating,1st Edition, McGraw Hill Publications NY, 2005.
12. www.mydesignagenda.com
13. www.bestinteriordesigners.eu
14. www.interiordezine.com
15. www.bestdesignbooks.eu
16. www.homedesignideas.eu
17. http//housekeeping.about.com

COURSE OUTCOMES:

- Recognize the effective use of resources and learn skills in using principles elements of art & design
- Educate the appropriate colours, hues and combination according to the psychology suiting to the different offices
- Acquire the ability to conceptualize and design interior spaces for homes, retails, hotels, offices applying the principles of light.
- Explain the basic concepts in the selection and types of furniture, furnishings, floor coverings and accessories
- Work as an interior designer and interior decorator in events using the draperies and flower arrangement

*****

Third Year	**CORE PRACTICAL VI DIETETICS**	**Semester: VI**
Code	**(Practical)**	**Credit: 4**

PRACTICALS:

Planning, Nutritive value Calculation and preparation of diets for one serving for the following deficiencies/ diseases/disorders/ conditions:

1. Routine hospital diets – full fluid, clear fluid, soft
2. PEM and Anaemia
3. Constipation, Diarrhoea
4. Peptic ulcer
5. Hepatitis and Cirrhosis
6. Fever – Typhoid
7. Obesity
8. Diabetes Mellitus
9. Hypertension& Atherosclerosis
10. Nephritis
11. Nephrosis
12. Autism

*****

Year: III **MAJOR BASED ELECTIVE II** **Semester: VI**

1) FOOD MICROBIOLOGY

Code **(Theory)** **Credit: 4**

COURSE OBJECTIVES: To enable the students to

- Understand the basics of food microbiology and understand the important genera of microorganisms associated with food and their characteristics.
- Identify and recognize the methods of isolation and cultivation of microbes
- Comprehend and differentiate the sources of Microorganisms in foods.
- understand the role of microbes in disease progression of food borne illness
- Learn, Solve and apply the simple preservation methods

UNIT – I INTRODUCTION TO FOOD MICROBIOLOGY:

Introduction of microbiology - History and Development of Food Microbiology. Definition and Scope of food microbiology; General characteristics of bacteria, fungi, virus, protozoa, and algae.

UNIT – II CULTIVATION OF MICRO-ORGANISMS:

Methods of isolation and cultivation, Serial dilution method, Pure culture technique; Microbial Growth in Food: Bacterial growth curve and microbial growth in food. Factors affecting the growth of microorganisms in food, effect of environmental factors in growth of microorganism - pH, water activity, oxygen availability, temperature and others.

UNIT – III MICROBIAL FOOD SPOILAGE:

Sources of Microorganisms in foods. Some important food spoilage microorganisms. Spoilage of specific food groups –cereal, milk, egg, fish, meat and poultry; fruits and vegetables and canned & baked products.

UNIT – IV FOOD BORNE DISEASES:

Microbial intoxication and infections: Sources of contamination of food, Types of food borne infections, food borne intoxications, symptoms and method of control. Toxins in foods – bacterial and mycotoxin- Health effects

UNIT – V WATER BORNE DISEASES:

Sources of contamination of water, Microbiology of fresh water and wastewater, Types – water borne infections – cholera amoebiasis, giardiasis, Pathophysiology symptoms Prevention treatment and method of control.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Visiting a food microbiology analytical lab & Observation in college canteen to record the route of contamination. Preparation of any common and recent examples of Food borne out breaks- News paper clips.

REFERENCES:

1. MO Moss & MR Adams Food Microbiology (2008) New Age Publishers
2. Ramesh Singh Food Microbiology (2021) MJP Publishers
3. FOSTER W.M Food Microbiology (2020) CBS Publisher
4. Frazier William C and Westhoff, Dennis C. Food Microbiology, McGraw Hill Education; Fifth edition 2017 ISBN 9781259062513
5. Jay, James M. Modern Food Microbiology, CBS Publication, New Delhi, 2000
6. Garbutt, John. Essentials of Food Microbiology, Arnold, London, 1997.
7. Banwartt: Food Microbiology
8. Pelczar MJ, Chan E.C.S and Krieg, Noel R. Microbiology, 5th Ed., TMH, New Delhi, 1993.
9. https://www.frontiersin.org/journals/microbiology/sections/food-microbiology
10. https://microbiologysociety.org/publication/past-issues/food-microbiology.html
11. https://www.longdom.org/foodmicrobiology-safety-hygiene.html

COURSE OUTCOME:

- Understand different terminology related to microorganism
- Relate the different factors responsible for the microbial growth
- Analyze and describe the characteristics of important microbial pathogens and spoilage in food
- Acquire, discover and understand the food borne diseases and importance of hygienic and sanitary practices
- Apply simple preservation methods to increase the shelf life of foods

*****

Third Year **MAJOR BASED ELECTIVE II** **Semester: VI**

2) CONSUMER ECONOMICS

Code: **(Theory)** **Credit: 4**

COURSE OBJECTIVES: Students will be able to

- Carry out their role as a responsible consumer.
- Become aware of marketing conditions and gain knowledge about the means for problem redressal.
- Familiar with the problems in buying and the consumer legislations.

UNIT - ICONSUMER AND THE INDIAN ECONOMIC ENVIRONMENT:

Definition and characteristics of consumers, role of consumers in the Indian economy. Types of economic system and characteristics of Indian economy.

UNIT – II MEASURES OF LIVING AND CONSUMPTION:

Place of living, level of living, standards of living, plane of consumption, level of consumption, standard of consumption and cost of living.

Types of income- Real, money, psychic, relationship of GNP, national income, personal income, disposable income.

UNIT – III MARKETS AND MARKETING:

Basic concepts, classification and functions of markets, changing nature of business world (e-business and e-commerce), channels of distribution: meaning, types and their advantages and disadvantages.

UNIT – IV CONSUMER IN THE MARKET:

Consumer buying habits, buying motives and buying problems.

Consumer decision making process- Types of consumer decisions, process of decision making, factors determining and influencing consumer behavior, guidelines for wise buying practices.

UNIT – V CONSUMER CREDIT:

Definition, need, usage, types and sources of credit, savings and investments.

Consumer protection services- Organisations; legislation- important laws for consumer protection; consumer representation.

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Observe and report the buying habits and factors influencing the consumer's behavior. Aware of the income, sources and standard of living of the family.

REFERENCES:

1. Fred D. Reynolds and Coilliean D. Wells (1997). Consumer Behaviour, McGraw-Hill Series in Marketing, New York.
2. Kotler Philip, Armstrong Gary (1992). Principles of Marketing, 5th Edn., Prentice Hall of India, New Delhi.
3. Sarkar, A. Problems of Consumers in Modern India, Discovery Publishing House.
4. Seetharaman, P. and Sethi, M. (2001). Consumerism: Strategies and Tactics, CBS Publishers and Distributors, New Delhi.
5. Engel, J.F. and Black Well R.D. (1990). Consumer Behaviour, 4th Edn., Holt Sanders International Editions.
6. Mishra &Puri, Recent edition 2014, Indian Economy, Himalaya Publishing House.
7. Mithani D.M., 2010 New Edition, Macro-Economics. Himalaya Publishing House Sundaram K.P.M., 2010, Introduction to Economics. RatanPrakashan
8. http://www.library.fa.ru/files/Deaton-Economics.pdf
9. https://www.yumpu.com/en/document/view/63442651/free-download-consumer-economics-issues-and-behaviors-txtpdfepub
10. https://www.pdfdrive.com/consumer-economics-issues-and-behaviors-e58226172.html
11. https://www.perlego.com/book/2391131/consumer-economics-issues-and-behaviors-pdf

COURSE OUTCOMES:

- Understand the Indian economic system
- Comprehend the types of income and measures of living
- Concepts of market and marketing will be known
- Conceptulise the importance of decision making .
- Clear with consumer protection and law

*****

Third Year **Semester: VI**

PROJECT

Code: **Credit: 4**

COURSE OBJECTIVES: Students will be able to

- Carry out their own topic of interest in the field of home science
- Acquire experience on the topic chosen
- Familiar with the process of documentation

PROJECT TITLES:

Specific themes can be selected in the broad areas suggested below

Food Science and Nutrition
Food Service Management
Human development
Interior Decoration
Textiles and clothing
Home Science Extension

INSTRUCTIONS

- The topic of the project and the supervisor under which the student has to complete the project shall be decide by Lottery Draw method during last week of the fifth semester.
- Project components should be decided uniformly for all the students by the respective Heads
- The supervisor is advised to check for the documentation, progress, formatting of the data, conduct mock presentation. Regular review of the progress to be monitored by the supervisor.
- The student shall submit two copies of the report along with soft copies.
- The last date of submission would be before final semester examination.

Total Marks 100

MARK ALLOTMENT

Internal 40 Marks	**External 60 Marks**
Attendance – 5 Mark	Viva Presentation – 10 Marks
Aptitude to carry out the project – 5 Marks	Valuation of Project -50 Marks
Report – 30 Marks	

Project Report Description:

- Page Limit Cover to Cover -30 Pages
- Font size12, Times New Roman, 1.5 spacing
- Inclusive of Plates, graphs and limit to 10 each
- Bibliography APA style
- Soft Binding and duly attested by guide and certified by Head of the Department

*****

Year: III **SKILL BASED ELECTIVE II** **Semester: IV**

FUNDAMENTALS OF ENTREPRENEURSHIP DEVELOPMENT

Code: **(Theory)** **Credit: 2**

COURSE OBJECTIVES: To enable the students to

- Develop entrepreneurial skill and encourage the students to become entrepreneurs.
- Gain knowledge in developing a project proposal
- Know the various procedures and practices for starting a small scale unit of production.

UNIT – I INTRODUCTION TO ENTREPRENEURSHIP:

Meaning, definition of entrepreneur, types of entrepreneur - based on the type of business, based on the use of technology, based on ownership, based on gender, based on the size of enterprise - functions of entrepreneur.

UNIT – II PROJECT IDENTIFICATION:

Idea generation and selection- sources of ideas- idea processing and selection - criteria for selecting a particular project.

UNIT – III PROJECT FORMULATION:

Feasibility report of the project and its scope - project life cycle - pre-investment stage, construction stage and normalization stage.

UNIT – IV PROJECT REPORT:

Meaning, contents of project report - general information, project description, market potential, capital costs and sources of finance, working capital requirements and financial considerations.

UNIT – V FINANCIAL ASSISTANCE TO SMALL ENTERPRISES:

Institutions providing financial assistance to small enterprises - national small industries corporation (NSIC) - district industries centre (DIC) - small scale industries development corporation (SSIDC).

UNIT – VI CURRENT CONTOURS (For Continuous Internal Assessment Only):

Preparation of model loan application form. Writing a project proposal

REFERENCES:

1. Saravananvel P, (1991): Enterpreneurial Development – Principles, Polices
2. and Programmes, Ess Pee Kay Publishing House, Madras.
3. Gupta & Srinivasan, (2002) Enterpreneurial Development, S. Chand
4. Publications, New Delhi
5. Khanka S.S., (2007): Enterpreneurial Development, S. Chand & Co., New
6. Delhi.
7. Gordon, E. & Natarajan, K., (2017), Entrepreneurship Development, Himalaya Publishing House, Mumbai.
8. Khanka, S.S., (2007), Entrepreneurial Development, S Chand and Company Limited, New Delhi.
9. http://www.freebookcentre.net/business-books-download/Entrepreneurial-Development.html
10. https://www.pdfdrive.com/entrepreneurship-development-books.html
11. https://depintegraluniversity.in/userfiles/Entrepreneurship%20Development.pdf
12. https://www.studynama.com/community/threads/entrepreneurship-development-ebook-notes-book-for-bcom-free-pdf-download.3211/

COURSE OUTCOMES:

- List the types of entrepreneur
- Apply and develop projects based on ideation
- Select a business plan
- Explain the different types of funding agencies suitable for each business venture
- Assess the issues associated with financial resources
- Develop entrepreneurship as career

*****