CHILDRENS UNIVERSITY COURSE TEMPLATE

SEMESTER-WISE DISTRIBUTION OF CREDITS FOR PG FN COURSES(2022-23)

Course No.	Course Title	Credits
Semester I	**Certificate in Food and Nutrition**	
	SEMESTER I (CFN)	
CCFN 101	Human Nutrition	4
CCFN 102	Diet Therapy	4
CCFN 103	Practical 1	4
ECFN 104-A ECFN 104-B	Food Preservation and Basic Microbiology Or Nutritional Epidemiology	4
EGFN 105	Physiology (Basic)	4
FN 106	**Prerequisite Course for B.A. Home Science and B.R.S. Home Science Students** Biology, Chemistry, Physics	
Semester I and II	**P.G Diploma in Nutrition and Dietetics**	
	SEMESTER II (P.G.DND)	
CCFN 201	Public Health Nutrition	4
CCFN 202	Dietetics & Diet Counseling	4
CCFN 203	Practical 2	4
ECFN 204-A ECFN 204-B	Project OR Nutritional Biochemistry	4
EGFN 205	Internship	4
Semester III	**Certificate in Maternal and Child Nutrition**	
	SEMESTER III (CMCN)	
CCFN 301	Food Science	4
CCFN 302	Maternal and Child Nutrition	4
CCFN 303	Practical 3	4
ECFN 304-A ECFN 304-B	Prenatal care and Development OR Instrumentation	4
EGFN 305	Research Methodology and Bio statistics	4
	SEMESTER IV	
CCFN 401	Food Production Costing & Hospital Management	4
CCFN 402	Modern Cookery	4
CCFN 403	Practical 4	4
ECFN 404-A ECFN 404-B	Dissertation OR Project	8
TOTAL		**80**

COURSE OUTLINES FOR COURSES OFFERED IN SEMESTER I

		Children's University **Department of P.G and PG Diploma** **Gandhinagar.**	**ACADEMIC YEAR** **2022-2023**	
M.Sc.- FN				
Year	**I**	**Course Type: Core Compulsory** **Course No:CCFN101** **Course Title: Human Nutrition**	**Credits**	**4**
Semester	**I**		**Hours/wk**	**4**
Objectives		1. To enable the students to understand Needs of nutrition for human and their role in living healthy life 2. To present and discuss methods of determining nutrient requirements for humans and discuss the current figures of nutritional requirements 3. To enable them to translate the knowledge into practical guidelines for dietary needs of humans at different stages of life 4. To enable them to understand the application of the recent knowledge of nutrition.		
COURSE CONTENT / SYLLABUS-THEORY & PRACTICAL				
UnitI		**Energy Metabolism & Carbohydrates** 1. **Energy:** • Definition and Components of Energy Requirement • Factors Affecting Energy Expenditure and Requirement • Methods of Estimation of Energy Expenditure and Requirements • Current recommendations for energy intake of different age, sex groups • Disorders of energy metabolism : Obesity and under nutrition • Short term and long term weight maintenance (Gut fill cues, Glucostat theory, Lipostattheory) **2. Carbohydrates** • Digestion, absorption and utilization , • Functions & Classification of Carbohydrates • Regulation of Blood Glucose Concentration • Simple and Complex carbohydrates, Non-starch polysaccharides and fibre constituents and their role in Nutrition. • Glycaemic Index , Glycaemic load and Satiety index: Clinical implications • Disorders related to carbohydrate metabolism • Modification of Carbohydrate Intake for Specific Disorder		

UnitII	**Proteins& Lipids** **1. Proteins** • Classification, Food Sources • Digestion, Absorption and Transport, Functions • Improvement of Quality of Protein in the Diet • Human requirements for proteins (RDA) • Methods of Estimating and Assessing protein Requirements at Different StagesLife Cycle • Protein Deficiency **2. Lipids** • Basic Facts • Types of Fats and its Metabolism (digestion, absorption, transport) • Functions of Fat and Oils • Assessment of Lipid status • Nutritional Requirements of Fats and Oils,Visible and invisible fats in diets • Excessive Fat Intake: Changing Trends in Dietary IntakeEating Out • Diseases: Association and Preventive Measures
UnitIII	**Fat Soluble Vitamins – A, D, E, K& Water Soluble Vitamins (Thiamine, Riboflavin Niacin, Pyridoxine, Folic acid, Ascorbic acid, Biotin** **1. Fat Soluble Vitamins – A, D, E, K** • Basic Facts • Structures of vitamins • Digestion, absorption, transport and metabolism • Food Sources of Vitamins • Bioavailability : Modulators • Function • Assessment of vitamin status • Interaction with other nutrients • Toxicity and deficiency • RDA **2. Water Soluble Vitamins (Thiamine, Riboflavin ,Niacin, Pyridoxine, Folic acid, Ascorbic acid, Biotin** • Basic Facts • Structures of vitamins • Digestion, absorption, transport and metabolism • Food Sources of Vitamins • Bioavailability : Modulators • Function • Assessment of vitamin status • Interaction with other nutrients • Toxicity and deficiency • RDA

Unit IV	**Minerals (Calcium, Phosphorous, Iron, Copper, Zinc, Iodine)& Trace elements (Selenium, Chromium, sodium, Potassium)** • Sources • Digestion, absorption, transport, metabolism • Biochemical function • Deficiency and toxicity • RDA • Interaction with other nutrients

References

Books

1. Mahan KL and Stump SE (2007). Krause's Food and Nutrition Therapy (12thed.).
2. Saunders Publishing Shils ME, Olson JA, Shike M, Ross AC, Cabellaro B and Cousins RJ (2006). Modern nutrition in health and diseases. (10th ed.). Lippincott, Williams and Wilkins publications.
3. Indian Council of Medical Research. Nutrient requirements and Recommended Dietary Allowances for Indians. Latest edition.
4. Bredanier C. Advanced Nutrition
5. Human energy requirement (2004). Report of a joint FAO/WHO/UNU Expert consultation, Rome, 17-24 October 2001. FAO, Food & Nutrition technical Report series 1.
6. Longvah, T., Ananthan, R., Bhaskarachary, K., & Venkaiah, K. (2017). Food Composition Tables. Hyderabad: National Institue of Nutrition.
7. ફન્ડામેન્ટલ્સ ઓફ ફૂડ્સ એન્ડ ન્યુટ્રિશન

Journals

1. Journal of Nutrition
2. American Journal of Clinical Nutrition.
3. International Journal of Food Science and Nutrition.
4. Nutrition Research.

	Children's University **Department of P.G and PG Diploma** **Gandhinagar** .		**ACADEMIC YEAR** **2022-2023**	
M.Sc.-FN				
Year	I	**Course Type: Core Compulsory** **Course No: CCFN 102** **Course Title: Diet Therapy**	**Credits**	**4**
Semester	I		**Hours/wk**	**4**
Objectives		1. To enable the students to understand processes involved in nutritional care, 2. To enable them to know purpose(s) of therapeutic diet adaptations, 3. To enable them to understand relationship between nutrition and infection, 4. To enable them to understand protocol for prescribing these nutritional support		
COURSE CONTENT / SYLLABUS-THEORY				

UNIT - I		**Medical Nutrition Therapy**
		• Definitions and Role of Dietician in Health Care
		  • Dietetics the Science and Art of Human Nutrition Care
		  • Role of Dietician in Health Care
		• The Nutrition Care Process (NCP)
		  • Nutrition Assessment
		  • Nutritional Diagnosis
		  • Nutrition Intervention
		  • Nutrition Monitoring and Evaluation
		  • Documentation
		• Importance of Coordinated Nutritional and Rehabilitation Services
		• Patient Care and Counselling
		  • Patient Care
		  • Counselling		

Unit II		**Therapeutic Diets**
		• Introduction
		• Types of Dietary Adaptations for Therapeutic Needs
		• Normal Nutrition: **A** Base of Therapeutic Diet
		• Diet Prescription
		• Constructing Therapeutic Diets
		• Routine Hospital Diet
		  • Normal or General Diets
		  • Liquid Diets
		  • Soft Diets
		• Mode of Feeding
		  • Oral Feeding
		  • Tube or Enteral Feeding
		  • Peripheral Vein Feeding
		  • Total Parenteral Nutrition		

UnitIII	**Nutritional Management in Fever and infection**
	• Defence Mechanism in the Body
	• Nutrition and Infection
	• Metabolic Changes during Infection
	• Classification and Etiology of Fever infection
	• Typhoid
	• Chronic Fever / Infection
	  • Tuberculosis
	  • HIV (Human Immuno Deficiency Virus) Infection and AIDS (Acquired Immune Deficiency Syndrome)

Unit IV	**Medical Nutritional Therapy in Critical Care**
	• Nutritional management of Critically Ill
	• Special feeding method in nutritional Support
	  • **Enteral Nutrition**(EN) benefits advantages of EN Indications for enteric tube feeding for adults and children, Enteral feeds and their specific characteristics
	  • **Parenteral Nutrition** Daily intravenous nutritional requirements in infants and children, PN products available in Indian market Transitioning to Oral Feeding
	• Nutrition care in immune deficiency diseases
	Care duringCancers
	• Adverse Food Reactions
	  • Food Allergy (Hypersensitivity)
	  • Food Intolerance
	• Adverse Food Reactions-The Diagnosis Process
	• Treatment and Management of Adverse Food Reactions
	• Prevention of Adverse Food Reactions

Reference

1. Mahan KL and Stump SE (2007). Krause's Food and Nutrition Therapy (12thed.)Saunders Publishing
2. Association of Physicians of India (1998). API Textbook of Medicine, Vol. I and II. Published by Association of Physicians of India
3. થેરાપ્યુટિકન્યુટ્રિશન By ભાવના વૈધ
4. ફન્ડામેન્ટલ્સ ઓફ ફૂડ્સ એન્ડ ન્યુટ્રિશન

		Children's University **Department of P.G and PG Diploma** **Gandhinagar.**	**ACADEMIC YEAR 2022-2023**	
M.Sc.- FN				
Year	**I**	**Course Type: Core Compulsory** **Course No: CCFN103** **Course Title: Practical-1**	**Credits**	**4**
Semester	**I**		**Hours/wk**	**8**
COURSE CONTENT / SYLLABUS- Practical				
Unit I		**Human Nutrition**		
		1. Plan and prepare normal Balance diet sheet.(for Adult Male, Female) 2. Plan, prepare Recipe with low and high glycemic index foods and calculate its nutritive value 3. Plan, prepare high Fiber and low Fiber Recipe and calculate its nutritive value 4. Plan, prepare low Fat Recipe and calculate its nutritive value 5. Plan, prepare high Protein Recipe and calculate its nutritive value		
Unit II		**Diet Therapy**		
		1. Market survey of commercial nutritional supplements and nutritional support substrates. 2. Planning and preparation of diets for patients - Liquid diet - Soft diet - Tube or Enteral Feeding 3. Nutritional Management in Fever and infection		
Unit III		**Food Preservation and Basic Microbiology**		
		1. Instruments used in microbiology laboratory – Incubator, Hot air oven, centrifuge, Ph. meter, Autoclave 2. Microscope and its parts 3. Gram Staining 4. Observation of micro-organism from fruit, vegetables, bread 5. Sterilization methods 6. Food preparations by using any two physical methods of preservation		
Unit IV		**Physiology (Basic)**		
		1. Demonstration of Barr body 2. Blood Grouping and Rh factor 3. Measurement of Blood Pressure (After exercise and during rest) 4. Measurement of body temperature and pulse rate (After exercise and during rest)		

	Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .		**ACADEMIC YEAR 2022-2023**	
M.Sc.-FN				
Year	**I**	**Course Type: Elective Compulsory** **Course No: ECFN 104 A** **Course Title: Food Preservation and Basic Microbiology**	**Credits**	**4**
Semester	**I**		**Hours/wk**	**4**
Objectives		1. To provide basic knowledge about microorganisms, their environment and factors affecting their growth 2. To enable students to know about the historical developments and taxonomy of microorganisms 3. To provide knowledge on the principals involved in destruction of microorganisms in meaning foods 4. To understand role of microorganism in disease and immunity		
COURSE CONTENT / SYLLABUS - THEORY				
Unit I:		**Need for Food Preservation** • Food Preservation • Food Spoilage • Food Infection • Taxonomy of microorganisms		
Unit II		**Role and Significance of Microorganisms in Foods** • Bacteria • Yeast • Mold		

Unit III		**Methods of Isolation, Detection and Destruction of Microorganism.**
		• Newer and Rapid Methods of Isolation and Detection of Microorganisms in Foods
		  • Conventional methods
		  • Rapid methods (newer techniques)
		  • Microbiological criteria for various food products
		• Principals Involved in Destruction of Microorganisms for Prolonged Storage of Foods
		  • Physical methods: drying, freezing, cell storage, heat treatment, irradiation, high pressure processing.
		  • Chemical preservation and natural antimicrobial compounds.
		• Importance of Prebiotics and Probiotics in human health		

Unit IV		**Immunity** • Definition of antigen and antibody • Types of immunity – natural and artificial • Three stages of immunity – primary , secondary and tertiary • Auto immune disease – rheumatoid arthritis, Type 1 Diabetes, Psoriasis • Immune body formation		

	Reference	
	1. Microbiology by Pelczar and reid 2. Microbiology by Pawar and Daginawala 3. Microbiology by Chakravorty 4. સુક્ષ્મજીવાણુંશાસ્ત્રલેખકગીરાબેનમાંકડ 5. Jay JM (2004). Modern Food Microbiology (7thed.). CBS Publishers and 6. Distributors. Springer Publications, Delhi 7. Banwart GJ (1998). Basic Food Microbiology (2nded.). CBS Publishers and Distributors, New Delhi 8. William Frazier (2008). Food Microbiology (4thed.). The McGraw Hill Co Inc.,New York **9.** Dr. K. Vijaya Ramesh (2007). Food Microbiology. MJP Publishers, Chennai. **10. માઈક્રોબાયોલોજી તથા ખાધ વિજ્ઞાનમાં તેની અગત્યતા**	

	Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .		**ACADEMIC YEAR 2022-2023**	
M.Sc.- FN				
Year	**1**	**Course Type: Elective Compulsory** **Course No: ECFN 104 B** **Course Title: Nutritional Epidemiology**	**Credits**	**4**
Semester	**1**		**Hours/wk**	**4**
Objectives		1. To enable the students to understand the role of epidemiological research in improving health systems and nutritional status. 2. To understand recent developments in nutritional/ health status assessment methods and their strengths and limitations		
COURSE CONTENT / SYLLABUS - THEORY				
Unit I		**Introduction to Epidemiology- Aims of epidemiology** • Aims &concepts • Role &strategies • Strengths &weaknesses		
Unit II		**Types of Epidemiological Studies** • Observational studies • Experimental studies Randomized Control Trials &Quasi Experimental trials) • Non Experimental (Descriptive, Analytical Cohort, case control& cross-sectional		
Unit III		**Determinants of Epidemiological Studies** • Direct and indirect parameters of assessment of nutritional status used in community survey • Use of epidemiological data, recent developments • Planning of health and nutritional surveys • Interpretation of epidemiological studies		

Unit IV	**Use of Epidemiological Research in Strengthening Nutritional Interventions, National ProgrammesandHealthSystems**
	
	• Approaches and Programmes for the control of
	  • Under nutrition , Stunting & wasting
	  • Vitamin A Deficiency.
	  • Iodine Deficiency Disorders.
	  • Other programmes for control of NCD's
	• Use of surveillance data for program improvement. e.g. National Nutrition Monitoring Bureau, National Family Health Survey, Census data
	Spermatogenesis and oogenesis

References

1. Measuring and Interpreting Malnutrition and Mortality (2005) : A Manual by
2. CDC & WFP)
3. Bonita.R, Beaglehole.R, Kjellstrong.T (2006) Basic Epidemiology- WHO
4. Sathe , P.V. Sathe, A.P. (1991) Epidemiology and Management for health Care
5. Popular Prakashan, Mumbai
6. Willett W. Nutritional Epidemiology (2nd edition). New York: Oxford University Press, 1998. Margetts BM, Nelson M. Design Concepts in Nutritional
7. Epidemiology. New York: Oxford University Press, 1997.
8. Food and nutrition surveillance systems Technical guide for the development of a food and nutrition surveillance system, WHO regional publication, Eastern
9. Mediterranean series, WHO 2013
10. Policies for the control of nutritional anemia, vitamin A deficiency, iodine
11. Deficiency disorders, Govt. of India.
12. National and State Nutrition / Population Education Policies, Govt.of India.
13. Maternal & Child Nutrition Series, Lancet 2008 & 2013
14. Census 2011, Government of India
15. National Nutrition Monitoring Bureau (Latest data)
16. SRS, NFHS III & IV Reports, CES, RSOC Reports for India & Gujarat
17. Global Nutrition Reports (Latest)

Journals

1. Journal of Epidemiology
2. Ecology of Foods and Nutrition.
3. Indian Journal Med. Research.
4. Asia Pacific journal of Nutrition.
5. Tropical Pediatrics.Human Physiology by C C Chatterjee

	Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .		**ACADEMIC YEAR 2022-2023**	
M.Sc.- FN				
Year	**1**	**Course Type: Foundation Course** **Course No: EGFN 105** **Course Title: Physiology (Basic)**	**Credits**	**4**
Semester	**1**		**Hours/wk**	**4**
Objectives		1. To enable the students to understand the relevant issues and topics of human physiology. 2. To enable them to understand the integrated functions of all systems and the grounding of nutritional sciences in physiology. 3. To understand general structure and functions of various systems in human body. 4. To understand structure and functions of various systems in human body under diseased condition.		
COURSE CONTENT / SYLLABUS - THEORY				
Unit I		**Digestive and Excretory System** • Homeostasis • Regulation of Body temperature • Digestion & absorption of food • Structure and function of Kidney • Nephron and Urine formation		
Unit II		**Circulatory and Respiratory System** • Blood, blood groups, blood pressure, blood clotting • Structure of Heart and junctional tissues of heart • Cardiac cycle and Types of circulation • Mechanism of respiration • Transport of oxygen and carbon dioxide		

Unit III	**Nervous and Endocrine System** • Types of nervous system • Types of neuron and Reflex action • Transmission of nerve impulse in nerve fiber and synapse • Types of endocrine glands and its functions Pituitary, thyroid, Para thyroid, and adrenal gland • Hormones its action and feedback mechanism
Unit IV	**Reproductive System** • Types of Chromosome, Kariotype • Spermatogenesis and oogenesis • Male and Female reproductive system • Fertilization of ovum and different stages of fetus • Parturition, Stages of labor, Development of breast and secretion of milk

References

18. Human Physiology by C C Chatterjee
19. Textbook of medical physiology by Guyton
20. Human physiology by Agrawal
21. માનવ શરીર રચના અને શરીર ક્રિયા અને સુતીકા શાસ્ત્ર ક દિલીપ મહેતાલેખ -
22. જીવ વિજ્ઞાન લેખક સંધ્યાબેન પરીખ –

		Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .		**ACADEMIC YEAR 2022-2023**
M.Sc.- FN				
Year	**1**	**Course Type: Prerequisite Course** **Course No: FN 106** **Course Title: Biology, Physics, Chemistry**	**Credits**	**0**
Semester	**1**		**Hours/wk**	**0**
Objectives		**Prerequisite Course for B.A. Home Science and B.R.S. Home Science Students**		
COURSE CONTENT / SYLLABUS - THEORY				
Biology		• Cell structure, • Human body parts and • Various systems, • Blood components		
Physics		• Temperature and its measurements • Guarantee and warrantee of household equipment • Precautions while using		
Chemistry		• Solutions, concept of acid, base and salt, • Neutralization reactions, • PH • Buffer solutions		

COURSE OUTLINES FOR COURSES OFFERED IN SEMESTER - II

		Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .	**ACADEMIC YEAR 2022-2023**	
M.Sc. - FN				
Year	**I**	**Course Type: Core Compulsory** **Course No: CCFN 201** **Course Title: Public Health And Nutrition**	**Credits**	**4**
Semester	**II**		**Hours/wk**	**4**
Objectives		1. To associate with an existing nutrition health program in the community and conduct situational analysis of the existing program and plan relevant interventions and actions. 2. To explain the significance of nutritional anthropometry, 3. To discuss various methods of anthropometric classification, and 4. To carry out some of the nutritional anthropometric methods 5. To understand the condition of severe-acute malnutrition (SAM) and its management		
COURSE CONTENT / SYLLABUS - THEORY				

Unit I		**Community Nutrition Understanding Public Nutrition Problems and Programmes**
		• Concept
		• Scope
		• Role of Public Nutritionists in Health Care Delivery
		• Nutritional problems in India
		  ◦ Anemia,
		  ◦ vitamin A- deficiency,
		  ◦ PEM,
		  ◦ goiter,
		• Government programmes for prevention
		  ◦ National Nutrition Mission
		  ◦ NIPI
		  ◦ Vit-A prophylaxes programme
		  ◦ Goiter control programme		

Unit II	**Assessment of Nutritional Status** –1 ● Goals and Objectives ● Methods of Nutritional Assessment • Indirect Assessment of Nutritional Status • Direct Assessment of Nutritional Status ● Nutritional Anthropometry • Uses of Anthropometry • Common Measurements Used in Nutritional Anthropometry • Methods of Assessing Nutritional Status in Individuals • Determination of Nutritional Status using MUAC • Determination of Nutritional Status using Weight and Height • Methods of Assessment of Nutritional Status of Community • Functional indicators such as grip strength, respiratory fitness, Harvard Step test, squatting test.
Unit III	**Assessment of Nutritional Status** –2 ● Clinical Assessment • Training and Standardization • Clinical Signs of Nutritional Disorders ● Biochemical Assessment • Biochemical Tests-An Overview • Biochemical Tests for Nutritional Deficiencies ● Dietary Assessment • Family Diet Survey • Assessment of Dietary Intakes of Individuals • Qualitative Diet Surveys • Institutional Diet Surveys • Food Balance Sheets (FBS)
Unit IV	**Sever Acute Malnutrition** (SAM) **And MAM and its Management** ● Severe Acute Malnutrition (SAM) Moderate Acute Malnutrition **(MAM)**– prevalence and causes in India • Indicators of SAM and MAM • Selective feeding programme guidelines. • Management strategies for addressing SAM -complicated and uncomplicated cases including home based care ● Monitoring of SAM and its treatment • A critique of various control strategies for SAM in national programs – • Child Malnutrition Treatment Centres CMTC • Nutrition rehabilitation centres (NRC)in Gujarat)

References

1. National guidelines and consensus on Management of SAM-2014
   Community based Management of children with severe acute malnutrition, Operational & Technical guidelines, Ministry of health & Family Welfare, Nirman
2. Gujarat State Nutrition Policy, Govt of Gujarat, Gandhinagar, 2003

3. National Family Health Surveys, IIPS and Macro International, 2005-2006
4. National Family Health Surveys-NFHS-3,NFHS-4,NFHS-5
5. Global Nutrition report (Latest)
6. Nutrition & the Post – 2015 Development Agenda: Siezing the opportunity(2015), SCN News, No 41
7. Essential Nutrition Actions: Improving Maternal. Newborn, Infant & YoungChild Nutrition, WHO 2013
8. Food and Nutrition Security, BY Dr. SeemaSankarDorcas L. Essiamah
9. Mason, J.B., Habich, J.P., Tabatabai, H. and Valverde, V. (1984): Nutritional Surveillance, WHO.
10. Lee, R.D. and Nieman, D.C. (1993): Nutritional Assessment, Brown and Benchmark Publishers..
11. FAO Nutritional Studies No.4 (1953): Dietary Surveys: Their Technique and Interpretation, FAO.
12. Bingham, S.A. (1987): The Dietary Assessment of Individuals, Methods, Accuracy, new Techniques and Recommendations. Nutrition Abstracts and Reviews, 57: 705-743.
13. Collins, K.J. (Ed.)(1990) handbook of Methods for the Measurement of work performance, Physical Fitness and Energy Expenditure in Tropical Populations. International Union of Biological Sciences.
14. Lohman, T.G.; Roche, A.F.; and Martorell, R. (Ed.) Anthropometric Standardization Reference manual, Human kinetics Books, IIinois.

		Children's University **Department of P.G and PG Diploma** **Gandhinagar.**		**ACADEMIC YEAR 2022-2023**
M.Sc. - FN				
Year	**I**	**Course Type: Core Compulsory** **Course No: CCFN202** **Course Title:** Dietetics & Diet Counseling	**Credits**	**4**
Semester	**II**		**Hours/wk**	**4**
Objectives		1. The course is aimed at giving advanced knowledge in the field of clinical nutrition and dietetics 2. The course will enable the students to gain current knowledge about classification, pathogenesis, diagnosis, etiology, symptoms and dietetic management of various diseases		
COURSE CONTENT / SYLLABUS- Practical				
Unit I		**Dietary Management** •Weight Imbalance -Prevalence and Classification • Guidelines for Calculating ideal Body Weight • Obesity and underweight •Gastrointestinal Diseases and Disorders • Diarrhoea • Constipation • Oesophagitis • Gastro Oesophageal Reflux Disease (GERD) • Dyspepsia • Gastritis • Diverticular Disease • Peptic Ulcer • Malabsorption Syndrome'		
Unit II		**Dietary Management in Gout and Diabetes Mellitus** •Gout • Role of Protein and Purines • Etiology • Clinical Features and Complications • Management of Gout •Diabetes Mellitus • Prevalence of Diabetes Mellitus • Classification and Etiology of Diabetes • Factors Affecting Normal Blood Sugar Levels • Diagnosis • Complications of Diabetes •Management of Diabetes • Management of Diet		

	• Food Exchange System • Glycernic Index (GI) • Sweeteners: Nutritive and Non-Nutritive Sweeteners • Dietetic Foods • Beneficial Effect of Some Foods: Supportive Therapy • Exercise and Drugs
Unit III	**Coronary Heart Diseases and their Management** • Coronary Heart Diseases (CHD) • Prevalence • Etiology: Cardiovascular Risk Factors • Pathophysiology of CHD • Common Disorders of Coronary Heart Diseases and their Management • Dyslipidemia • Atherosclerosis : A Coronary Artery Disseise • Hypertension (HT) • Angina Pectoris • Myocardial infarction (MI) • Congestive Cardiac Failure • Rheumatic Heart Disease (RI-ID)
Unit IV	**Dietary Management inLiver and Renal Diseases** • Liver disorders • Viral hepatitis types A and B, C,E • Cirrhosis of liver • Hepatic coma • Kidney Function: Diagnostic Tests • Common Renal Diseases Etiology and Dietary Management • General Principle of Dietary Management in Renal Diseases • Acute and Chronic Nephritis • Nephritic Syndrome • Acute Renal Failure (ARF) • Chronic Renal Failure(CRF) • End Stage Renal Disease, (ESRD) and Renal Calculi

References

1. Mahan KL and Stump SE (2007). Krause's Food and Nutrition Therapy (12thed.).Saunders Publishing
2. B Srilakshmi. Dietetics. New age international publishers.
3. Association of Physicians of India (1998). API Textbook of Medicine, Vol. I and II. Published by Association of Physicians of India
4. Dr (smt.) Vijaya d. JoshiHandbook of nutrition and dietetics.Vora medical publications, Bombay
5. Avantina Sharma Principles of therapeutic nutrition and dietetics

Journals

1. Indian Journal of Nutrition and Dietetics.
2. Medical Clinics of North America
3. American Journal of Clinical Nutrition

4. Journal of Human Nutrition
5. Journal of American Medical Association
6. Journal of Ph. Diet. Assoc.
7. Nutrition Reviews
8. World Review of Nutrition and Dietetics.

	Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .		**ACADEMIC YEAR 2022-2023**

M.Sc. - FN				
Year	**I**	**Course Type: Core Compulsory** **Course No: CCFN 203** **Course Title: Practical-2**	**Credits**	**4**
Semester	**II**		**Hours/wk**	**8**

COURSE CONTENT / SYLLABUS- THEORY

Unit I	**Public Health Nutrition I** 1. Training in all assessment techniques applicable for individuals and community, including ones used for hospital – based patients, Validity and reliability of these techniques. 2. Community based project for assessment of nutritional status of any vulnerable group. 3. A small evaluation study of a nutrition project.
Unit II	**Public Health Nutrition II** 1. Visit and training in health care Centre run by Government Health Department. 2. Planning, conducting and evaluating nutrition education programmes (in a village/community- through, Demonstration puppet show, skit etc.) for vulnerable group- • Children • Adolescent girl and boy • Pregnant women • Lactating mothers
Unit III	**Dietetics &Diet Counseling I** 1. Visit to a pathology lab 2. General , Reference Values and Interpretations • Hemoglobin • Blood glucose • Serum total cholesterol • Serum triglyceride • Albumin test • Bilirubin test • Kidney function taste 3. Dietary Management in Obesity and underweight 4. Dietary Management in GI Disorders
Unit IV	**Dietetics & Diet Counseling II** 1. Dietary Management in Gout 2. Dietary Management Diabetes Mellitus 3. Dietary Management in Coronary Heart Diseases 4. Dietary Management in Liver Diseases 5. Dietary Management in Renal Diseases

	Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .		**ACADEMIC YEAR 2022-2023**	
M.Sc. - FN				
Year	**I**	**Course Type: Elective Compulsory** **Course No: ECFN 204 B** **Course Title: Nutritional Biochemistry**	**Credits**	**4**
Semester	**II**		**Hours/wk**	**4**
Objectives		1. Develop an understanding of principles of biochemistry 2. Develop an understanding of major nutrients and its physiological importance 3. To Understand mechanism of metabolic pathways		
COURSE CONTENT / SYLLABUS- THEORY				
Unit I		**Carbohydrates** • Carbohydrates Definition and classification • Isomerism in monosaccharides D L form, Optical isomerism, ring structure and aldose ketose isomerism • Glycolysis and krebs cycle and its energetics • Errors in metabolism of carbohydrates • Metabolic disorders Diabetes		
Unit II		**Proteins** • Proteins and amino acids definition and classification • Structure and functions of Protein and amino acids • Urea cycle, Trans amination, deamination and decarboxylation • Protein Synthesis • Metabolic disorders and errors in protein metabolism		
Unit III		**Fats** • Fatty Acids definition and classification • Fats definition and classification • Some important steroids • β oxidation of fatty acids • Ketosis and errors in fat metabolism		

Unit IV	**Enzyme** • Enzyme definition, physical and chemical properties • Factors affecting enzyme reaction • Nomenclature and classification of enzymes • Enzyme Inhibitors • Physiological importance of enzyme in disease condition
References	
1. Biochemistry by A C Deb **2.** Biochemistry by Lehninger **3.** Biochemistry by West and Todd **4.** Biochemistry by Best and Taylor **5.** Biochemistry by Swaminathan	

	Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .	**ACADEMIC YEAR 2022-2023**

M.Sc. - FN				
Year	**I**	**Course Type: Elective Compulsory** **Course No: ECFN 204A** **Course Title: Project**	**Credits**	**4**
Semester	**II**		**Hours/wk**	**4**
Objectives		1. To impart knowledge about basic concepts of Project Work. 2. To identify the areas of Research Project and Methods of Foods and Nutrition		

COURSE CONTENT / SYLLABUS- THEORY

General Guideline for project work:

- Area and topic to be selected in consultation with the concerned faculty.
- Project work should be based on primary data collection.
- Project work should have analysis of data along with other standard inputs.
- Project report should not be less 30-60 typed pages following APA Style of Report writing.
- The assessment of project work: 50 Marks for internal viva-voice
- 50 Marks External (30 Report and 20 External Viva-voice)
- Assessment pattern:
- The Project will be examined by two examiners, one internal (Guide) and other external and the average of the Marks given by two examiners will be the final marks.
- The Viva will be conducted by two examiners who have examined the Project of the student concerned.

		Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .	**ACADEMIC YEAR 2022-2023**	
Year	**I**	**Course Type: Foundation Course** **Course No EGFN 205** **Course Title: Internship**	**Credits**	**4**
Semester	**II**		**Hours/wk**	**8**
Objectives		1. To familiarize the students with the hospital organization 2. To train the students in the dietetics department of hospital 3. To have hands on experience in the various OPD of a hospital		
COURSE CONTENT - PRACTICALS				
		Duration of training : 45 Days **Training:** Hospital Setting **Norms:** As per the norms of the hospital **Evaluation: The** students will be evaluated by the dietician of the hospital. **Note:**. **1.** The student will have to prepare a report and submit to the department. **2.** A presentation has to be made in seminar on their work experience. .		

COURSE OUTLINES FOR COURSES OFFERED IN SEMESTER - III

	Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .		**ACADEMIC YEAR 2022-2023**	
M.Sc. – FN				
YEAR	**II**	**Course Type: Core Compulsory** **Course No: CCFN 301** **Course Title: Food Science**	**Credits**	**4**
Semester	**III**		**Hours/wk**	**4**
Objectives		1. To provides an understanding of composition of various foodstuff 2. To familiarize students with changes occurring in various foodstuffs as a result of processing and cooking 3. To enable students to use the theoretical knowledge in various applications and food preparations		
COURSE CONTENT / SYLLABUS - THEORY				
Unit I		**Introduction to Food Science and Cereal & Cereal Products** • Definitions • Functions of Food • Food Groups • Cooking Methods **Cereal & Cereal Products** • Cereal grains : Structure, composition, classification and grading • Specific Cereals • Cereal products ,Breakfast Cereals • Role of Cereal in cookery, role in bakery; Batters and dough. Sugar and Related product • Nutritive value, Properties • Sugar Related products • Role of Sugar in Cookery • Artificial Sweeteners		
Unit II		**Pulses & Related product and Milk & Milk Products** • Nutritive value composition, • processing, Storage and infestation • Milling or Decortications • Soaking • Germination • Fermentation • Effect of Cooking and Factors affecting cooking quality • Toxic constituents. • Role of Pulses in cookery **Milk & Milk Products** • Composition, • Physical and functional properties.		

	• Denaturation, • Effects of processing and storage. • Dairy products. • Milk substitutes
Unit III	**Nuts & Oilseeds and Fats & Oils** • Nuts and Oilseeds • Nutritive value • Properties • Composition, selection(Specific nuts and oil seeds), • Protein concentrates and Toxins • Fats & Oils • Sources, composition, • effect of composition on fat, • classification, • physical and chemical properties, Rancidity changes, anti-oxidants
Unit IV	**Fruits & Vegetables** • Classification, • Composition structural features. • Enzymes in fruits and vegetables, browning reactions. • Pigments : constituents, • Effect of cooking, acid, alkali, etc. on pigments. • Texture of fruits and vegetables during ripening. **Spices & Herbs and Evaluation of food Quality** • Spices and Herbs • Specific Spices • Herbs • Food Adulteration • Types of adulteration • Food standards and regulation in India • Evaluation of Food Quality • Sensory Evaluations • Objective Evaluation

References

1. Food Science (fifth Edition) By B.Srilakshmi
2. Charley H (1982). Food Science (2nded.). John Wiley & Sons, New York.
3. Potter N and Hotchkiss JH (1996). Foods Science (5thed.). CBS Publication & Distributors, New Delhi.
4. Pomeranz Y (1991). Functional properties of food components (2nded.). Academic Press, New York.
5. Park Pauline G and Palmer H (1972). Food theory and applications. John Wiley & Sons, New York.
6. Goel RK (1979). Technology of Food Products Series No. 29. Small Business Publications, New Delhi.
7. SwaminathanM(1979).FoodScienceand Experimental Foods.Ganeshand Co. Madras.
8. Bowers J (1992). Food Theory and Applications (2nded.). MacMillan Publishing Co., New York.

9. Food Science and Technology Series of Monographs.
10. Annual Reports of CFTRI.
11. Journal of Food Science.
12. Journal of Food Science and Technology.
13. Indian Food Packer

	Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .	ACADEMIC YEAR 2022-2023

M.Sc. FN				
Year	**II**	**Course Type: Core Compulsory** **Course No: CCFN 302** **Course Title:** Maternal and Child Nutrition	**Credits**	**4**
Semester	**III**		**Hours/wk**	**4**
Objectives		1. To aware the student about complication, Psychological changes and nutritional requirement during pregnancy and lactation. 2. To provide the knowledge about importance of breast milk, Supplementary and weaning food and health and nutrition of mother and child to the students. 3. To provide the knowledge about direct nutritional assessment of Human groups.		

COURSE CONTENT SYLLABUS-
THEORY

Unit I	**Physiology and psychological changes during pregnancy**
	• Importance of Maternal Nutrition.
	  • Physiology and psychological changes
	  • Complication during pregnancy
	  • Problems and Treatment during Pregnancy.
	• Embryonic and Fetal growth and Development.
	  • Stages of pregnancy.
	  • Types of delivery

Unit II	**Nutrition During pregnancy and lactation**
	• Foods needs and nutritional consideration during pregnancy and lection.
	  • Human Milk Composition.
	  • Nutritional Requirement during pregnancy.
	  • Meal planning for pregnant women.
	  • Nutritional Requirement for lactating women.
	  • Meal planning for pregnant lactating women.
	Nutrition During Infancy
	• Nutrition During Infancy,
	  • Brest feeding,
	  • weaning foods,
	  • Common diseases and diet feeding the premature baby.
	  • Supplementary diet.

Unit III	**Pediatric Problems and Nutritional Management** • Congenital Heart Disease (CHD) • Preterm /Low Birth Weight • Lactose Intolerance • Celiac Disease • Inborn Errors of Metabolism

Unit IV	**Nutritional program**
	• Nutritional program for promoting maternal and child nutrition and health.
	  • National program for prevention of blindness
	  • National Anemia control program
	  • Goiter prevention program
	  • Integrated Child Development program
	  • Midday meal program
	  • Matru vandanayojana
	  • Kasturba Poshansahay yojana
	  • Janni surksha yojana
	  • Chiranjivi yojana

Reference

1. કૌટુંબિક આહાર આયોજન.લેખક: પ્રા. સુશીલાબેન આઈ.પટેલ.
2. આહાર અને પોષણના મૂળ તત્વો.લેખક : પ્રા. સુશીલાબેન આઈ.પટેલ.
3. Robinson C.H. , Lawler, M.R., Chenoweth, W.L., Garwich, A.E. Normal and Therapeutic Nutrition 7th Edition, Macmillan Publishing Co. New York 1994.
4. Davidson, S. Passmore, R. Brook, J.F. and Truswell, Human Nutrition and Dietetics, 9th edition, F. and S Livingstone Ltd., Edinburgh and London 1993
5. Shanti Gosh, The feeding and care of infants and young children, voluntary health association of India,, New Delhi 6th edition 1992.
6. Rao, D.H and Vijayaraghavan, K (1996), Anthropometric assessment of nutritional status in “Text Book of Human Nutrition”, New Delhi; (eds. Bamji, M.S, Rao, N.P and Reddy, V.); Oxford and IBH Publishing Co. Pvt. Ltd., P 515.
7. Srilakshmi, B (2008), “Dietetics”, New Delhi; New Age International (P) Ltd. Publishers, Pp 319-325.
8. Thimmayamma, B.V.S and Rao, P (1996), Dietary assessment as part of

nutritional status in “Textbook of Human Nutrition”, New Delhi

9. Indian Council of Medical Research (2010), “Nutrient requirements and Recommended Dietary Allowances for Indians”, Hyderabad; National Institute of Nutrition.
10. Mahan, L.K and Stump, S.E (2004), “Krause’s Food Nutrition and Diet therapy”, Philadelphia; WB Saunders Co., Pp 534-555.
11. Emma, M.L (2008), “Handbook of Nutrition and Food”, London; CRC Press, Taylor and Francis group.
12. FAO/WHO/UNU (1985),"Energy and Protein Requirements", Geneva; World Health Organisation. . 11. Gopalan, C; Sastri, B.V.R and Balasubramanian, S.C (1989), “Nutritive Value of Indian Foods”, Hyderabad; National Institute of Nutrition, ICMR,
13. JOURNALS
14. Reports of the State of World's Children, Who and UNICEF, Oxford University.
15. Reports of National Family Health Survey, International Institute for Population Science, Mumbai.
16. World Development Reports, Investing in Health, World Development Indication.
17. Indian Journal of Medical Research, ICMR, New Delhi,

	Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .		**ACADEMIC YEAR 2022-2023**	
M.Sc.- FN				
Year	**II**	**Course Type: Core Compulsory** **Course No: CCFN 303** **Course Title: Practical- 3**	**Credits**	**4**
Semester	**III**		**Hours/wk**	**8**
COURSE CONTENT / SYLLABUS- Practical				
Unit I		**Food Science I** 1. Study the Factors affecting coagulation of milk protein 2. Prepare recipe where crystallization , Caramelisation, one –Thread and three -Thread consistency is utilized 3. Find the smoking point of any oil 4. Do market survey of • Artificial Sweeteners and milk and milk products available in the market and note nutritive value from the label.		
Unit II		**Food Science II** **1.** Enzymatic browning in vegetable and fruit and any four method of preventing it **2.** Sensory evaluation of food product Conduct Tests • To know the Sensitivity • Acceptability of a new product • To know likes and dislikes **3.** Food Adulteration tastes • Do market survey and find the fat substances available in the market		
Unit III		Maternal Nutrition 1. Plan a diet for pregnant women. 2. Plan a diet for a low, Middle and high–income pregnant women. 3. Plan a diet for lactating women. 4. Plan a diet for a low, Middle and high income lactating women.		
Unit IV		Child Nutrition Plan and prepare balanced diet and calculate nutrition for the following group. • Preschool children. • School children • Adolescent girl and boy		

		Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .		**ACADEMIC YEAR 2022-2023**
M.Sc. FN				
Year	**II**	**Course Type: Foundation Course** **Course No: ECFN 304** **Course Title: :Prenatal Care and Development**	**Credits**	**4**
Semester	**III**		**Hours/wk**	**4**
Objectives		1. To enable the students to understand the concept of pregnancy in Indian perspective. 2. To enable the students to understand the importance of counseling. 3. To enable the students to understand the social, cultural and spiritual context of progeny. 4. To familiarize the students the concept of care and dietary management during prenatal.		
COURSE CONTENT / SYLLABUS-THEORY				
UnitI		**Family and Marriage** • **Family** • Concept of family • Type of Family • Role and function of family • Family life cycle • **Marriage** • Definition of Marriage. • Types of Marriage • Marriage and Marital Adjustment		

Unit II	**Prenatal care** • **Prenatal care** • Concept • Need and Importance in Current Scenario Before Pregnancy • Work Issue, • Age as an issue • Family History • Genetic testing and Counseling • Emotions
Unit III	**Psychological and social aspect** • **Psychological and social aspect** • psychological stress, • psychological counseling • Social accept • Society and you • Cultural aspect • family history, family expectation
Unit IV	**Preparing for Pregnancy** • **Lifestyle changes** • Nutrition • Exercise • Meditations • Age as an issue • **prenatal hazards and remedies** • Labor and Birth • Birth Process • Stages of birth • Types of birth

Reference

1. Adarsh Mata- UtamSantan.
2. Balshikshan
3. Park's Textbook of Preventive and social Medicine 23rdedi.
4. ParivarniPathshala, Children's University, Gandhinager.
5. AdhinanShastra.
6. Sagarbhavasthaanetmarubalak , Dr.BabalalN.Parikh
Ushaben Ba. Parikh, Navneet Education Limited,Dantali, Gujarat

	Children's University **Department of P.G and PG Diploma** **Gandhinagar.** .		**ACADEMIC YEAR 2022-23**	
M.Sc. - FN				
Year	**II**	**Course Type: Foundation Course** **Course No: EGFN305** **Course Title: Research Methodology and Biostatics**	**Credits**	**4**
Semester	**III**		**Hours/wk**	**4**
Objectives		1. To provide knowledge and skills for conducting research from planning a study to report writing. 2. To strengthen abilities of students with regard to identifying research problems, formulating research objectives, experimental designs, sampling, data collection and analysis and writing research reports. 3. To critique some recent research studies from the perspectives of – research methodologies, program applications, interdisciplinary approaches, gender sensitivity		
COURSE CONTENT / SYLLABUS- THEORY				
Unit I		**Basics of research** • Science and scientific method • Research – definition, types, and research design • Role of home science in research and statistics • Objectives of research • Ethics and plagiarism in research		
Unit II		**Steps in research** • How to select a research topic • Hypothesis – definition and types, hypothesis testing • Review of literature • Planning of research • Methodology and tools		

Unit III	**Research Procedure** ● Population and Variables – definition and types ● Sampling – definition and types, Sampling methods ● Data gathering instrument – Interview, questionnaire, observation ● Representation of data – editing, classification, tabulation and coding ● Graphical representation – Bar, Column, Histogram, Pie, Frequency polygon, Ogive
Unit IV	**Statistical analysis** ● Basics of statistics – use of appropriate measurement tools in research ● Frequency distribution – continuous and discrete series ● Measurement of central tendency – mean, median, mode ● Measurement of dispersion – range, mean deviation, quartile deviation, standard deviation ● Student "t" test, chi square test, ANOVA

References

6. Research Methodology by C R Kothari

7. Research methods by kahn

8. Statistics by Sharma

9. સંશોધન પધ્ધતિ અને પ્રવિધિ યુનીવર્સીટી ગ્રંથ નિર્માણ બોર્ડ

10. શિક્ષણ અંને સામાજિક વિજ્ઞાનોમા સંસોધનોમાં સંસોધનનુ પધ્ધતિ શાસ્ત્ર By D.A.Uachat

11. શિક્ષણ માં આંકડાશાસ્ત્ર યુનીવર્સીટી ગ્રંથ નિર્માણ બોર્ડ

COURSE OUTLINES FOR COURSES OFFERED IN SEMESTER - IV

	Children's University **Department of P.G and PG Diploma** **Gandhinagar.** ..		**ACADEMIC YEAR 2022-2023**	
M.Sc. - FN				
Year	**II**	**Course Type: Elective Compulsory** **Course No: ECFN 401-** **Course Title: Food Production Costing & Hospital Management**	**Credits**	**4**
Semester	**IV**		**Hours/wk**	**4**
	To enable the students to : 1. Understand History and Development of Food Service Establishments 2. The need of Personal Hygiene and Sanitary Practices for food in hospital 3. Develop excellent communication skills to disseminate knowledge. 4. Develop entrepreneurship skills in the field of Food Production .			
COURSE CONTENT / SYLLABUS- Practical				

Unit I	**Food Service Establishments**
	• History and Development
	  • Factors Affecting Development
	  • Recent Trends
	• Types of Food Service Establishments
	  • Commercial Establishments
	  • Non-commercial Establishments
	• Understanding Management
	• Approaches to Food Service Management
	  • Traditional Approach
	  • Classical Approach
	  • Scientific Approach
	  • Management by Objectives
	  • Systems Approach
	  • Quantitative Approach
	  • Behavioural and Human Relations Approach
	  • Contingency Approach
	  • Just-in-Time
	  • Total Quality Management Approach			

Unit II	**The Importance of Menu and Menu Planning in Food Service Organization**
	• Definition and Functions of a Menu
	  • The Need for Menu Planning
	  • Knowledge and Skills Required for Planning Menu
	• The Types of Menu and its Applications
	  • Types of Menus
	  • Uses of Menus
	• Steps in Menu Planning and its Evaluation
	  • Construction of Menu
	  • How to Plan a Menu?
	  • Characteristics of a Good Menu
	  • Display a Menu
	  • Evaluation of Menu

Unit III	**Organization and Leadership**,
	• Organizational Chart,
	  • Organizational Charts of Dietary/food service department,
	  • line of staff, authority, responsibility, power, delegation of authority
	  • Centralization and decentralization of food
	• Managing an Organization
	  • Processes Involved
	  • Principles of Management
	  • Functions of Management
	• Leadership, motivation and communication
	  • Dietician as a leader, leadership qualities that a dietitian should possess, styles of leadership and their effect on subordinates.
	  • Relation between motivation and performance, Maslow's Theory of Motivation, Fredrik Hedburg Motivation – Hygieno Theory, Application of Above theories to motivate subordinates communication, need for communication, process of communication, upward, downward and lateral communication, barriers to effective communication, listening.

Unit IV	**Personal Hygiene and Sanitary Practices in Hospital**
	• Personal Hygiene and Sanitary Practices
	  • Health of Staff
	  • Sanitary Practices
	• Sanitation Training and Education for Food Service Workers
	  • Sanitation Training and Education
	  • Who should be trained?
	  • What a Training Programme should include?
	  • Employment Practice
	• Hazard Analysis and Critical Control Point (HACCP)
	• Work Place Safety
	  • Why Accidents should be prevented?
	  • How Accidents Take Place?
	  • Types of Accidents
	  • Precautions to Prevent Accidents
	• Sanitation Regulations and Standards

	• Control of Food Quality • Adulteration and Misbranding

References

1. Thangum Philip – (1994) Modern Cookery for Teaching and Trade (Volume 1 & II), Bombay Orient Langman's.

2. Shankuntala Mane – (1987) – Food Facts and Principles , Bombay, Willey Eastern Ltd.,
3. Angela Kay (1978) – Shining Cook Book, London Octopus Books Ltd.
4. B. B. Weste& L. Wood – (4th Ed.) – Food Service in Institutions - New York, John Willey & Sons,
5. Mohini Sethi &Surjeeet Mathan – (1993) – Catering Management & Integrated Approach, Bombay, Willey Eastern. Ltd.

	Children's University **Department of P.G and PG Diploma** **Gandhinagar**		**ACADEMIC YEAR 2022-2023**	
M.Sc.- FN				
Year	**II**	**Course Type: Core Compulsory** **Course No: CCFN 402** **Course Title: Modern Cookery**	**Credits**	**4**
Semester	**IV**		**Hours/wk**	**4**

COURSE CONTENT / SYLLABUS- Practical

Unit I	**Application of Science in cooking**
	• Cookery as a Science
	  • Objective of cooking
	  • Preliminary Preparations
	• Cooking methods
	  • Moist heat Method and Dry heat method
	  • Microwaves cooking
	  • Solar cooking
	• Advances in food technology

Unit II	**Role of food ingredients in cookery** • Foundation ingredients • Fats • Resigning Agents • Salt • Liquid • Flavouring and Seasoning • Sweetening andthickening
Unit III	**Food ingredients and Spices used in Indian and Western Cookery** • Importance of spices • Basic information about spices • Functional foods in cookery • Ingredients used in bakery items • Points consider while making bakery items
Unit IV	**Beverages and Appetizers** • Classification • Nutritive value • Cooking tips • Serving

References

2. Thangum Philip – (1994) Modern Cookery for Teaching and Trade (Volume 1 & II), Bombay Orient Langman's.
3. ફન્ડામેન્ટલ્સ ઓફ ફૂડ્સ એન્ડ ન્યુટ્રિશન
4. Food Science (fifth Edition) By B.Srilaks

		Children's University **Department of P.G and PG Diploma** **Gandhinagar.**		**ACADEMIC YEAR 2022-2023**
M.Sc.- FN				
Year	**II**	**Course Type: Core Compulsory** **Course No: CCFN 403** **Course Title: Practical- 4**	**Credits**	**4**
Semester	**IV**		**Hours/wk**	**8**
COURSE CONTENT / SYLLABUS- Practical				
Unit I		**New Food Product development** • Sensory evaluation • Sensory test		
Unit II		**A day canteen by student** • Prepare and sell food products		
Unit III		**Preparations of** • Beverage (hot and cold) • Soup and Sauces • Cereals • Pulses • Vegetables		
Unit IV		**Preparations of** • Salads • Desserts • Snacks • Sandwiches • Pasta • Bakery items		

		Children's University **Department of P.G and PG Diploma** **Gandhinagar.**	**ACADEMIC YEAR 2022-2023**	
M.Sc. - FN				
Year	**II**	**Course Type: Elective Compulsory** **Course No: ECFN 404A or B** **Course Title: Dissertation or Project**	**Credits**	**8**
Semester	**IV**		**Hours/wk**	**16**
Objectives		1. To familiarize the students with the process of research with focus on maternal and child nutrition 2. To train the students on all steps of research process from problem identification to data dissemination 3. To train students on writing a proposal for funding and ethical approval process.		
COURSE CONTENT / SYLLABUS				
Unit I		Identification of problem of Research in Foods & Nutrition		
Unit II		Collecting relevant Review of Literature and developing the experimental design		
Unit III		Proposal development, its approval by technical and ethical committee		
Unit IV		Tool development for Research and pilot testing / standardization of techniques		
Unit V		Data Collection / Mid-course corrections		
Unit VI		Data entry ; Statistical analysis		
Unit VII		Scientific Writing		

REFERENCES

1.Indian Journal of Endocrinology & metabolism, Medknow publications & media Pvt. Ltd, Mumbai.

2 .Journal of Medical Nutrition & Nutraceuticals, Medknow publications & media Pvt. Ltd, Mumbai.

3.Asia Pacific Journal of Clinical Nutrition, Published by HEC Press.

Web journals

1.www.diabetologia – journal.org (Diabetologia)

2.Onlinelibrary.willwg.com/journal/10.1111 (ISSN) 1467 – 789 X (Obesity review)

3.www.adajournal.org (Journal of the Academy of Nut. Of Diabetes)

4.As.wiley.com/wiley CDA/wiley title/product Cd – NDI.html (Nutrition of Dietetics)