E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI – 625 014.

(*An Autonomous Institution – Affiliated to Madurai Kamaraj University*)

Re-accredited (**3rd Cycle**) with Grade **A+** & **CGPA 3.51** by NAAC

DEPARTMENT OF NUTRITION & DIETETICS

TANSCHE - **CBC**S With OBE

BACHELOR OF SCIENCE

PROGRAMME CODE - N

COURSE STRUCTURE

(w.e.f. 2023 – 2024 Batch onwards)

Annexure -13

E.M.G. YADAVA WOMEN'S COLLEGE, MADURAI -14.

(An Autonomous Institution – Affiliated to Madurai Kamaraj University)

(Re –accredited (3rd cycle) with Grade A+ and CGPA 3.51 by NAAC)

TANSCHE – CBCS WITH OBE

DEPARTMENT OF NUTRITION AND DIETETICS – UG

COURSE STRUCTURE

(w.e.f. 2023 – 2024 Batch onwards)

Semester	Part	Course Code	Title of the Course	Teaching hrs (per week)	Duration of Exam (hrs.)	Marks Allotted			Credits
						CIA	SE	Total	
III	I	23OUITA3/ 23OU1HIN3	**Part I :**Tamil / Hindi	6	3	25	75	100	3
	II	23OU2EN3	**Part II :**General English –III	6	3	25	75	100	3
	III	23OUND31	**Core Course 5:** Nutritional Biochemistry	5	3	25	75	100	5
	III	23OUND3P	**Core Course 6 :** Nutritional Biochemistry Practical	3	3	40	60	100	3
	III	23OUNDGEND3	**GEC 5:** Food preservation	4	3	25	75	100	3
	III	23OUNDGEND3P	**GEC 6:**Food Preservation Practical	2	3	40	60	100	2
	IV	23OUNDSEC31	**SEC 4:** Pre school and crèche management	1	3	25	75	100	1
	IV	23OUNDSEC32	**SEC 5** : Family Dynamics	2	3	25	75	100	2
	IV		Environmental studies	1	-	-	-	-	-
				30					**22**
IV	I	23OUITA4/ 23OU1HIN4	**Part I :** Tamil / Hindi	6	3	25	75	100	3
	II	23OU2EN4	**Part II :**General English – IV	6	3	25	75	100	3
	III	23OUND41	**Core Course 7:** Nutrition Through the Life Cycle**.**	5	3	25	75	100	5
	III	23OUND4P	**Core Course 8 :** Nutrition Through the Life Cycle Practical	3	3	40	60	100	3
	III	23OUNDGEND4	**GEC 7:** Foundations of Baking & Confectionary	3	3	25	75	100	3
	III	23OUNDGEND4P	**GEC 8:** Foundations of Baking & Confectionary Practical.	2	3	40	60	100	2
	IV	23OUNDSEC41	**SEC 5 :**Nutritional assessment and diet counselling	2	3	25	75	100	2
	IV	23OUNDSEC42	**SEC 6 :** Front Office Management	2	3	25	75	100	2
	IV	23OU4EV4	Environmental studies	1	3	25	75	100	2
				30					**25**

Department of N&D						Class : II N&D		
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours / Week**	**CIA**	**SE**	**Total**
I	Core	**23OUND31**	**Nutritional Biochemistry**	5	5	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	**Entrepreneurship oriented**
✓		

Learning Objectives

To enable students to

1. Study the basic concepts of metabolism of proximate principles and others.
2. To learn the metabolic pathways of nutritional significance

UNIT I

Enzymes ,Co-enzymes and Antioxidants

Enzymes – Definition, Types, Mechanism of Enzyme action, Factors affecting enzyme activity. Coenzyme- Definition, Types and Role of B vitamin as coenzyme.
Antioxidants – definition, Role of antioxidants in prevention of degenerative disorders.

UNIT II

Metabolism of Carbohydrates

Classification, Glycolysis, The Citric Acid Cycle Glycogenesis,Glycogenolysis, Gluconeogenesis, and Hexose Monophosphate Shunt.

UNIT III

Metabolism of Protein

Amino acids – Structure and Classification , General Pathway of amino acids,Oxidative Deamination, Decarboxylation, Transamination and Urea cycle,

UNIT IV

Metabolism of Lipids

Lipids- Classification, Classification of fatty acid, Beta -oxidation ,Bio synthesis of Fatty acids. Essential fatty acids – types and functions. Lipo Proteins- Classification and function.

UNIT V
Nucleic Acids and Hormones

Nucleic acids -structure and biological functions.Structure of DNA, RNA types and functions. Biological role - pituitary, adrenal cortex and medulla, thyroid, parathyroid and pancreas. Recombinant DNA technology, xenobiotics, Nutrigenomics.

Books for Study:

1.AmbigaShanmugam, *Fundamentals of Biochemistry for Medical Students*,Karthick offset printers, Chennai, 2015.
2.Arumugam N et al., B*iochemistry*, Saras Publication, Nagerkoil, 2014.
3.Veerakumar L, *Biochemistry*,MJPPublisher,Chennai, 2010

Books for Reference

1.Albanese, A. (Ed.). (2012). Newer methods of nutritional biochemistry V3: With applications and interpretations. Elsevier.
2.Bettelheim, F. A., Brown, W. H., Campbell, M. K., & Farrell, S. O. (2009). General, Organic & Biochemistry. Brooks/Cole Cengage Learning.
3.Champe, P. C., Harvey, R. A., & Ferrier, D. R. (2005). Biochemistry. Lippincott Williams & Wilkins, 6th Edition, Wolters Kluwer, London.
4.Harvey, R. and Ferrier, D., Lippincott's Illustrated Reviews: Biochemistry, 6th edition, Lippincott Williams and Wilkins, Philadelphia.
5.Lehninger, A.L. (1993) Biochemistry. 3rd ed. CBS Publishers, New Delhi.
6.Lieberman, M., & Ricer, R. E. (2009). Lippincott's Illustrated Q&A Review of Biochemistry. Lippincott Williams & Wilkins.
7.Murray, R.K., Granner, D.K., Mayes, P.A. and Rodwell, V.W. (2000): 25th Ed. Harpers
Biochemistry.Macmillan worth publishers.
8.Shanmugham Ambika (1985) Fundamentals of bio-chemistry to medicalstudents. NVA Bharat Printers, and traders 56, Peters Road, Madras-86.

Web Resources / E. Books:

- https://www.udemy.com/share/1027yA/
- https://www.classcentral.com/course/swayam-biochemistry-5229
- https://www.classcentral.com/course/edx-biochemistry-biomolecules-methods-and- mechanisms-12585
- https://www.classcentral.com/course/swayam-experimental-biochemistry-12909
- https://youtu.be/y6YGZfcAegw

Pedagogy: Chalk and Talk, PPT, Group discussion, OHP presentations, quiz, on the spot test and Virtual Labs, you tube links.

Rationale for nature of Course:

Knowledge and Skill:

To gain knowledge about Metabolism of Carbohydrates, Protein and Lipids

Activities to be given:

Innovation recipes, Assignment, ppt, Quiz, Group discussion.

Course learning Outcomes (CLO's):

Sl.No	Course out come Statement	Knowledge (According to Bloom's Taxonomy)
CLO1	Summarize the role of enzymes and co enzymes in biological oxidation.	K1 to K3
CLO2	Explain metabolism and regulation of carbohydrate	K1 to K3
CLO3	Enumerate the metabolism of Protein	K1 to K3
CLO4	Illustrate the metabolism of Lipids	K1 to K3
CLO5	Discuss the structure and functions of nucleic acids RNA and DNA	K1 to K3

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	3	3	3	3	3	3
CLO2	3	3	3	3	3	3
CLO3	3	3	3	3	3	3
CLO4	3	3	3	3	3	2
CLO5	3	3	3	3	3	2

1-Basic Level **2- Intermediate Level** **3- Advanced Level**

Annexure -13

LESSON PLAN : TOTAL HOURS (75 hrs)

Unit	Description	Hrs	Mode
1	**UNIT I** **Enzymes ,Co-enzymes and Antioxidants** Enzymes – Definition, Types, Mechanism of Enzyme action, Factors affecting enzyme activity. Coenzyme- Definition, Types and Role of B vitamin as coenzyme. Antioxidants – definition, Role of antioxidants in prevention of degenerative disorders.	**15**	Chalk and talk, Group Discussions, Quiz
2	**UNIT II** **Metabolism of Carbohydrates** Classification, Glycolysis, The Citric Acid Cycle Glycogenesis, Glycogenolysis, Gluconeogenesis, and Hexose Monophosphate Shunt	**15**	Chalk and talk, Quiz
3	**UNIT III** **Metabolism of Protein** Amino acids – Structure and Classification , General Pathway of amino acids, Oxidative Deamination, Decarboxylation, Transamination and Urea cycle,	**15**	Chalk and talk, PPT, On the spot Test
4	**UNIT IV** **Metabolism of Lipids** Lipids- Classification, Classification of fatty acid, Beta -oxidation ,Bio synthesis of Fatty acids. Essential fatty acids – types and functions. Lipo Proteins- Classification and function.	**15**	Chalk and talk, PPT, On the spot Test
5	**UNIT V** **Nucleic Acids and Hormones** Nucleic acids -structure and biological functions.Structure of DNA, RNA types and functions. Biological role - pituitary, adrenal cortex and medulla, thyroid, parathyroid and pancreas. Recombinant DNA technology, xenobiotics, Nutrigenomics.	**15**	Chalk and talk, PPT, On the spot Test, Assignment

Course Designer
MRS. K. GOWSALYA

Annexure -13

Department of N&D				Class : II N&D				
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours / Week**	**CIA**	**SE**	**Total**
III	Core	**23OUND3P**	**Nutritional Biochemistry Practicals**	3	3	40	60	100

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✓		

Learning Objectives

To enable the students to :

1. Study the basic concepts of metabolism of proximate principles and others.
2. To learn the metabolic pathways of nutritional significance.

Course Contents:

UNIT - I Qualitative tests for sugars-glucose, fructose, lactose, maltose and glucose.

UNIT - II Qualitative analysis of minerals.

UNIT -III Quantitative estimation of reducing sugars in foods (glucose, lactose by Benedicts method).

UNIT - IV Quantitative estimation of ascorbic acid content of foods by titrimetric method.
Quantitative estimation of lactose content of foods by titrimetric method.

UNIT - V Demonstration Experiments.
Estimation of total nitrogen in foods (Micro or Macrokjeldahlmethods)
Determination of Iodine value.
Determination of fat content in food using Soxhlet method.

Books for Study:

1.AmbigaShanmugam, *Fundamentals of Biochemistry for Medical Students*,Karthick offset printers, Chennai, 2015.

2.Arumugam N et al., B*iochemistry*, Saras Publication, Nagerkoil, 2014.

3.Veerakumar L, *Biochemistry*,MJPPublisher,Chennai, 2010.

Books for Reference

1.Albanese, A. (Ed.). (2012). Newer methods of nutritional biochemistry V3: With applications and interpretations. Elsevier.

2.Bettelheim, F. A., Brown, W. H., Campbell, M. K., & Farrell, S. O. (2009). General, Organic & Biochemistry. Brooks/Cole Cengage Learning.

3.Champe, P. C., Harvey, R. A., & Ferrier, D. R. (2005). Biochemistry. Lippincott Williams & Wilkins, 6th Edition, Wolters Kluwer, London.

4.Harvey, R. and Ferrier, D., Lippincott's Illustrated Reviews: Biochemistry, 6th edition, Lippincott Williams and Wilkins, Philadelphia.

5.Lehninger, A.L. (1993) Biochemistry. 3rd ed. CBS Publishers, New Delhi.

6.Lieberman, M., & Ricer, R. E. (2009). Lippincott's Illustrated Q&A Review of Biochemistry. Lippincott Williams & Wilkins.

7.Murray, R.K., Granner, D.K., Mayes, P.A. and Rodwell, V.W. (2000): 25th Ed. Harpers Biochemistry.Macmillan worth publishers.

8.Shanmugham Ambika (1985) Fundamentals of bio-chemistry to medical students. NVA Bharat Printers, and traders 56, Peters Road, Madras-86.

Web Resources / E. Books:

1.https://www.udemy.com/share/1027yA/
2.https://www.classcentral.com/course/swayam-biochemistry-5229
3.https://www.classcentral.com/course/edx-biochemistry-biomolecules-methods-and- mechanisms-12585
4.https://www.classcentral.com/course/swayam-experimental-biochemistry-12909
5.https://youtu.be/y6YGZfcAegw

Pedagogy: Chalk and Talk, PPT, Group discussion, OHP presentations, quiz, on the spot test and Virtual Labs, you tube links.

Rationale for nature of Course:

Knowledge and Skill:

To gain knowledge on analytical and experimental Knowledge of bio chemistry.

Activities to be given:

Assignment, ppt, Quiz, Group discussion.

Annexure -13

LESSON PLAN : TOTAL HOURS (45 HRS)

Unit	Description	Hrs	Mode
1	**UNIT – I** Qualitative tests for sugars-glucose, fructose, lactose, maltose and glucose Qualitative tests for protein.	9	Demonstration & Experimentation
2	**UNIT – II** Qualitative analysis of minerals.	9	Demonstration & Experimentation
3	**UNIT – III** Quantitative estimation of reducing sugars in foods (glucose, lactose by Benedicts method).	9	Demonstration & Experimentation
4	**UNIT – IV** Quantitative estimation of ascorbic acid content of foods by titrimetric method.	9	Demonstration & Experimentation
5	**UNIT – V** Demonstration Experiments. Estimation of total nitrogen in foods (Micro or Macro kjeldahl methods) Determination of Iodine value. Determination of fat content in food using Soxhlet method.	9	Demonstration & Experimentation

Course Designer

MRS . K. GOWSALYA

Annexure -13

EVALUATION (PRACTICAL)

Internal (Formative) : 40 marks

External (Summative) : 60 marks

Question Paper Pattern for Internal Practical Examination : 40 marks

S. No	Components	Marks
1.	Aim and Procedure	5
2.	Analysis	5
3.	Tabulation & Value	5
4.	Calculation and Result	10
5.	Observation Note Book	5
6.	Model Exam	10
	Total	**40**

Question Paper Pattern for External Practical Examination (Major) : 60 marks

S. No	Components	Marks
1.	Aim and Procedure	12
2.	Analysis	12
3.	Tabulation & Value	10
4.	Calculation	10
5.	Result	6
6.	Record	10
	Total	**60**

In respect of External Examinations Passing Minimum is **35 %for Under Graduate** Courses and in total , **aggregate of 40%**

Department of N&D						Class : II N&D		
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours / Week**	**CIA**	**SE**	**Total**
IV	GEC	23OUNDGEND3	Food Preservation	3	4	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	**Entrepreneurship oriented**
		✓

Learning Objectives

To enable students to
1.Gain knowledge on principles of food preservation of foods.
2.Understand the techniques used in processing foods to preserve their shelf life.
3. Apply skills learnt to develop preserved food product.

UNIT – I

Food Spoilage - Definition, causes, microorganisms involved in spoilage of bread, fruits and vegetables, meat, fish, egg, milk, juices andpickles.

Food preservation - Definition, principles and importance, classification – bactericidal and bacteriostatic methods.

UNIT – II

Processing by high temperature

Processing and preservation by high temperature: blanching, pasteurization, sterilization and UHT processing, canning, extraction cooking, dielectric heating, Dehydration.

UNIT – III

Processing by low temperature

Processing and preservation by low temperature – refrigeration,freezing, dehydro-freezing.

UNIT – IV

Preservation by drying

Processing and preservation by drying, concentration and evaporation: various methods sun – drying, tray or tunnel drying, spray drying, drum drying freeze drying, fluidized bed drying, advantages anddisadvantages.

UNIT – V

Preservation by non - thermal treatments and food packaging Processing and preservation by non – thermal methods: salt, sugar,chemicals, smoking. Irradiation

Food additives: Definition, types and functions, permissible limits andsafety aspects.
Food packaging- its types and uses.

Books for Study:

1.B.Sivasankar (2015) Food Processing and Preservation, PHI Pub, New Delhi.

2.B.Srilakshmi, (2022) Food Science, New Age International (P) Ltd, Publishers, New Delhi.

Books for Reference :

1.Arthey, D and Ashurst, P.R (1996), Fruit processing, Blackie academic and professional. London.
2.Fellows, P.J (2016): Food Processing Technology: Principles and Practice, second edition, CRC Wood head publishing Ltd, Cambridge.
3.Gould. G.W (1995), New methods of food preservation. Blackie academic and professional. London.
4.Rahman M S (2020) Handbook of Food Preservation CRC Press, USA
5.Srilakshmi B (2017) Food Science, New Age International Publications, New Delhi.
6.Suganthi.V and Subaratinam.R (2021) Textbook on Food preservation, Dipti Press (OPC) Pvt. Ltd, Chennai.

Web resources / E.Books:

1.https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/food- spoilage.
2.http://ecoursesonline.iasri.res.in/mod/page/view.php?id=111436
3.http://ecoursesonline.iasri.res.in/mod/page/view.php?id=111435
4.http://www.homepreservingbible.com/2247-an-introduction-to-the-drying-food-preservation-method/

Pedagogy: Chalk and Talk, PPT, Group discussion , quiz, on the spot test, you tube links.

Rationale for nature of Course:

Knowledge and Skill:

To gain knowledge regarding the basic concepts of food preservation.

To know about the food packaging of the preserved food products.

Activities to be given:

Assignment, ppt, Quiz, Group discussion, instruct students to do different recipes using different principles of food preservation .

Course learning Outcomes (CLO's):

CLO	Course Outcomes Statement	Knowledge (According to Bloom's Taxonomy)
CLO1	Define and explain the principles of food preservation and relate the role ofmicroorganisms in food spoilage.	K1 to K3
CLO2	Explain the causes of food spoilage, need and principles of food preservation.	K1 to K3
CLO3	Apply the various techniques of food preservation to preserve different foods so as to increase the shelf life of foods.	K1 to K4
CLO4	compare the principles and techniques of various food preservation methods andexplain the role of packaging in food processing.	K1 to K3
CLO5	Justify the use of various preservation techniques, and packaging materials describethe terms related to food preservation and classify foods based on the shelf life.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Program Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	2	1	3	2	2	3
CLO2	1	2	2	3	3	2
CLO3	2	2	1	2	3	3
CLO4	2	3	2	3	3	2
CLO5	1	3	2	2	2	2

1-Basic Level 2- Intermediate Level 3- Advanced Level

Annexure -13

LESSON PLAN : TOTAL HOURS(60 HRS)

Unit	Description	Hrs	Mode
1	**UNIT – I Food Spoilage** - Definition, causes, microorganisms involved in spoilage of bread, fruits and vegetables, meat, fish, egg, milk, juices andpickles. **Food preservation** - Definition, principles and importance, classification – bactericidal and bacteriostatic methods.	12	Chalk and talk, Group Discussion, Quiz.
2	**UNIT – II Processing by high temperature** Processing and preservation by high temperature: blanching, pasteurization, sterilization and UHT processing, canning, extraction cooking, dielectric heating, Dehydration.	9	Chalk and talk, Quiz.
3	**UNIT – III Processing by low temperature** Processing and preservation by low temperature – refrigeration, freezing, dehydro-freezing.	15	Chalk and talk, PPT, On the spot Test
4	**UNIT –IV Preservation by drying** Processing and preservation by drying, concentration and evaporation: various methods sun – drying, tray or tunnel drying, spray drying, drum drying freeze drying, fluidized bed drying, advantages anddisadvantages.	9	Chalk and talk, PPT, On the spot Test.
5	**UNIT-V Preservation by non - thermal treatments and food packaging** Processing and preservation by non – thermal methods: salt, sugar,chemicals, smoking. Irradiation Food additives: Definition, types and functions, permissible limits andsafety aspects. Food packaging- its types and uses.	15	Chalk and talk, PPT, On the spot Test, Assignment.

Course Designer
Mrs. K.JANAKI

Annexure -13

Department of N&D				Class : II N&D				
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours / Week**	**CIA**	**SE**	**Total**
IV	Core	23OUNDGEND3P	Food Preservation practicals	2	2	40	60	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	**Entrepreneurship oriented**
		✓

Learning Objectives

To enable the students to :

1. Gain knowledge on principles of food preservation of foods.
2. Understand the techniques used in processing foods to preserve their shelf life.
3. Apply skills learnt to develop preserved food product.

UNIT – I
Preparation of jams and jellies using different seasonal fruits.

UNIT – II
Preparation of squashes, juices, syrup using different seasonal fruits.

UNIT – III
Preparation of pickles using fruits and vegetables

UNIT – IV
Preparation of sauce and ketchup.

UNIT – V
Preparation of vathal and vadagam.

Books for study :

1.B.Sivasankar (2015) Food Processing and Preservation, PHI Pub, New Delhi.

2.B.Srilakshmi, (2022) Food Science, New Age International (P) Ltd, Publishers, New Delhi.

Books for Reference :

1.Arthey, D and Ashurst, P.R (1996), Fruit processing, Blackie academic and professional. London.
2.Fellows, P.J (2016): Food Processing Technology: Principles and Practice,second edition, CRC Wood head publishing Ltd, Cambridge.
3.Gould. G.W (1995), New methods of food preservation. Blackie academicand professional. London.
4.Rahman M S (2020) Handbook of Food Preservation CRC Press, USA
5.Srilakshmi B (2017) Food Science, New Age International Publications, New Delhi.
6.Suganthi.V and Subaratinam.R (2021) Textbook on Food preservation, DiptiPress(OPC) Pvt. Ltd, Chennai.

Web resources / E.Books:

1.https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/food- spoilage.
2.http://ecoursesonline.iasri.res.in/mod/page/view.php?id=111436
3.http://ecoursesonline.iasri.res.in/mod/page/view.php?id=111435
4.http://www.homepreservingbible.com/2247-an-introduction-to-the-drying-food-preservation-method/

Pedagogy: Chalk and Talk, PPT, Group discussion , quiz, on the spot test, you tube links.

Rationale for nature of Course:

Knowledge and Skill:

To gain knowledge regarding the basic concepts of food preservation.

To know about the food packaging of the preserved food products.

Activities to be given:

Assignment, ppt, Quiz, Group discussion, instruct students to do different recipes using different principles of food preservation .

Annexure -13

LESSON PLAN : TOTAL HOURS (45 HRS)

Unit	Description	Hrs	Mode
1	**UNIT – I** Preparation of jams and jellies using different seasonal fruits.	9	Demonstration, Preparation, & Group discussion
2	**UNIT-II** Preparation of squashes, juices, syrup using different seasonal fruits.	9	Demonstration, Preparation, & Group discussion
3	**UNIT - III** Preparation of pickles using fruits and vegetables.	9	Demonstration, Preparation, & Group discussion
4	**UNIT - IV** Preparation of sauce and ketchup.	9	Demonstration, Preparation, & Group discussion
5	**UNIT - V** Preparation of vathal and vadagam.	9	Demonstration, Preparation, & Group discussion

Course Designer

Mrs . K.JANAKI

Annexure -13

EVALUATION (PRACTICAL)

Internal (Formative) : 40 marks

External (Summative) : 60 marks

Question Paper Pattern for Internal Practical Examination : 40 marks

S. No	Components	Marks
1.	Recipe Planning	5
2.	Experimental Cookery	5
3.	Recipe Preparation	5
4.	Recipe Display	10
5.	Observation Note Book	5
6.	Model Exam	10
	Total	**40**

Question Paper Pattern for External Practical Examination (Major) : 60 marks

S. No	Components	Marks
1.	Recipe Planning	10
2.	Experimental Cookery	10
3.	Recipe Preparation	15
4.	Recipe Display	10
5.	Record	10
6.	Viva	5
	Total	**60**

In respect of External Examinations Passing Minimum is **35 %for Under Graduate** Courses and in total , **aggregate of 40%**

Department of N&D				Class : II N&D				
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours / Week**	**CIA**	**SE**	**Total**
III	**Skill Enhancement Course**	23OUNDSEC31	Pre-school and creche management	2	2	25	75	**100**

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✓		

Learning Objectives

To enable the students to :

1. To familiarize the students with the significance of managing the crèche and preschool
2. Understand the elements involved in organization and management of creche and Preschool.
3. Create awareness of functions of various authorities dealing with crèche and preschool.

Course Content:

UNIT I - Concept and organization of Creche and Preschool

Crèche and preschool -Meaning, types of preschools, need, importance oforganization, Elements of organization and administration.

UNIT II - Resource Management

Location, site and building, Types of rooms, Playground and safety aspects – indoor and outdoor games, Play equipment – types, criteria for selection.

UNIT III - Records and registers

Need, importance and maintenance of records and registers.

UNIT IV - Preschool Education Activities Physical & Motor Development Cognitive Development Language Development & Social & Emotional Development

UNIT V -Personnel Management

Role and qualities of teacher and care - taker and other staff involved in welfare and care of children

Books for study :

1. Ax line, V.M. (1964). Dibs in search of self. New York: Ballentine books 754
2. Clarke, P. (2001). Teaching &learning: the culture of pedagogy. New York: Sage

Books for Reference:

1. Thomson, C.L., Holmberg, M.C., Baer, D.M., Hodges, W. L., and Moore, S.G. (1978). An Experimental Analysis of Some Procedures to Teach Priming and Reinforcement Skills to Preschool Teachers. Monographs of the Society for Researchin Child Development. 43 (4), pp 1-86.
2. Jaya, N., & Jayapoorani. N. (2004). Participation in a nursery school – Laboratorymanual for students. Coimbatore: Saradalaya.
3. Tileston, D.W. (2005). Training Manual for Every Teacher, Chennai: Sage.
4. TN Forces and IAPE, (2000). Pre- school Curriculum, Activity baseddevelopmentally appropriate curriculum for preschoolers. Chennai

Web Resource / E.Books :

- https://ddceutkal.ac.in/Syllabus/MA_Education/Paper_19.pdf
- https://wcd.nic.in/sites/default/files/national_ecce_curr_framework_final_03022014% 20%282%29.pdf
- https://scert.kerala.gov.in/wp-content/uploads/2020/06/07-creche%20and%20preschool.pdf

Pedagogy:

Chalk and Talk, PPT, group discussion , quiz, on the spot test.

Rationale for nature of Course:

Knowledge and Skill:
To understand the role of preschool and crèche.

To know the concepts of crèche .

Activities to be given:
Assignment, PPT, Quiz, Group discussion.

Course learning Outcomes (CLO's):

CLO	Course Outcomes Statement	Knowledge (According to Bloom's Taxonomy)
CLO1	Describe key Concept and organization of Creche and Preschool	K1 to K3
CLO2	Explain Resource Management for creche and pre schools	K1 to K3
CLO3	Understand the criteria for Records and registers maintenance	K1 to K3
CLO4	Identify importance and Planning of Preschool Education Activities	K1 to K3
CLO5	Introduction to Personnel Management required for creche and pre schools	K1 to K3

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CLO1	3	1	1	3	1	3
CLO2	2	2	2	2	2	1
CLO3	2	1	2	3	2	3
CLO4	3	1	1	1	1	1
CLO5	2	2	3	2	2	3

1-Basic Level 2- Intermediate Level 3- Advanced Level

Annexure -13

LESSON PLAN : TOTAL HOURS (30 HRS)

Unit	Description	Hrs	Mode
1.	**UNIT I - Concept and organization of Creche and Preschool** Crèche and preschool -Meaning, types of preschools, need, importance oforganization, Elements of organization and administration.	6	Chalk and talk, Group Discussions, Quiz.
2.	**UNIT II - Resource Management** Location, site and building, Types of rooms, Playground and safety aspects – indoor and outdoor games, Play equipment – types, criteria for selection	6	Chalk and talk, Quiz.
3	**UNIT III - Records and registers** Need, importance and maintenance of records and registers.	6	Chalk and talk, PPT, On the spot Test.
4	**UNIT IV - Preschool Education Activities** Physical & Motor Development Cognitive Development Language Development & Social & Emotional Development.	6	Chalk and talk, PPT, On the spot Test.
5	**UNIT V -Personnel Management** Role and qualities of teacher and care - taker and other staff involved in welfare and care of children.	6	Chalk and talk, PPT, On the spot Test, Assignment

Course Designer:
Mrs. K.JANAKI

Annexure -13

Department of N&D				Class : II N&D				
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours / Week**	**CIA**	**SE**	**Total**
III	**Skill Enhancement Course**	23OUNDSEC32	Family Dynamics	2	2	25	75	**100**

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✓		

Learning Objectives

To enable students to
1. To acquaint the students with the dynamics of contemporary marriage and it alternates.
2. To sensitization the students to dynamics of family systems in India.
3. To make the students aware of same pertinent contemporary issues that affects the quality of life of individual families and community.

Course Content:

UNIT – I Family

Meaning, , significance of family,Types, characteristics of family. Family Dynamics – Meaning and Significance.

UNIT – II Family Patterns and Relationships

Family life cycle – stages and sub-stages Singlehood The Child-Free family: Single-parent .

UNIT – III

Marriage - Concepts of marital behavior

Selection of a life partner, Meaning, , functions, and types of marriageCharacteristics of high quality marital relationships Factors affecting marriage relationship Marital adjustments.

UNIT – IV Parent's Nurturance of Children over the Life Course

Styles of parenting small family norms family process and relationship variables.

UNIT – V

Family Crisis - Significant contemporary issues and concerns

Family crisis , Family conflict Needs and assessment Counselling – premarital and maritalHelp lines and welfare programs.

Books for study :

1.Bengston, V. L., Acock, A. C., Allen, K. R., Dilworth-Anderson, P., & Klein, D. M. (Eds.)(2005).

Sourcebook of family theory & research. New Delhi: Sage.

2.Bretherton, I. (1993). Theoretical contributions from developmental psychology. In P.G. Boss, W.J. Doherty, R. LaRossa, W.R. Schumm, & S.K. Steinmetz (Eds.), Sourcebook of family theories and methods: A contextual approach (pp. 505-524). New York, NY: Plenum.

Books for Reference:

1.Broderick, C. B. (1993) Understanding family process: Basics of family systems theory. New York: Sage.
2.Cole M & Cole. S (1993) The development of children. New York: Scientific American Books.
3.DeLamater, J., & Hyde, J. (2004). Conceptual and theoretical issues in studying sexualityin close relationships.
4.Erlbaum Heath, P. (2005). Parent-child relations: History, theory, research, and context. New Jersey: Prentice-Hall.
5.Ingoldsby, B. B., Smith, S., & Miller, J. E. (2004). Exploring family theories. Los Angeles:Roxbury. Kuczynski, L. (2002). Handbook of dynamics in parent-child relations. New York: Sage.
6.G.W. Peterson & K.R. Bush (eds). Handbook of marriage and the family (pp 423-447). New York, NY: Springer.

Web Resource / E.Books :

1.https://us.sagepub.com/sites/default/files/upm-assets/109149_book_item_109149.pdf
2.https://www.npaonline.org/sites/default/files/6.%20NPA%20Family%20Dynamics%20The%20Good%20The%20Bad%20The%20Ugly_DePasquale.pdf
3.https://www.researchgate.net/publication/327078511_Family_Dynamics_and_Intergenerational_Relations_A_psycho-Social_Analysis
4.http://www.familiesandsocieties.eu/wp-content/uploads/2014/12/WP04BernardiEtal2013.pf

Pedagogy:

Chalk and Talk, PPT, group discussion , quiz, on the spot test.

Rationale for nature of Course:

Knowledge and Skill:
To understand the role of family and relationships .

To know the concepts of marital behaviour and family crisis.

Activities to be given:
Assignment, PPT, Quiz, Group discussion

Course learning Outcomes (CLO's):

CLO	Course Outcomes Statement	Knowledge (According to Bloom's Taxonomy)
CLO1	Describe key elements of family dynamics across a range of family issues.	K1 to K3
CLO2	Explain Family Patterns and Relationships.	K1 to K3
CLO3	Understand the main content and concepts of marriage.	K1 to K3
CLO4	Identify family roles and explain theoretical Perspectives and Ecology of ParentChild Relations.	K1 to K3
CLO5	Introduction to Significant contemporary issues and concerns regarding family crisis.	K1 to K3

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CLO1	3	1	1	3	1	3
CLO2	1	2	2	1	2	1
CLO3	2	1	2	3	1	3
CLO4	3	1	1	1	1	1
CLO5	2	2	3	2	2	3

1-Basic Level 2- Intermediate Level 3- Advanced Level

Annexure -13

LESSON PLAN : TOTAL HOURS (30 HRS)

Unit	Description	Hrs	Mode
1.	**UNIT – I Family** Meaning, , significance of family,Types, characteristics of family. Family Dynamics – Meaning and Significance.	6	Chalk and talk, Group Discussions, Quiz.
2.	**UNIT – II Family Patterns and Relationships** Family life cycle – stages and sub-stages Singlehood The Child-Free family: Single-parent .	6	Chalk and talk, Quiz.
3	**UNIT – III** **Marriage - Concepts of marital behavior** Selection of a life partner, Meaning, , functions, and types of marriageCharacteristics of high quality marital relationships Factors affecting marriage relationship Marital adjustments.	6	Chalk and talk, PPT, On the spot Test.
4	**UNIT – IV Parent's Nurturance of Children over the Life Course** Styles of parenting small family norms family process and relationship variables.	6	Chalk and talk, PPT, On the spot Test.
5	**UNIT – V** **Family Crisis - Significant contemporary issues and concerns** Family crisis , Family conflict Needs and assessment Counselling – premarital and maritalHelp lines and welfare programs.	6	Chalk and talk, PPT, On the spot Test, Assignment

Course Designer:
Mrs. K.JANAKI

Department of N&D						Class : II N&D		
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours / Week**	**CIA**	**SE**	**Total**
IV	Core	23OUND41	Nutrition Through the Life Cycle.	5	5	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	**Entrepreneurship oriented**
✓		

Learning Objectives

To enable students to

1. Understand the role of nutrition in the growth and development through the lifecycle.
2. Gain insight into the principles of effective meal planning.
3. Understand the nutritional needs of various age groups.
4. Acquire skills to plan diets for various age groups across the lifecycle.

UNIT – I

Introduction to meal planning - Balanced diet, food groups, Food Guide Pyramid (ICMR), Food plate, RDA, factors affecting RDA.Principles of meal planning – steps involved in planning a diet.

Nutrition for Adult - Nutritional requirements, planning balanced dietsfor adult men and women, promoting healthy lifestyle through holistic approach.

UNIT – II

Nutrition during pregnancy-Physiological demands of pregnancy, nutritional needs, effect of nutrition on pregnancy outcome, optimal weight gain, nutrition related problems in pregnancy, complications of pregnancy.

Nutrition during lactation- Physiology of lactation, nutritional requirements, concerns of breast-feeding mother.

UNIT – III

Nutrition during infancy- Growth and development, growth standards, food and nutritional requirements, breast feeding, artificial feeding, low birth weight babies,

complementaryfeeds.

Nutrition for preschool children- Growth and development, food and nutritional requirements, eating habits and food behaviors, nutrition related problems- PEM, VAD and their dietary interventions.

UNIT – IV

Nutrition for school children- Growth pattern, nutritional requirement, importance of healthy snacks, factors affectingeating habits, school lunch.

Nutrition during adolescence- Growth and development, nutritional requirements, food habits, nutritional problems – obesity, underweight, anaemia and eating disorders.

UNIT – V

Nutrition for old age- Physiological changes in elderly, food and nutritional requirements, nutritional and healthconcerns in old age, healthy lifestyle.

Books for Study:

1.SriLakshmi, B. *Dietetics*, New Age International (p) Ltd, seventh edition Chennai, 2023.

2.Swaminathan, M *Essential of food and Nutrition*, Vols.I&II: Ganesh & CO., Madras, 1985.

Books for Reference :

1.Srilakshmi B. (2011) Dietetics, sixth edition, New age Publishing Press, New Delhi.

2.Gopalan,C., Ramanathan, P.V. Balasubramanian, S.C. (2001) Nutritive value of Indian foods, NIN, Hyderabad.

3.Longvah T, Ananthan R, Bhaskar K, Venkaiah K. (2017) Indian Food Composition Tables, National Institute of Nutrition.

4.Abraham S, Nutrition through Lifecycle. (2016) 1st edition, New age international publishers, New Delhi.

5.Stacy N, William's Basic Nutrition and Diet Therapy. (2005) 12th edition, Elseivier publications, United Kingdom.

6.Whitney EN and Rolfes SR, Understanding Nutrition. (2002) 9th edition West/Wordsworth, London.

7.Groff JL, Gropper SS, Advanced Nutrition and Human Metabolism.(2000) 3rd edition, West / Wadsworth, United Kingdom.

8.Cataldo, DeBruyne and Whitney, Nutrition and Diet therapy– Principles and Practice.(1999) 5th edition, West/ Wadsworth, London.

Web resources / E.Books:

1.http://vikaspedia.in/health/nutrition/dietary-guidelines-1/dietary-guideline-1
2.https://www.nhp.gov.in/healthlyliving/healthy-diet
3.https://motherchildnutrition.org/india/complementary-feeding-
4.guidelines.htmlhttp://vikaspedia.in/health/nutrition/dietary-guidelines-1/diet-for-children-and-adolescents
6.https://motherchildnutrition.org/india/complementary-feeding-guidelines.html
7.https://sol.du.ac.in/mod/book/view.php?id=1422&chapterid=1288

Pedagogy: Chalk and Talk, PPT, Group discussion , quiz, on the spot test and Virtual Labs, you tube links.

Rationale for nature of Course:

Knowledge and Skill:

To gain knowledge regarding the wise meal planning to all age groups.

To know about the relation between nutritious food, nutrients and health.

Activities to be given: Innovation recipes, Assignment, ppt, Quiz, Group discussion, instruct students to collect different green leafy vegetables and fruits.

Course learning Outcomes (CLO's):

CLO	Course Outcomes Statement	Knowledge (According to Bloom's Taxonomy)
CLO1	Explain the physiological basis for nutritional needs through the human lifecycle.	K1 to K3
CLO2	Identify nutrition related concerns and complications, deficiency disorders at every stage of lifecycle .	K1 to K3
CLO3	Discuss appropriate dietary guidelines for various age groups.	K1 to K4
CLO4	Develop indigenous, value added and low cost supplementary foods.	K1 to K3
CLO5	Demonstrate skills to plan and prepare appropriate and sustainable diets for different age groups.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Program Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	1	2	3	1	2	3
CLO2	2	2	2	3	2	3
CLO3	1	3	3	3	2	3
CLO4	3	2	2	3	2	2
CLO5	2	3	3	3	2	2

1-Basic Level 2- Intermediate Level 3- Advanced Level

LESSON PLAN : TOTAL HOURS (75 HRS)

Unit	Description	Hrs	Mode
1.	**Unit – I Introduction to meal planning -** Balanced diet, food groups, Food Guide Pyramid (ICMR), Food plate, RDA, factors affecting RDA.Principles of meal planning – steps involved in planning a diet. **Nutrition for Adult** - Nutritional requirements, planning balanced dietsfor adult men and women, promoting healthy lifestyle through holistic approach.	12	Chalk and talk, Group Discussions, Quiz.
2.	**Unit – II**. **Nutrition during pregnancy**- Physiological demands of pregnancy, nutritional needs, effect of nutrition on pregnancy outcome, optimal weight gain, nutrition related problems in pregnancy, complications of pregnancy. **Nutrition during lactation**- Physiology of lactation, nutritional requirements, concerns of breast-feeding mother.	18	Chalk and talk, Quiz.
3	**Unit – III Nutrition during infancy**- Growth and development, growthstandards, food and nutritional requirements, breast feeding, artificial feeding, low birth weight babies, complementaryfeeds. **Nutrition for preschool children**- Growth and development,food and nutritional requirements, eating habits and food behaviors, nutrition related problems- PEM, VAD and their dietary interventions.	15	Chalk and talk, PPT, On the spot Test.
4	**Unit –IV Nutrition for school children**- Growth pattern, nutritional requirement, importance of healthy snacks, factors affectingeating habits, school lunch. **Nutrition during adolescence**- Growth and development, nutritional requirements, food habits, nutritional problems – obesity, underweight, anaemia and eating disorders.	15	Chalk and talk, PPT, On the spot Test.
5	**Unit –V Nutrition for old age**- Physiological changes in elderly, food and nutritional requirements, nutritional and healthconcerns in old age, healthy lifestyle.	15	Chalk and talk, PPT, On the spot Test, Assignment

Course Designer

Mrs. P.TAMILARASI

Annexure -13

Department of N&D				Class : II N&D				
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours / Week**	**CIA**	**SE**	**Total**
IV	Core	23OUND4P	Nutrition Through the Life Cycle Practical	3	3	40	60	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	**Entrepreneurship oriented**
✓		

Learning Objectives

To enable the students to :

1.Understand the role of nutrition in the growth and development through the lifecycle. `
2.Know the nutritional requirements during the life cycle and RDA for different age groups.
3.Gain insight into the principles of effective meal planning.
4. Acquire knowledge to do nutritive value calculation for the prescribed menu.

UNIT – I Preparation of Complementary feed.

Planning and preparation of diets for different activitylevels and income group.

UNIT – II Planning and preparation of balanced diets for special Physiological conditions.

a. Expectant mother.
b. Nursing mother.

UNIT – III Planning and preparation of balanced diets for different age groups

a. Pre-school child.
b. School going children.
c. Packed lunch for school.

UNIT – IV Planning and preparation of balanced diets for different age groups

a. Adolescents
b. Adult
c. Old age

UNIT - V

Planning and preparation of diets (low and medium cost) for deficiency diseases-

a. PEM

b. Vitamin A deficiency
c. Nutritional anemia

Books for study :

1.SriLakshmi, B. *Dietetics*, New Age International (p) Ltd, seventh edition Chennai, 2023.

2.Swaminathan, M *Essential of food and Nutrition*, Vols.I&II: Ganesh & CO., Madras, 1985.

Books for Reference :

1.Srilakshmi B. (2011) Dietetics, sixth edition, New age Publishing Press, New Delhi.

2.Gopalan,C., Ramanathan, P.V. Balasubramanian, S.C. (2001) Nutritive value of Indian foods, NIN, Hyderabad.

3.Longvah T, Ananthan R, Bhaskar K, Venkaiah K. (2017) Indian Food Composition Tables, National Institute of Nutrition.

4.Abraham S, Nutrition through Lifecycle. (2016) 1st edition, New age international publishers, New Delhi.

5.Stacy N, William's Basic Nutrition and Diet Therapy. (2005) 12th edition, Elseivier publications, United Kingdom.

6.Whitney EN and Rolfes SR, Understanding Nutrition. (2002) 9th edition West/Wordsworth, London.

7.Groff JL, Gropper SS, Advanced Nutrition and Human Metabolism.(2000) 3rd edition, West / Wadsworth, United Kingdom.

8.Cataldo, DeBruyne and Whitney, Nutrition and Diet therapy– Principles and Practice.(1999) 5th edition, West/ Wadsworth, London.

Web Resources / E - Books:

1. **https://youtu.be/7AWmQ7NuE38?si=2sTGGtBxaC8hDvnJ**
2. **https://youtu.be/kdfFTRbHsIU?si=HA1NpUIqJB4o7maT**
3. **https://youtu.be/9c9BF-oKSUY?si=plVIBEk6QOzOmjM_**
4. **https://www.mealplansite.com/age/adolescent.aspx**
5. **https://www.healthline.com/nutrition/easy-and-healthy-meal-plan**
6. **https://thegeriatricdietitian.com/healthy-7-day-meal-plan-for-elderly/**

Pedagogy

Menu planning, Nutritive value calculation, demo, method of cooking and preparation.

Rationale for nature of Course:

Knowledge and Skill:

To gain knowledge regarding the menu planning, and nutritive value of different foods.

To know about the RDA value for different age groups.

To acquire knowledge on nutritive value calculation for the prescribed menu.

Activities to be given:

Innovation recipes, Menu planning, Nutritive value calculation, Assignment, Group discussion.

LESSON PLAN : TOTAL HOURS (45 HRS)

Unit	Description	Hrs	Mode
1	**Unit – I** Preparation of Complementary feed. Planning and preparation of diets for different activitylevels and income group.	9	Demonstration, Preparation, & Group discussion
2	**Unit-II** Planning and preparation of balanced diets for special Physiological conditions. a. Expectant mother. b. Nursing mother.	9	Demonstration, Preparation, & Group discussion
3	**Unit - III** Planning and preparation of balanced diets for different age groups a. Pre-school child. b. School going children. c. Packed lunch for school	9	Demonstration, Preparation, & Group discussion
4	**Unit - IV** Planning and preparation of balanced diets for different age groups a. Adolescents b. Adult c. Old age	9	Demonstration, Preparation, & Group discussion
5	**Unit - V** Planning and preparation of diets (low and medium cost) for deficiency diseases- a. PEM b. Vitamin A deficiency c. Nutritional anemia	9	Demonstration, Preparation, & Group discussion

Course Designer

Mrs . P.TAMILARASI

EVALUATION (PRACTICAL)

Internal (Formative) : 40 marks

External (Summative) : 60 marks

Question Paper Pattern for Internal Practical Examination : 40 marks

S. No	Components	Marks
1.	Menu Planning	5
2.	Calculation	5
3.	Menu Preparation	5
4.	Menu Display	10
5.	Observation Note Book	5
6.	Model Exam	10
	Total	**40**

Question Paper Pattern for External Practical Examination (Major) : 60 marks

S. No	Components	Marks
1.	Menu Planning	10
2.	Calculation	10
3.	Menu Preparation	15
4.	Menu Display	10
5.	Record	10
6.	Viva	5
	Total	**60**

In respect of External Examinations Passing Minimum is **35 %for Under Graduate** Courses and in total, **aggregate of 40%**

Sem	Category	Course Code	Course Title	Credits	Contact Hours / Week	CIA	SE	Total
IV	GEC	23OUNDGEND4	Foundations of Baking & Confectionary	3	4	25	75	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	**Entrepreneurship oriented**
		✓

Learning Objectives

To enable students to
1. Gain insight into the planning and operation of bakery unit.
2. Familiarize with the equipments and tools, hygienic practices relating to baking .
3. Understand the role of various ingredients used in the making of breads, cakes, cookies, pastries and various confectioneries.
4. Acquire skills in baking and confectionery with an emphasis on special dietary needs.

UNIT – I

An Overview of Bakery Industry- Current status and growth of bakery industry in India. Baking – principles, process. Layout and organization of a bakery unit.Equipment and tools used in baking and confectionery. Bakery sanitation and personnel hygiene.

UNIT – II

Ingredients in Bakery and Confectionery

Ingredients - Flour, Sugar, Shortenings, Egg, Leavening agents-yeast,baking soda, baking powder, chocolates, cocoa powder. Other ingredients- salt, milk and milk derivatives, malt products, dough improver, oxidizing agents, flavours and colors, nuts, spices and condiments, preserved and candied fruit peels.

UNIT – III

Breads and Cakes

Bread - ingredients, types of breads, faults and its prevention

Cakes – ingredients, types of cakes, **c**ake judging, faults and remedies.Different types and techniques of cake decoration -icings and fillings.

UNIT – IV

Pastries, Cookies and Biscuits
Pastries- types of pastries- puff pastry, short crust, phyllo pastry, flakypastry, choux pastry
Cookies & biscuits – ingredients, types and processing.

UNIT – V
Confectionery and Marketing of Baked Products Chocolates- production, types, chocolate decorations **S**ugar based confectionery – fudge, fondant, sugar candies.
Marketing and sales promotion- costing, packaging and labelling.

Books for Study:
1.Thangam E. Philip *Modern Cookery* (Vols I and II), Orient Long Man, Mumbai, 1999.
2.Yogambal Sivalingam, *Theory of Bakery and Confectionery* Visaga Publication, 2005.

Books for Reference :
1.John Kingslee (2006) A Professional Text book to Bakery and Confectionary. New AgeInternational Pvt Limited Publisher, New Delhi.
2.Uttam K Singh (2011).Theory of Bakeryand Confectionary- An Operational Approach.Kanishka Publishers and Distributors, New Delhi.
3.Yogamba lAshokkumar (2012) Theory of Bakery and Confectionary, PHI publication.New Delhi.
4.Nicolello, I. and Foote, R (2000). Complete Confectionary Techniques. Hodder andSolution, London.
5.Bakers hand Book on practical Baking (2000) Published by U.S. Wheat Associates, NewDelhi.
6.Dubey. S.C (2002) Basic Baking.4th Edition. Published by the Society of Indian Bakers,New Delhi.
7.Sarah R. Lebensky, Pricilla et al., (2004) Textbook of Baking and Pastry Fundamentals,third edition, Pearson Education Ltd.
8.The Culinary Institute of America, Baking & Pastry: Mastering the Art and Craft, JohnWiley &Sons,Inc New Jersy. 2009.

Web resources / E.Books:

1. https://www.youtube.com/watch?v=dfvkplBBO2g
2. https://www.lifestyleasia.com/ind/food-drink/dining/bookmark-the-best-baking-youtube-channels-to-bake-like-a-pro/
3. www.bakels.in

Pedagogy: Chalk and Talk, PPT, Group discussion , quiz, on the spot test and Virtual Labs, you tube links.

Rationale for nature of Course:

Knowledge and Skill:

To gain knowledge regarding the basic concepts of bakery and confectionary.

To know about the marketing skills and promotion of the bakery products.

Activities to be given:

Innovation recipes, Assignment, ppt, Quiz, Group discussion, instruct students to do different pastries .

Course learning Outcomes (CLO's):

CLO	Course Outcomes Statement	Knowledge (According to Bloom's Taxonomy)
CLO1	Understand the principles and process of baking and confectionery.	K1 to K3
CLO2	Acquire knowledge on role of various ingredients used in baking and confectionery.	K1 to K3
CLO3	Develop skills to design baked goods using alternative healthy ingredients to caterto special dietary needs.	K1 to K4
CLO4	Identify and control faults in baking.	K1 to K3
CLO5	Enhance entrepreneurial skills in bakery and confectionery to establish a bakeryunit.	K1 to K4

Mapping of Course Learning Outcomes (CLOs) with Program Outcomes (POs)

	PO1	PO2	PO3	PO4	PO5	PO6
CLO1	1	3	3	1	2	3
CLO2	3	2	2	3	3	3
CLO3	2	3	3	2	2	3
CLO4	3	2	2	3	3	3
CLO5	1	3	3	2	2	2

1-Basic Level 2- Intermediate Level 3- Advanced Level

Annexure -13

LESSON PLAN : TOTAL HOURS(75 HRS)

Unit	Description	Hrs	Mode
1	**Unit – I An Overview of Bakery Industry-** Current status and growth of bakery industry in India. Baking – principles, process. Layout and organization of a bakery unit.Equipment and tools used in baking and confectionery. Bakery sanitation and personnel hygiene.	15	Chalk and talk, Group Discussion, Quiz.
2	**Unit – II Ingredients in Bakery and Confectionery** Ingredients - Flour, Sugar, Shortenings, Egg, Leavening agents- yeast,baking soda, baking powder, chocolates, cocoa powder. Other ingredients- salt, milk and milk derivatives, malt products, dough improver, oxidizing agents, flavours and colors, nuts, spices and condiments, preserved and candied fruit peels.	15	Chalk and talk, Quiz.
3	**Unit – III Breads and Cakes** **Bread -** ingredients, types of breads, faults and its prevention **Cakes** – ingredients, types of cakes, **c**ake judging, faults and remedies.Different types and techniques of cake decoration - icings and fillings.	15	Chalk and talk, PPT, On the spot Test
4	**Unit –IV Pastries, Cookies and Biscuits** **Pastries-** types of pastries- puff pastry, short crust, phyllo pastry, flakypastry, choux pastry **Cookies & biscuits** – ingredients, types and processing.	15	Chalk and talk, PPT, On the spot Test.
5	**Unit-V Confectionery and Marketing of Baked Products** Chocolates- production, types, chocolate decorations **S**ugar based confectionery – fudge, fondant, sugar candies. **Marketing and sales promotion**- costing, packaging and labelling.	15	Chalk and talk, PPT, On the spot Test, Assignment.

Course Designer:
Mrs. B. RUBARANI

Department of N&D						Class : II N&D		
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours / Week**	**CIA**	**SE**	**Total**
IV	GEC	23OUNDGEND4P	Foundations of Baking & Confectionary Practical.	2	2	40	60	100

Nature of the Course		
Knowledge and Skill Oriented	**Employability Oriented**	**Entrepreneurship oriented**
		✓

Learning Objectives

To enable students to
1. Gain insight into the planning and operation of bakery unit..
2. Familiarize with the equipments and tools, hygienic practices relating to baking .
3. Understand the role of various ingredients used in the making of breads, cakes, cookies, pastries and various confectioneries.
4. Acquire skills in baking and confectionery with an emphasis on special dietary needs.

UNIT – I
Preparation of buns, rolls, soup sticks, rusk and pizza base.

UNIT – II
Preparation of angel food cake, butter cake, sponge cake, chocolate cake, pound cake.

UNIT – III
Modified baked products - high fibre, low / alternate sugar, low fat,gluten free, and millet based bakery products for special nutritionalrequirements.

UNIT – IV
Preparation of types of pastries- puff pastry, short crust, phyllo pastry, flakypastry, choux pastry.
Preparation of biscuits and cookies.

UNIT – V

Preparation of different chocolates, chocolate decorations.
Preparation of Sugar based confectionery – fudge, fondant, sugar candies.

Books for Study:

1.Thangam E. Philip *Modern Cookery* (Vols I and II), Orient Long Man, Mumbai, 1999.
2.Yogambal Sivalingam, *Theory of Bakery and Confectionery* Visaga Publication, 2005.

Books for Reference :

1.John Kingslee (2006) A Professional Text book to Bakery and Confectionary. New AgeInternational Pvt Limited Publisher, New Delhi.
2.Uttam K Singh (2011).Theory of Bakeryand Confectionary- An Operational Approach.Kanishka Publishers and Distributors, New Delhi.
3.Yogamba lAshokkumar (2012) Theory of Bakery and Confectionary, PHI publication.New Delhi.
4.Nicolello, I. and Foote, R (2000). Complete Confectionary Techniques. Hodder andSolution, London.
5.Bakers hand Book on practical Baking (2000) Published by U.S. Wheat Associates, NewDelhi.
6.Dubey. S.C (2002) Basic Baking.4th Edition. Published by the Society of Indian Bakers,New Delhi.
7.Sarah R. Lebensky, Pricilla et al., (2004) Textbook of Baking and Pastry Fundamentals,third edition, Pearson Education Ltd.
8.The Culinary Institute of America, Baking & Pastry: Mastering the Art and Craft, JohnWiley &Sons,Inc New Jersy. 2009.

Web resources / E.Books:

1. https://www.youtube.com/watch?v=dfvkplBBO2g
2. https://www.lifestyleasia.com/ind/food-drink/dining/bookmark-the-best-baking-youtube-channels-to-bake-like-a-pro/
3. www.bakels.in

Pedagogy: Chalk and Talk, PPT, Group discussion , quiz, on the spot test and Virtual Labs, you tube links.

Rationale for nature of Course:

Knowledge and Skill:

To gain knowledge regarding the skills on basic concepts of bakery and confectionary.

To know about the preparation of bakery and confectionary products.

Activities to be given:

Innovation recipes, Assignment, ppt, Quiz, Group discussion, instruct students to do different pastries .

LESSON PLAN : TOTAL HOURS(60 HRS)

Unit	Description	Hrs	Mode
1	**Unit – I** Preparation of buns, rolls, soup sticks, rusk and pizza base.	9	Chalk and talk, Group Discussion,
2	**Unit – II** Preparation of angel food cake, butter cake, sponge cake, chocolate cake, pound cake.	12	Chalk and talk, Demonstration.
3	**Unit – III** Modified baked products - high fibre, low / alternate sugar, low fat,gluten free, and millet based bakery products for special nutritionalrequirements.	15	Chalk and talk, PPT, Demonstration, Preparation.
4	**Unit –IV** Preparation of types of pastries- puff pastry, short crust, phyllo pastry, flakypastry, choux pastry. Preparation of biscuits and cookies.	9	Demonstration, Preparation.
5	**Unit-V** Preparation of different chocolates, chocolate decorations. Preparation of Sugar based confectionery – fudge, fondant, sugar candies.	15	Demonstration, Preparation.

Course Designer:
Mrs. B. RUBARANI

Annexure -13

EVALUATION (PRACTICAL)

Internal (Formative) : 40 marks

External (Summative) : 60 marks

Question Paper Pattern for Internal Practical Examination : 40 marks

S. No	Components	Marks
1.	Recipe Planning	5
2.	Experimental Cookery	5
3.	Recipe Preparation	10
4.	Recipe Display	5
5.	Observation Note Book	5
6.	Model Exam	10
	Total	**40**

Question Paper Pattern for External Practical Examination (Major) : 60 marks

S. No	Components	Marks
1.	Recipe Planning	10
2.	Experimental Cookery	10
3.	Recipe Preparation	15
4.	Recipe Display	10
5.	Record	10
6.	Viva	5
	Total	**60**

In respect of External Examinations Passing Minimum is **35 %for Under Graduate** Courses and in total , **aggregate of 40%**

Department of N&D				**Class : II N&D**				
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours / Week**	**CIA**	**SE**	**Total**
IV	**Skill Enhancement Course**	23OUNDSEC41	Nutritional assessment and diet counselling	2	2	25	75	**100**

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
	✓	

Learning Objectives

To enable the students to :

1. Learn the different methods and techniques available to assess nutritional status.
2. Use age and gender specific techniques to assess nutritional status.
3. Learn the significance of assessment parameters in conditions of health and disease.

Course Content:

UNIT I- Nutritional screening

Nutritional assessment and Identification of at-risk groups.
Estimation of total energy requirement using factorial method. nutritional remedies.

UNIT II -Anthropometric assessment

Measurements of height, weight, mid arm circumference, waist circumference
Measurement of Body fat using skin fold calipers.

UNIT III -Clinical and Biochemical assessment

Use clinical examination schedule and conduct clinical examination under the guidance of medical supervisor to identify nutrient deficiencies (preferably preschool children)
Learn the biochemical tests to be conducted to analyse nutritional deficiencies.

UNIT IV - Dietary assessment

Estimate nutrient intake using 24-hour recall, food frequency questionnaire.
Conduct diet survey and suggest alterations in food intake to improve nutrient adequacy.

UNIT V- Diet counseling

Preparing a nutritional assessment sheet for the given patient Planning a diet counselling program

with components such as assessment of needs, education of the patient, follow up and establishing rapport with the patient and family member.

Books for study :

1. Gelso Charles,J. and Fretz Bruce, R. (1995) Counselling Psychology, aPRISMIndian edition Harcourt Brace College Publishers
2. Gibney, M.J., Margetts, B.M., Kearney, J.M. and Arab, L. (2013). PublicHealthNutrition. John Wiley & Sons Inc., New Delhi.

Books for Reference:

1. Guthrie H.A. (1983) Introductory Nutrition C.V. Mosby Co. St. Louis.
2. Insel, P., Ross, D., McMahon, K. And Bernstein, M. (2014). Nutrition, 15th edition.Jones & Bartlett Learning, USA.
3. Maurice E. Shils, James A. Olson, Moshe Shike (1994) "Modern Nutrition in healthand disease", eighth edition, Vol. I & II Lea & Febiger Philadelphia, A Waverly Company.
4. Schlenker, E.D. and Long, S. (2007). Williams' Essentials of Nutrition & DietTherapy, 9th edition. Mosby Elsevier, Canada.
5. Srilakshmi, B. (1997) Dietetics New Age International (P) Ltd,
6. Wardlaw, G.M. Insel, P.H. (1990) Perspectives in Nutrition , Times Mirror / MosbyCollege Publishing Co. St. Louis, Toronto, Boston.

Web Resource / E.Books :

1. http://www.merck.com/mmhe/seciz/ch155/ch155a.html
2. .http://www.whereincity/medical/vitamins

Pedagogy:

Chalk and Talk, PPT, group discussion , quiz, on the spot test.

Rationale for nature of Course:

Knowledge and Skill:
To understand the organizational procedures of the front office.

To know the departments associated with front office.

Activities to be given:
Assignment, Ppt, Quiz, Group discussion.

Course learning Outcomes (CLO's):

CLO	Course Outcomes Statement	Knowledge (According to Bloom's Taxonomy)
CLO1	Screen the nutritional status of subjects using appropriate tools.	K1 to K3
CLO2	Use anthropometric methods of assessment to classify subjects a belonging to normal, under nutrition, overweight or obesity.	K1 to K3
CLO3	Evaluate micronutrient adequacy using clinical and biochemical assessment techniques.	K1 to K3
CLO4	Determine adequacy of nutrient intake employing suitable dietary assessment Techniques.	K1 to K3
CLO5	Acquire skills in diet counselling using nutritional techniques.	K1 to K3

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CLO1	1	3	1	3	3	2
CLO2	2	2	3	1	2	2
CLO3	2	2	2	2	2	3
CLO4	3	1	3	2	2	2
CLO5	2	3	3	3	3	3

1-Basic Level 2- Intermediate Level 3- Advanced Level

Annexure -13

LESSON PLAN : TOTAL HOURS (30 HRS)

Unit	Description	Hrs	Mode
1.	**UNIT I- Nutritional screening** Nutritional assessment and Identification of at-risk groups. Estimation of total energy requirement using factorial method. nutritional remedies.	6	Chalk and talk, Group Discussions, Quiz.
2.	**UNIT II -Anthropometric assessment** Measurements of height, weight, mid arm circumference, waist circumference Measurement of Body fat using skin fold calipers.	6	Chalk and talk, Quiz.
3	**UNIT III -Clinical and Biochemical assessment** Use clinical examination schedule and conduct clinical examination under the guidance of medical supervisor to identify nutrient deficiencies (preferably preschool children) Learn the biochemical tests to be conducted to analyse nutritional deficiencies.	6	Chalk and talk, PPT, On the spot Test.
4	**UNIT IV - Dietary assessment** Estimate nutrient intake using 24-hour recall, food frequency questionnaire. Conduct diet survey and suggest alterations in food intake to improve nutrient adequacy.	6	Chalk and talk, PPT, On the spot Test.
5	**UNIT V- Diet counseling** Preparing a nutritional assessment sheet for the given patient Planning a diet counselling program with components such as assessment of needs, education of the patient, follow up and establishing rapport with the patient and family member.	6	Chalk and talk, PPT, On the spot Test, Assignment

Course Designer:

Mrs. P. Tamilarasi

Department of N&D				Class : II N&D				
Sem	**Category**	**Course Code**	**Course Title**	**Credits**	**Contact Hours / Week**	**CIA**	**SE**	**Total**
IV	**Skill Enhancement Course**	23OUNDSEC42	Front Office Management	2	2	25	75	**100**

Nature of the Course		
Knowledge and Skill Oriented	Employability Oriented	Entrepreneurship oriented
✓		

Learning Objectives

To enable students to
1.Understand the varied dimensions of the food service industry with special reference to front office.
2.Study the concepts of organization, communication and operational procedures in front office.
3.Develop skills to effectively manage the front department food serve institutions.

Course Content:

UNIT – I

Classification of hotels - Classification of hotels based on star category, size, ownership andother categories. Types of rooms.

UNIT – II

Hotel organization and functions - Organization pattern in a large, medium and small sized hotel. Functionsof receptionist, job description of front office manager, assistant front office manager, assistant manager, reservation manager, lobby manager, front office assistants, night manager, night clerk, bell captain and bellboy.

UNIT – III

Hotel organization and functions - Tariff, basis of charging, tariff fixation, room tariff card- group rate, volume rate, executive business service rates, tour group wholesale rate, discounted rate, crib rate, extra bed rate, family rate, crew rate corporate rate and student faculty programme.

UNIT – IV

Front office and guest handling - Stages of guest contact with the hotel-the guest arrival, preparing, and receiving, registration procedure-systems of registration, rooming of guest, group arrival, VVIP guest arrival and greeting. Activities of front desk during stay- mail and message handling, safe

deposit boxes.

UNIT – V

Guest accounting - Basics of keeping accounts, guest ledger, city ledger- accounting entries,front office cashiering, guest accounting process, night auditing- night audit duties, night audit process, night audit report and departure procedure.

Books for study :

1.Sudhir Andrews, *Hotel Front Office Training Manual* – Tata McGraw Hill Publishing Company Ltd. New Delhi, 2018.
2.Roday.s,*Food Hygiene and Sanitation*,TataMc Graw Hill Publishing Company Ltd,2006.

Books for Reference:

1.Ahmed Ismail (2004). Front office operations and management, Delmar Publications.
2.Andrews.S (1982) , Hotel Front office training manual , Tata mc Graw Hillpublishing company Ltd, New Delhi.
3.Chon K and Raymond. T S (2001) . Welcome to hospitality- An introduction- II nd Edition, Delamar publication.
4.Raghubalan G, Raghubalan .S(2001). Hotel housekeeping operations and management, Oxford University Press.

Web Resource / E.Books :

1. http://paramjamwal.blogspot.in/2013/11/duties-and-responsibilities-of.html
2. http://www.hotelhousekeeping.org/Hotel-Housekeeping-Duties.html
3. http://hotel-industry.learnhub.com/lesson/7885-importance-of-housekeeping

Pedagogy:

Chalk and Talk, PPT, group discussion , quiz, on the spot test.

Rationale for nature of Course:

Knowledge and Skill:
To understand the organizational procedures of the front office.

To know the departments associated with front office.

Activities to be given:
Assignment, Ppt, Quiz, Group discussion.

Course learning Outcomes (CLO's):

CLO	Course Outcomes Statement	Knowledge (According to Bloom's Taxonomy)
CLO1	Classify hotels and rooms based on star category, ownership, location etc.	K1 to K3
CLO2	Describe the organization chart of a front office department and duties andFunctions of front office staff.	K1 to K3
CLO3	Explain the basis of tariff fixation and guest registration process.	K1 to K3
CLO4	Evaluate the role of front office in ensuring customer comfort and satisfactionfrom check -in to check out at the hotel.	K1 to K3
CLO5	Summarize the role of the guest accounting process and each of the front office staff.	K1 to K3

Mapping of Course Learning Outcomes (CLOs) with Programme Outcomes (POs)

	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**
CLO1	1	3	1	3	3	2
CLO2	2	2	3	1	2	2
CLO3	2	2	2	2	2	3
CLO4	3	1	3	1	1	2
CLO5	1	3	3	3	3	3

1-Basic Level 2- Intermediate Level 3- Advanced Level

Annexure -13

LESSON PLAN : TOTAL HOURS (30 HRS)

Unit	Description	Hrs	Mode
1.	**Unit – I Classification of hotels -** Classification of hotels based on star category, size, ownership andother categories. Types of rooms.	6	Chalk and talk, Group Discussions, Quiz.
2.	**Unit – II Hotel organization and functions -** Organization pattern in a large, medium and small sized hotel. Functionsof receptionist, job description of front office manager, assistant front office manager, assistant manager, reservation manager, lobby manager, front office assistants, night manager, night clerk, bell captain and bellboy.	6	Chalk and talk, Quiz.
3	**Unit – III Hotel organization and functions -** Tariff, basis of charging, tariff fixation, room tariff card- group rate, volume rate, executive business service rates, tour group wholesale rate, discounted rate, crib rate, extra bed rate, family rate, crew rate corporate rate and student faculty programme.	6	Chalk and talk, PPT, On the spot Test.
4	**Unit –IV Front office and guest handling -** Stages of guest contact with the hotel-the guest arrival, preparing, and receiving, registration procedure-systems of registration, rooming of guest, group arrival, VVIP guest arrival and greeting. Activities of front desk during stay-mail and message handling, safe deposit boxes.	6	Chalk and talk, PPT, On the spot Test.
5	**Unit –V Guest accounting -** Basics of keeping accounts, guest ledger, city ledger- accounting entries, front office cashiering, guest accounting process, night auditing- night audit duties, night audit process, night audit report and departure procedure.	6	Chalk and talk, PPT, On the spot Test, Assignment

Course Designer:

Mrs. B.RUBA RANI