



மனோன்மணியம் சுந்தரனார் பல்கலைக்கழகம்
MANONMANIAM SUNDARANAR UNIVERSITY

**SYLLABUS FOR DIPLOMA IN FOOD PROCESSING PROGRAM OFFERED
THROUGH DIRECTORATE OF VOCATIONAL EDUCATION (COMMUNITY
COLLEGES AND VOCATIONAL SKILL DEVELOPMENT CENTRES) FROM 2019 –
2020**



கல்விசார் நிலைக்குழுக் கூட்டம்

**MEETING OF THE STANDING COMMITTEE ON
ACADEMIC AFFAIRS HELD ON WEDNESDAY
THE 22nd JANUARY 2020**

Program Code: 5225

DIPLOMA IN FOOD PROCESSING

உணவு பதப்படுத்துதலில் பட்டயம்

SCHEME OF EXAMINATION

Subject code	Title of the Course	Credit	Hours	Passing Minimum
Semester I				
C19FG11/E19FG01	Fundamentals of Food Science	6	90	40/100
C19FG12/E19FG02	Food Processing and Preservation in general	6	90	40/100
C19FG13/E19FG03	Fundamentals of Food Nutrition	6	90	40/100
C19CE10/E19CE10	Communicative English	6	90	40/100
C19FGP1/E19FGP1	Practical I	4	120	40/100
Semester II				
C19FG21/E19FG04	Meat & Fishery Products Processing	6	90	40/100
C19FG22/E19FG05	Dairy & Agro Products Processing Management	6	90	40/100
C19LS23/E19LS05	Life skill	6	90	40/100
C19FGP2/E19FGP2	Practical II	4	120	40/100
C19FGPW/E19FGPW	Project work	10	150	40/100

Eligibility for admission: Pass in 10thstd examination conducted by the Govt. of Tamil Nadu Board of Secondary Education, Government of Tamil Nadu or any other equivalent examination.

Examination: Passing Minimum for each Course is 40%. Classification will be done on the basis of percentage marks of the total marks obtained in all the Courses and as given below:

- 40 % but less than 50 % - Third class
- 50 % but less than 60 % - Second class
- 60 % and above - First class

Theory Paper

Internal Marks-25

External Marks-75

Syllabus

First Semester:-

- Course I - Fundamentals of Food Science
- Course II - Food Processing and Preservation in general
- Course III - Fundamentals of Food Nutrition
- Course IV - Communicative English
- Course V - Practical I

Second Semester:-

- Course VI - Meat & Fishery Products Processing
- Course VII - Dairy & Agro Products Processing Management
- Course VIII - Life Skill
- Course IX - Practical II
- Course X - Project work

***(Semester Pattern for Community College Only)**

PROGRAM OBJECTIVES:

- The major objective of this course is to learn about the principles of , and equipment for, processing of food with heat addition or removal, with deeper understanding of how different processing conditions and method in affect the safety and quality of resulting food products. The programme will also give understanding of the advanced principles of food processing and how to choose a method of preservation in relation to food composition.

Semester I
Course I
(C19FG11/E19FG01) Fundamentals of Food Science

OBJECTIVES:

- To know about the basics of food science and fundamentals of foods.
- To learn about preservation, selection and evaluation of food.
- To study about the concepts of food and diet.
- To learn the duties and responsibilities of food regulatory agencies.

Unit I **18 Hrs**

what is Food science, Concept & Objectives of Food & Food science, Classification of Food, Function of Food.

Unit II **18 Hrs**

Fundamentals of Foods, Food additives, Introduction to Food Preservation & Packaging.

Unit III **18 Hrs**

Food selection & Sensory evaluation, sensory evaluation exercise, Food preparation basis, Water in Food & Food preparation.

Unit IV **18 Hrs**

Food & Diet, Menu planning, Beverages, Organic foods, genetically modified foods.

Unit V **18 Hrs**

Food regulatory agencies & Food labelling, Food poisoning & Food content, Food purchasing & Food supply.

References:

1. Brown Ancy. Understanding Food principles & Preservation. Wordsworth Thomson Learning; 4thEdn 2011.
2. Nutritive value of Indian foods, Gopalan C Ramasastri, S.C. Balasubramainian, National Institutes of Nutrition, 1993.
3. Essential of Food & Nutrition Vol. 1, Dr.Swaminathan, 2ndEdu, BAPPCO. 1985.

Course II
(C19FG12/E19FG02)Food processing & Preservation in General

OBJECTIVES:

- To acquaint the students with the principles of food preservation and various preservation techniques of food.
- To study about the equipments used for preserving food.
- To learn about the classification of various food items.

Unit I

18 Hrs

Introduction to Food Preservation- Concepts, Importance & Principles of Food preservation.

Unit II

18 Hrs

Concept & History of preservation techniques by Drying – Types of Drying & Dryers – Processing prior to drying.

Unit III

18 Hrs

Concept & Importance of Preservation by using high temperature; Methods used – Pasteurization, Boiling & Canning; Effect of high temperature on food.

Unit IV

18 Hrs

Low temperature preservation – Concept & History; Types of preservation methods by low temperature – Equipments used; Treatment before freezing the food.

Unit V

18 Hrs

Classification of Fruits & Vegetables, Meat & Fishery product, Dairy products.

References Books:

1. Food processing and preservation, B. Sivasankar, 2002, Prentice Hall Pvt. Ltd pub.
2. Hand book of Food Processing: Food Preservation, T. Varzakas and C.Tzia, 2015, CRC Press pub.
3. Food Processing, J.S. Carl, 2008, E. Book (ISBN: 978-87-7681-780-0)
4. Food Processing and Preservation, 2006, G. Subalakshmi and U.A.Shobha, New Age International Pub.

Course III

(C19FG13/E19FG03) Fundamentals of Food nutrition

OBJECTIVES:

- To study the fundamentals of nutrition and various types of nutrients.
- To learn about the food planning and management.
- To learn the methods of food selection and preservation.
- To have an insight of food safety and food standards.

Unit I:

18 Hrs

Introduction to study of Nutrition – Foods, Nutrition & Health – Digestion, Absorption & Utilization nutrients – Recommended levels of nutrients.

Unit II:

18 Hrs

Function of nutrients – Carbohydrates, Fats & Oils, Proteins & Amino acids, Vitamins and Minerals & Water.

Unit III:

18 Hrs

Food planning & Management – Guidelines for adequate food planning & various age groups, Family – Indian meal planning – Vegetarian & Non vegetarian.

Unit IV:

18 Hrs

Food selection & Food preservation – Selection, purchase & Storage of food. Food Preparation & Preservation – their methods.

Unit V:

18 Hrs

Food safety & supply v Food sanitation & Hygiene, Food borne disease, Food standards & Laws.

References:

1. Fundamentals of Foods & Nutrition by Sumati R.M. & M.V. RajaGopal, New Age International (P) ltd, Publishers, New Delhi.
2. Fundamentals of Human nutrition.
3. Applied nutrition, R. Rajaleshmi, Oxford & IBH Publi.Co.Pvt. Ltd, 3rd Edn. 1981.

Course IV

(C19CE10/E19CE10)COMMUNICATIVE ENGLISH

1. **Basic Grammar:**

- a. Review of grammar
- b. Remedial study of grammar
- c. Simple sentence
- d. Word passive voice etc.

2. **Bubbling Vocabulary:**

- a. Synonyms
- b. Antonyms
- c. One – work Institution

3. **Reading and Understanding English**

- a. Comprehension passage
- b. Précis – writing
- c. Developing a story from hints.

4. **Writing English**

- a. Writing Business letters.
- b. Paragraph writing
- c. Essay writing
- d. Dialogue writing

5. **Speaking English**

- a. Expressions used under different circumstances
- b. Phonetics

Reference : 1. V.H.Baskaran – “English Made Easy”

2. V.H.Baskaran – “English Composition Made Easy”

(Shakespeare Institute of English Studies, Chennai)

3. N.Krishnaswamy – “Teaching English Grammar”

(T.R.Publication, Chennai)

4. “Life Skill” – P.Ravi, S.Prabakar and T.Tamzil Chelvam,

M.S.University, Tirunelveli.

Course V

(C19FGP1/E19FGP1) Practical- I

OBJECTIVES:

The student should be made to:

- Be exposed to the measurement and preparation of different food items,
- Be familiar with the drying and freezing equipments.

LIST OF EXPERIMENTS

1. Measurement of Weight of Raw & Cooked foods
2. Preparation of Products from Fruits & Vegetables
3. Preparation of Products from Meat & Fish
4. Preparation of Products from Milk
5. Preparation of Products from Tubers
6. Demonstration of Drying equipment
7. Preparation of Food products by drying
8. Blanching of Vegetables, Fish & Meat
9. Demonstration of Freezing equipments

**Semester II
Course VI**

(C19FG21/E19FG04) Meat and Fishery Products Processing

OBJECTIVES:

- To explain the relevance of meat and sea foods processing industries.
- To learn the nutritious value of meat and fish and its processing methods.

Unit I: 18 Hrs

Importance of Meat & Sea food processing for entrepreneurship, Scope of Meat & Sea food processing industries.

Unit II: 18 Hrs

Nutritious value of meat, Pre slaughter, Slaughter & post charges, meat cuts & Deboning Preservation & Self life study of Meat products.

Unit III: 18 Hrs

Meat processing & its methods, Post Mortem charges during meat processing, Quality of Meat & its measurements.

Unit IV: 18 Hrs

Nutritive value of Fish, Post Mortem charges & processing of Fish, Self life study of Fish products

Unit V: 18 Hrs

Principles & Methods of Fish processing, Quality of Fish suitable for Fish processing, Dehydration, Canning, Pickling of Fish, Fish meal protein, Fish meal powder.

Reference Books:

1. P.K. Mandal & A.K. Biswas, Animal Product Technology – Studium Press Pvt Ltd, 2014.
2. Enda J. Cummins, James G. Lyng, 2016, Emerging Technologies in Meat Processing: production, Processing & Technology, Wiley-Blackwell publishers.
3. Meat processing Technology- FAO Health Series No: 59.
4. Processing of Fish & Fish products- FAO. 2011.
5. Fish processing technology, George M. Hall, Springer, 1992.

Course VII

(C19FG22/E19FG05)Diary and Agro Products Processing

OBJECTIVES:

- To study about the processing of milk and milk products.
- To learn about the different equipments used in agro processing industry.
- To learnt the processing techniques of agro products.

Unit I: **18 Hrs**

Collection & Transportation of Milk, Practice for Collection of milk, Reception & preliminary testing of milk at plant.

Unit II: **18 Hrs**

Processing of Market milk: Chilling, Clarification, storage of Raw milk, Physicochemical property of milk, Thermal Processing of milk- Pasteurization & its methods, Nutritive value of Heat processed milk.

Unit III: **18 Hrs**

Different machines used in Agro processing industry& their working principles- Need & Importance of Storage &Packaging of Agro products.

Unit IV: **18 Hrs**

Primary & Secondary processing of Rice, Wheat & Corn, Methods of Cleaning, Grading, Milling, Standards for the Rice & Wheat flour, Adulteration in flour.

Unit V: **18 Hrs**

Classification of Pulses & Cereals, Cereals & Pulse milling methods, Recovery & Utilization of by products from cereals-Spices & Condiments their types, Production & Processing.

Reference Books:

1. Modern Technology of Milk processing & Dairy products- 4thEdn-NIIR board- NIIR Project Consultancy Service, Publi-2013.
2. Dairy production & products- FAO Publication.
3. Milk & Dairy products- FAO Publication.
4. Modern Technology of Food processing & agro based industries- 2ndEdn- NIIR Board- 2003. NIIR board Publication.
5. Cereal Food Technology- P.K. Chattopadhyay - 2ndEdn- NIIR Board Publications, 2006.

Course VIII

(C19LS23/E19LS05)Life Skill

I Life Coping or adjustment

- (a) External and internal influence in one's life
- (b) Process of coping or adjustment
- (c) Coping with physical change and sexuality
- (d) Coping with stress, shyness, fear, anger far live and criticism.

II Attitude

- (a) Attitude
- (b) Self acceptance, self – esteem and self actualization
- (c) Positive thinking

III Problem Solving

- (a) Goal Setting
- (b) Decision Making
- (c) Time Management and stress Management.

IV Computers

- (a) Introduction to Computers
- (b) M.S.Office
- (c) Power Point

V Internet

- (a) Introduction to internet
- (b) E – mail
- (c) Browsing

References:

- 1) Life Skill Programme course I & II by Dr. Xavier Alphona MCRDCE Publications. R.K.Mutt Road, Chennai – 28
- 2) ஆளுமை பண்பு வளர்த்தல் மற்றும் தகவல் தொடர்பு by M.Selvaraj Community College,Palayamkottai
- 3) “Life Skill” –P.Ravi, S.Prabahar & T.Tamil Chelvam, M.S. University, Tirunelveli

COURSE IX
(C19FGP2/E19FGP2) Practical II

OBJECTIVES:

- Up on completion of this subject, the students can able to have hands on experience in the preparation and processing of milk , fish and meat products and also familiar with the various activities in meat and fish product industries.

LIST OF EXPERIMENTS

1. Industrial visit to Meat & Fish product industries.
2. Slaughtering of Goat, Sheep, Chicken by different methods- Demo.
3. Meat Processing: Cutting, Cleaning, Storage, Sanitation.
4. Curing & Canning of Meat & Fish product.
5. Preparation of FPC & Fish meal powder.
6. Fish quality checking.
7. Reception of Milk at the plant.
8. Pre treatment of raw milk, Chilling, Clarification, Filtration.
9. Cream preparation & Standardisation of Milk.
10. Preparation of special Milk (Flavoured milk, Toned milk, Vitaminized milk etc).
11. Demonstration & Package & Labelling of Agro products.
12. Determination of Moisture content in Flour using Hot air oven.

Course X

(C19FGPW/E19FGPW)PROJECT WORK

OBJECTIVES

- To develop the ability of the students by performing a project on students choice of any one topic in the area of food processing.

The project should be based on a field study and independent research leading to the area of specialization chosen by the student. The student in consultation of the faculty guide should select an appropriate topic which is acceptable to the panel of examiners. The topic should bear relationship to the subject specialization of the student.
