FCSCC08
FOOD PRESERVATION

SYLLABUS & ASSESSMENT

COURSE DESCRIPTION:

Food Preservation is the science of transformation of raw agricultural products by application of chemical or physical means to prevent deterioration and spoilage of food products and extend their shelf life without affecting its nutritional value. The main aim of food preservation is to minimize the growth of microorganisms during the storage period, thus promoting longer shelf life and reduced hazard from eating the food. After successful completion of this course, the students will acquire basic concept and application of food preservation.

SYLLABUS

FCSCC08 FOOD PRESERVATION

Credit:2 Course Duration: 30 hrs.

OBJECTIVES:

1. Helps in maintenance of nutritious food for extended period of time.
2. To study the different ways in which food spoilage occurs and the techniques to prevent it.
3. To understand the principles behind the various methods of food preservation.
4. To know how to use these principles to preserve different types of foods.
5. To study the method of action of different preservatives.
6. To spread awareness in the community about the Technology of food processing for use in the household and cottage sector.
7. To develop entrepreneurial spirit among students for inspiring them to set up their own facilities.

COURSE OUTCOME:

CO1 Understand the basic principles of food preservation

CO2 To know the various methods of preparation, canning and bottling.

CO3 Compare various food preservation methods

CO4 Understand food spoilage and different techniques to prevent it.

UNIT 1 INTRODUCTION TO FOOD PRESERVATION (3hrs)

Definition and scope of preservation, concept, importance of food preservation, common terms used in food preservation, Classification of food on the basis of Ph value, technology, Principles of food preservation, traditional and modern methods of food preservation. Food additives – definition, types, Class I and Class II preservatives.

UNIT 2 FOOD SPOILAGE (2 hrs)

Definition, types of spoilage - physical, enzymatic, chemical and biological spoilage. Mechanism of spoilage and its end products, shelf-life determination.

UNIT 3 PRESERVATION BY USE OF HIGH TEMPERATURE (3hrs)

Pasteurization: Definition, types, Sterilization, Canning - history and steps involved, spoilage encountered in canned foods, types of containers used for canning foods. Food irradiation – Principles, merits and demerits, effects of irradiation and photochemical methods.

UNIT4 PRESERVATION BY USE OF LOW TEMPERATURE (2 hrs)

Refrigeration- advantages and disadvantages, freezing: Types of freezing, common spoilages occurring during freezing, difference between refrigeration and freezing.

UNIT 5 DEHYDRATION OF FRUITS AND VEGETABLES (2hrs)

Preservation by Removal of Moisture-Drying and dehydration - merits and demerits, different types of drying- sun drying and mechanical drying.

UNIT 6 FRUIT BEVERAGES (2 hrs)

Introduction, Preservation of fruit juices- squashes, cordials, nectars, concentrates and powder.

UNIT 7 JAMS, JELLIES AND MARMALADES (3 hrs)

Introduction, Jam: Constituents, selection of fruits, processing & technology, Jelly: Essential constituents (Role of pectin, ratio), Theory of jelly formation, Processing & technology, defects in jelly, Marmalade: Types, Processing & technology.

UNIT 8 TOMATO PRODUCTS (2 hrs)

Selection of tomatoes, pulping & processing of tomato juice, tomato puree, paste, ketchup, sauce and soup.

UNIT 9 PICKLES AND CHUTNEYS (3hrs)

Pickles- Selection and grading of raw fruits and vegetables, washing of fruits and vegetables before they go for processing, peeling and slicing of fruits and vegetables, preparation of brine solution , curing of fruits and vegetable, technique/ process of preparation of salty and oily pickle (green, mango, green chili, lemon, ginger, mixed type,), technique/ process of preparation of sweet pickle (Mango, plum, papaya, date, mango lather, mixed type etc.)

Dry chutneys and masalas – Different methods of packaging and storing, their use in daily food preparation.

Practicals:

1. Squash preparation (2hrs)
2. Preparation of different types of jams, jellies and marmalades (2hrs)
3. Preparation of different recipes using tomato (2hrs)
4. Pickle preparation (2hrs)

REFERENCES:

1. Manay, N.S. Shadaksharaswamy, M. (2004), “Foods- Facts and Principles”, New age international publishers, NewDelhi.
2. Srilakshmi, B. (2003), “Food Science”, New Age International Publishers, New Delhi.

3. Subalakshmi, G and Udipi, S.A. (2001), " Food processing and preservation". New Age International Publishers, NewDelhi.
4. Srivastava RPO and Kumar S (2014): Fruit and Vegetable Preservation Principles and Practices, 3rd Ed. International Book distribution Company.

STRATEGIES FOR INSTRUCTION

Lecture method can be provided for theory papers and practical classes will be conducted from nutrition lab.

SCHEME OF EVALUATION

METHOD OF EVALUATION			
Assessment Methods	**Criteria**	**Marks**	**Weightage**
Formative Assessment (FA)	Attendance	4	25%
	Assignment/Project/Activities/Reports	6	
Summative Assessment (SA)	Test Paper	30	75%
	Total	40	100

ATTENDANCE

Attendance	Marks
90-100%	4
85-89.9%	3
40-84.9%	2
75-79.95	1
<75%	0

GRADING POLICY

Grade	Percentage of total marks (FA+SA)
A	80% & above
B	60-79.9%
C	50-59.9%
D	40-49.9%
Not qualifying	**<40%**

Model Question Paper

Certificate Course

FCSCC08 Food Preservation

Time: 1 Hour **Max Marks: 30**

Section A

Answer all questions. Each question carries 1 mark

1. What is Cordial?
2. Types of freezing.
3. Marmalade.
4. Freeze drying.
5. Jellies and jams are rarely affected by bacterial action.
6. Natural preservatives.
7. Fruit beverages
8. Theory of jelly formation.
9. What is dehydration?
10. Differentiate fruit juice and squash.

(10*1= 10 Marks)

Section B

Answer any five questions. Each questions carries 2 marks

11. Explain Class I and Class II preservatives.
12. What is Pasteurisation?
13. Traditional and modern methods of food preservation.
14. Explain principles of food preservation.
15. Difference between refrigeration and freezing.
16. Explain canning.
17. Explain types of spoilage.
18. Differentiate pasteurization and sterilization.

(5*2= 10 Marks)

Section C

Answer any two questions. Each questions carries 5 marks

19. Write a note on low temperature food preservation methods.
20. Explain the different factors involved in refrigerated and frozen food preservation.
21. Give a detailed account on dehydration of fruits and vegetables.
22. Explain food spoilage.

(2*5= 10 Marks)