

**CERTIFICATE COURSE IN
FOOD SCIENCE AND FOOD SAFETY
STANDARDS
(1 year duration)**



**STATE BOARD OF TECHNICAL EDUCATION
AND TRAINING
TELANGANA:HYDERABAD**

FOOD SCIENCE AND FOOD SAFETY STANDARDS

SUB CODE	NAME OF THE SUJECT	HOURS/WEEK		TOTAL PERIODS	SCHEME OF EXAMINATION			
		Theory	Practicals		Duration Hours	Sessional Marks	End Exam Marks	Total Marks
FF-101	Food Science and Food Safety Standards	03	--	50	03	--	100	100
FF-102	Food Science and Food Safety Standards - Practical		06	75	03	40	60	100
FF-103	PROJECT					40	60	100
FF-104	INDUSTRIAL TRAINING (15 days)		-	-	-	-	-	
	TOTAL	03	06	125		40	160	200

FOOD SCIENCE AND FOOD SAFETY STANDARDS

Subject Title : **FOOD SCIENCE AND FOOD SAFETY STANDARDS**
Subject Code : **FF-101**
Periods / Week : **08**
Periods / Year : **240**
Maximum marks : **100**

TIME SCHEDULE

Sl. No.	Major Topics	No. of Periods	Weightage of marks	No. of Short Questions	No. of Essay Questions
1.	Meaning and scope of Food Science as a study	25	13	1	1
2.	Know about Fuels and Energy sources for Food production and Know about Weights, Measures and Temperature reading in Food Production	50	26	1	1
3	Understand the Essentials of Food Safety and Standards and Know about the types of Food production units	50	16	2	1
4.	Know about Kitchen Stewarding and Know about Cleaning Agents and Cleaning Program required for Food Production areas	45	26	2	2
5.	Know about the Attributes of Food production personnel and Know about First Aid	45	16	1	1
6.	Food Production Equipment	25	13	1	1
	Total	240	110	8	8

Objectives

1.0 Learn the Meaning and scope of Food Science as a study

- 1.1 Define Food Science
- 1.2 Mention the applications of Food Science in Hospitality and Catering Industries
- 1.3 Define Food Contamination
- 1.4 Explain how food is contaminated
- 1.5 Define Food Poisoning
- 1.6 Mention the causative factors of Food Poisoning
- 1.7 State the meaning of Food borne illness
- 1.8 Mention the causative factors of Food borne illness
- 1.9 State the meaning of Cross contamination
- 1.10 List the factors causing Cross contamination
- 1.11 Mention the measures to be taken to control Cross contamination
- 1.12 State the meaning of Food Spoilage
- 1.13 State the principle behind Food preservation
- 1.14 Mention the methods of Food preservation
- 1.15 List the benefits of Food Preservation

2.0 Know about Fuels and Energy sources for Food production and Know about Weights, Measures and Temperature reading in Food Production

- 2.1 Name the fuels that are used in Food Production
- 2.2 How are Fuels chosen for Food Production?
- 2.3 What are the merits and demerits of the following fuels?
 - 2.3.1 Firewood

2.3.2 LPG

2.3.3 Electricity

2.3.4 Solar energy

2.3.5 Coal

2.4 Write the tables for Weights

2.5 Write the tables for Measures

2.6 Mention the Scales to denote Temperature

2.7 Write the formula for converting Celsius scale to Fahrenheit

2.8 Write the formula for converting Fahrenheit to Celsius scale

3.0 Understand the Essentials of Food Safety and Standards and Know about the types of Food production units

3.1 What is the meaning of Food Safety?

3.2 Briefly describe the role of local Health Authority

3.3 List the points checked by Sanitary Inspector.

3.4 List the powers and duties of Food Inspectors.

3.5 State the need for a medical examination.

3.6 List the points covered by a Food Inspector's Report.

3.7 State the meaning of HACCP.

3.8 Mention the uses of HACCP in Food Production premises.

3.9 List six examples of Critical Control Points (CCP).

3.10 Explain the scope of Food Safety and Standards Rules, 2011 of Act 2006 of Government of India

3.11 Mention the types of Food Production Units

3.12 Explain the features of

3.12.1 The Conventional System

3.12.2 The Commissary

3.12.3 The Cook-Freezer operation

3.12.4 The Assembly Serve

4 Know about Kitchen Stewarding and Know about Cleaning Agents and Cleaning Program required for Food Production areas

- 4.11 State the meaning of Kitchen Stewarding
- 4.12 Draw the organization of Kitchen Stewarding Department of a large hotel
- 4.13 Draw the layout of a Kitchen Stewarding area of activity
- 4.14 List the duties and responsibilities of Executive Kitchen Steward
- 4.15 Explain the duties and responsibilities of a Kitchen Stewarding Supervisor
- 4.16 Explain the following functions of Kitchen Stewarding
 - 4.16.1 Kitchen Stewarding Stores
 - 4.16.2 Pot Washing
 - 4.16.3 Plate washing
 - 4.16.4 Kitchen Cleaning and maintenance
 - 4.16.5 Supply of fuels
- 4.17 Define Cleaning
- 4.18 Define Sanitizing
- 4.19 List the factors to be borne in mind to clean any Food Contact Surface
- 4.20 Mention the types of Food Soil
- 4.21 Write about the function of water as a cleaning agent
- 4.22 Mention the types of Cleaning Agents
- 4.23 Mention the advantages and disadvantages of the following cleaning agents
 - 4.23.1 Soap
 - 4.23.2 Synthetic detergents or Dish washing compounds
 - 4.23.3 Acid Cleansers
 - 4.23.4 Abrasive cleaners
- 4.24 Mention the properties of a good sanitizer
- 4.25 Mention the factors influencing the effectiveness of Sanitizers

- 4.26 List the general guidelines for optimum sanitation
- 4.27 Explain the methods of washing, rinsing and sanitizing food contact surfaces
 - Work tables cutting boards.
- 4.28 List the general Rules for Hygienic storage and handling of Food production equipment and accessories.
- 4.29 Explain the cleaning of premises and surroundings.

5 Know about the Attributes of Food production personnel and Know about First Aid

- 5.1 Mention the essential Attributes of Food production Personnel
- 5.2 List the habits Food production Personnel should develop
- 5.3 Mention the habits Food production Personnel should avoid
- 5.4 Mention the qualities that help achieve professional success in Food production trade
- 5.5 State the meaning of First Aid
- 5.6 Mention the steps to follow in First Aid
- 5.7 Explain how First Aid is given in the following situations
 - 5.7.1 Cuts and lacerations
 - 5.7.2 Burns and Scalds
 - 5.7.3 Electrical shock/injury
 - 5.7.4 Fainting
 - 5.7.5 Fractures
 - 5.7.6 Stings and Bites

6 Know about Equipment, Furniture and Fixtures for Food Production premises

- 6.1 Mention the general sanitary requirements for equipment in Food Production operations
- 6.2 List the General guidelines to be followed for cleaning Food production Equipment
- 6.3 Write about the method of installation of various types of equipment

6.4 Write about the selection of Food Preparation Surfaces like work tables and platforms

6.5 List the ideal material used for making large and small kitchen equipment

6.6 Write briefly about the special attention required for the following equipment

6.6.1 Microwave ovens

6.6.2 Refrigerators and Freezers

6.6.3 Dish washers sinks and drain-boards

6.6.4 Vending machines

6.6.5 Chopping boards and meat blocks

6.6.6 Tandoor

FOOD SCIENCE AND FOOD SAFETY STANDARDS - PRACTICAL

Subject Title	:	FOOD SCIENCE AND FOOD SAFETY STANDARDS
Subject Code	:	FF-102
Periods / Week	:	12
Periods / Year	:	360
Maximum Marks	:	100

Content for Practical Sessions

1.0 Collect and categorize Menus of various categories of Food Service operations

- 1.1 Menus of Multi-cuisine restaurants
- 1.2 Specialty restaurants
- 1.3 First Class Restaurants
- 1.4 Function menus- (Formal and Informal functions)
- 1.5 Industrial Catering
- 1.6 School meal Service
- 1.7 Festival menus

2.0 Collect and categorize recipes of various categories of Food items and Make Indents /requisitions with Purchase Specifications

3.0 Receive, Store and Issue Commodities

- 3.1 Use weighing balance – manual/electronic
- 3.2 Measuring mugs and measures
- 3.3 Learn the use of delivery challan or invoice
- 3.4 Learn to read information on labels (shelf life, contents, usage instructions etc.)
- 3.5 Learn FIFO method of Storing and Issuing commodities

4.0 Practice Egg cookery

- 4.1 Boiled-hard, soft, cooking time-specified by guest
- 4.2 Poached
- 4.3 Fried-Sunny side up, turned over, basted fried egg
- 4.4 Omelets-plain, stuffed, fluffy, folded, rolled, Spanish

4.5 Scrambled

4.6 Shirred

5.0 Learn by practice, cooking for Indian & Western Breakfast and Snacks and make and serve Hot and cold Beverages.

5.1 South Indian-Idly, Dosa, Pesarattu Wada, Upma, Pongal, Sambar, Chutney

5.2 North Indian-Poories, Chapathies, Aloo-paratha, Kitcheree, Aloo bhaji

5.3 Samosas, Kachories, Tikki, Imli chutney

5.4 Breakfast Cereal

5.5 Breakfast egg cookery

5.6 Breakfast rolls

5.7 Scones, sandwiches

6 Make and serve Hot and cold Beverages

6.1 Tea, coffee, chocolate, milk-shakes, lassi, buttermilk,

REFERENCES

1. Theory of Catering by R. Kinton & V. Ceserani published by Hodder & Stoughton / ELBS.
2. Food Preparation Trainee Text published by South Asia Tourism Secretariat, Colombo.
3. Practical Cookery 12th edition 2012, for Level 2 NVQ and apprenticeships by John Campbell, David Foskett, Neil Rippington, Patricia Paskins, published by Hodder education.
4. A Complete Guide to the Art of Modern Cookery by A. Escoffier, published by Virtue & Company, England.
5. The Professional Chef by Culinary Institute of America published by Van Nostrand Reinhold New York.
6. Modern cookery for Teaching and the Trade (Vol – I & II) by Thangam. E. Philip, Published by Orient Longman.
7. Theory of Cookery by Krishna Arora, Frank brothers, New Delhi.
8. Larousse Gastronomique published by Paul Hamlyn, London.
9. Herings Dictionary of Classical and Modern Cookery published by Virtue & Company, London.
10. The Cookery Year Book published by The Reader's Digest Association Ltd., London
11. Food Science, Third Edition, 2003 by B. Srilakshmi, New Age International Publishers
12. Food and Beverage Service by Dennis Lillicrap and John Cousins, ELBS
13. Food Peter Jones, Cassel, London, 2nd Edition, 1988.

FF-103-PROJECT

Projects should be submitted as per the synopsis given :

SYNOPSIS:

1. Project in PPT/ Print material
2. Minimum 20 slides
3. 1 movie programme
4. Flash in Final
5. JPEG images with high resolution has to be submitted along with PPT.
6. Bounded / Spiral binding Project should be submitted

INDUSTRIAL TRAINING

Subject Title	:	Industrial Training
Subject Code	:	FF-104
Duration	:	1 month (30 effective days-7 hours per day +1hr. for report)
Training hours	:	210
Training Report	:	30 hours (for report making, verification and evaluation)

OBJECTIVES

On Completion of the Industrial Training in a Hotel / Catering establishment and / or in a unit of an allied industry the student will be able to

1.0 Know the organizational structure of the unit

- 1.1 State the ownership and the group or chain to which the unit belongs.
- 1.2 Draw the unit level organizational structure.
- 1.3 Name the sections of the Food Production department.
- 1.4 State the activities of the Food Production department that demand the coordination or cooperation of other departments.

2.0 Understand the nature of raw materials and the method of receiving, storage and issue

- 2.1 State the basic groups into which the hotel / unit divides the commodities.
- 2.2 Draw the layout of the stores indicating the areas / sections allotted for each category of raw materials.
- 2.3 Explain the method of receiving, storing and issuing highly perishable commodities.
- 2.4 Write the method of indenting / requisition followed by the department.

3.0 Understand the basic layout / facilities / design of the Food Production department and ancillary sections.

- 3.1 Draw the layout of the Food Production department including the supporting / ancillary sections.
- 3.2 Explain the inspection and cleaning routine of each section of the kitchen.
- 3.3 Draw the specimen layout of the section where training is imparted – Pantry / still room, garde manger / larder, Chinese kitchen, Indian, Tandoori, South Indian, Western (Continental), Banquets kitchen.
- 3.4 Explain the role of Dish washing area, equipment store, (Kitchen stewarding) in Food Production Operations.
- 3.5 Describe the use of cold rooms, deep freezers, walk-in coolers.
- 3.6 Explain the fire prevention / fighting system employed by the unit.

4.0 Understand the preliminary tasks to be completed before commencement of service

- 4.1 Write / explain the method of signing in / recording reporting for duty, collection / exchange of uniforms.

- 4.2 State the basic steps to be followed to commence work upon reaching the work spot
- look for any communication on Notice Board, attend briefing, read log book.
 - inspect the work area for safety, hygiene and sanitation.
 - ensure that equipment are in working condition.
 - check for previous day's / shift's stored food / prepared food ready for cooking.
 - find out of the availability / non-availability of raw materials / dishes, modifications to menus, special dishes for the day.
 - explain the method of receiving or picking up raw materials from stores / larder / butchery.

5.0 Understand the preparation of commodities

- 5.1 Recall and report the tasks related to Food Preparation before commencement of service.
- 5.2 Write down the basic preparations made specifically in each section of kitchen / larder.
- Stocks, sauces, gravies, mixtures, thickening agents, garnishes.
 - Main ingredients – Vegetables, eggs, meat / poultry, fruits.
 - Spices, herbs, condiments, additives.
- 5.3 List / state the arrangements made for attractive presentation of food.

6.0 Know about the range of products services offered by the unit

- 6.1 State the types of Food and Beverage / catering related products and services offered by the hotel / establishment.
- 6.2 Describe the basic features of the Food and Beverage outlet / outlets.
- 6.3 State the basic types of menus used by the establishment.
- 6.4 Describe the menus used for special occasions / events.

7.0 Understand the Food Production Operations during service hours.

- 7.1 State the method of
- Receiving orders – Use of Kitchen Order Token (KOT).
 - Responding to orders
 - Follow-up of orders
- 7.2 Describe in general
- Actual cooking in response to an order for food.
 - Finishing the dish.
 - Garnishing / presentation.

8.0 Understand the end of shift tasks to be completed in a Food Production department

- 8.1 Collect and forward KOTs to the F&B control department.
- 8.2 Prepare and use a check list for closing-down procedures.

- 8.3 Safeguard and store usable food items.
- 8.4 Switch off and clean large / mechanical equipment after use.
- 8.5 Clean and arrange hand tools and small equipment.
- 8.6 Dispose of garbage.
- 8.7 Close ground level windows.
- 8.8 Close and lock food stores, refrigerators, offices etc.
- 8.9 Switch off / turn off all LPG appliances and electrical appliances.
- 8.10 Ensure ventilation / close as per house rules.
- 8.11 Lock doors.
- 8.12 Hand over keys, sign register.
- 8.13 Sign time-out.

COURSE CONTENTS

- i. **Organizational structure of the unit** – Ownership – Group or chain to which the unit belongs – Unit level organizational structure – Sections of the Food Production department – Activities of the Food Production department – Coordination or cooperation of other departments.
- ii. **Nature of raw materials and the method of receiving, storage and issue** – Basic groups into which the hotel / unit divides the commodities – Layout of the stores indicating the areas / sections allotted for each category of raw materials – Method of receiving, storing and issuing highly perishable commodities – Method of indenting / requisition followed by the department.
- iii. **Basic layout / facilities / design of the Food Production department and ancillary sections** - Layout of the Food Production department including the supporting / ancillary sections - Inspection / cleaning routine of each section of the kitchen - Specimen layout of the section where training is imparted – Pantry / still room, garde manager / larder, Chinese kitchen, Indian, Tandoori, South Indian, Western (Continental), Banquets kitchen - Role of Dish washing area, equipment store, (Kitchen stewarding) in Food Production Operations - Use of cold rooms, deep freezers, walk-in coolers - Fire prevention / fighting system employed by the unit.
- iv. **Preliminary tasks to be completed before commencement of service** - Method of signing in / recording reporting for duty collection / exchange of uniforms - Basic steps to be followed to commence work upon reaching the work spot - Look for any communication on Notice Board, attend briefing, read log book - Inspect the work area for safety, hygiene and sanitation - Ensure equipment are in working condition - Check for previous day's / shift's stored food / prepared food ready for cooking - Availability / non-availability of raw materials / dishes, modifications to menus, special dishes for the day - Method of receiving or picking up raw materials from stores / larder / butchery.
- v. **Preparation of commodities** - Tasks related to Food Preparation before commencement of service - Basic preparations made specifically in each section of kitchen / larder - Stocks, sauces, gravies, mixtures, thickening agents, garnishes - Main ingredients – Vegetables, eggs, meat / poultry, fruits - Spices, herbs, condiments, additives - Arrangements made for attractive presentation of food.
- vi. **Range of products services offered by the unit** - Types of Food and Beverage / catering related products and services offered by the hotel / establishment - Basic

features of the Food and Beverage outlet / outlets - Basic types of menus used by the establishment - Menus used for special occasions / events.

vii. **Food Production Operations during service hours** - Method of Receiving orders - Use of Kitchen Order Token (KOT), Responding to orders, Follow-up of orders - Describe in general - Actual cooking in response to an order for food, finishing the dish, Garnishing / presentation.

viii. **End of shift tasks to be completed in a Food Production department** - Collecting and forwarding KOTs to the F&B control department - Preparation and use of a check list for closing-down procedures - Safeguarding and storing usable food items - Switching off and cleaning large / mechanical equipment after use - Cleaning and arranging hand tools and small equipment - Disposal of garbage - Closing ground level windows - Closing and locking food stores, refrigerators, offices etc. - Switching off / turning off all LPG appliances and electrical appliances - Ensuring ventilation / closing us per house rules - Locking doors - Handing over keys, signing register - Signing time-out.
