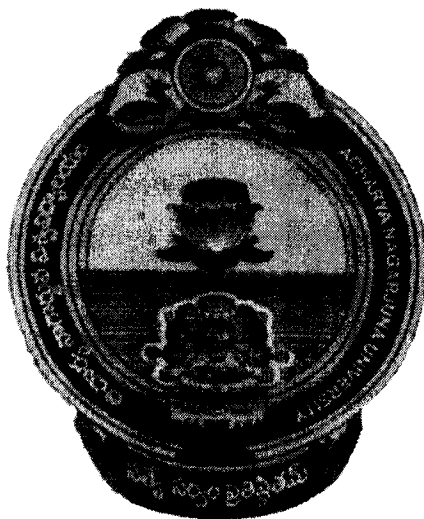


KITCHEN OPERATION MANAGEMENT

PGDHM



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FOREWORD

Acharya Nagarjuna University, since its establishment in 1976, has been moving ahead in the path of academic excellence, offering a variety of courses and research contributions. The University achieved recognition as one of the eminent universities in the country by gaining A grade from the NAAC 2016. At present Acharya Nagarjuna University is offering educational opportunities at the UG, PG levels to students of 447 affiliated colleges spread over the two districts of Guntur and Prakasam.

The University had started the Centre for Distance Education in 2003-04 with the aim to bring Higher education within the reach of all. The Centre has been extending services to those who cannot join in colleges, cannot afford the exorbitant fees as regular students, and to housewives desirous of pursuing higher studies to study B.A., B.Com, and B.Sc., Courses at the Degree level and M.A., M.Com., M.Sc, M.B.A. and LL.M. courses at the PG level.

For better understanding by students, self-instruction materials have been prepared by eminent and experienced teachers. The lessons have been prepared with care and expertise. However constructive ideas and scholarly suggestions are welcome from students and teachers. Such ideas will be incorporated for the greater efficacy of the distance mode of education. For clarification of doubts and feedback, Weekly classes and contact classes are arranged at UG and PG levels respectively.

I wish the students who pursue higher education through Centre for Distance Education will not only be personally benefited by improving their qualifications but also strive for nation's growth by being a member in Knowledge society. I hope that in the years to come, the Centre for Distance Education will grow in strength by introducing new courses, catering to the needs of people. I congratulate all the Directors, Academic coordinators, Editors, Lesson - Writers, and Academic Counsellors and Non-teaching staff of the Centre who have been extending their services in these endeavours.

Prof. A. Rajendraprasad
Vice - Chancellor
Acharya Nagarjuna University

PGDHM
SYLLABUS

Paper - V: KITCHEN OPERATIONS MANAGEMENT

Objective: To Impart Knowledge of Kitchen Management & Related functions.

Unit 1: Introduction To Cookery

Unit 2: Aims & Objective Of Cooking & Culinary History, Convenience Foods

Unit 3: Methods Of Cooking

Unit 4: Food Preparation Premises, Kitchen, Meal Production, Purchasing, Store Control, Food Control & Cost control, Portion Control, Budgetary Controls & Forecasting.

Unit 5: Kitchen organization And Layout, Kitchen Equipments & Maintenance.

Recommended Books: Theory of Cookery By : Krishna Arora.

Total No. of Questions : 10]

[Total No. of Pages : 01

PG DIPLOMA EXAMINATION, MAY – 2015

HOTEL MANAGEMENT

Kitchen Operations Management (Paper - V)

Time : 3 Hours

Maximum Marks : 75

Answer any Five questions.

All questions carry equal marks.

- Q1)** Describe the significance of cookery in hotel management.
- Q2)** What are convenience foods?
- Q3)** Discuss different methods of cooking food.
- Q4)** Draw a model organization chart for kitchen.
- Q5)** What are the considerations in the layout of kitchen?
- Q6)** State the objects of cooking.
- Q7)** Enumerate the maintenance of kitchen equipment.
- Q8)** Explain the preparation of food forecasting and budgeting.
- Q9)** State the operations related to kitchen management.
- Q10)** What are the techniques followed in the storage of food?

PGDHM: SYLLABUS

Kitchen Operations Management

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1. Origins of cookery
2. Great cuisines
3. Cooking measurements and equivalents
4. Principles and function
5. Convenience foods
6. Preparation of ingredients
7. Effects of heat on cooking
8. Methods of cooking
9. Rechauffe
10. Food Preparation Premises
11. Food and cost control
12. Budget and fore costing
13. Kitchen and meal production
14. Kitchen layout
15. Classification of equipment
16. Different types and maintenance of equipment
17. Kitchen origination
18. Kitchen firesafety

LESSON – 1

ORIGINS OF COOKERY

1.0 Objective :

- 1 To learn basic knowledge of cookery
- 1 Different terminology used in food production
- 1 Information of history of cookery

Contents

1.0 Objective

1.1 Definition

1.2 Cookery Literature

1.3 Culinary Preparation - the art and science

1.4 Questions

1.5 References

1.1 Definition

Cookery is defined as a "Chemical Process". The mixing of ingredients the application and withdrawal of heat; decision-making, technical knowledge and manipulative skills. In the more advanced stages, a further element occurs-that of creativity. Cookery is considered to be both an art and a technology.

Food preparation is a modern term in professional cookery. It denotes preparation and cooking. It follows a flow pattern which commences with the purchasing and selection of materials, their handling, processing and the ultimate presentation of the dishes to the customer, where "food service" takes over. In French, the word "Cuisine" denotes the art of cooking – preparing dishes, and the place-the kitchen in which they are prepared.

Cookery preparation of food for consumption. The oldest and most essential of the arts and crafts, cookery involves a variety of primary techniques that include the application of dry heat, immersion in or contact with heated liquids or fats, curing, smoking, and pickling. Secondary cookery techniques range from the simplest kitchen chores to the elaborate decoration of ceremonial pastries.

1.2 Cookery Literature

The literature of cookery (as opposed to the older literature of gastronomy) dates from Confucian times in the East, and from the 1st century in the West, when the first known cookbook was written, perhaps by the Roman voluptuary Marcus Gavius .

The earliest surviving cookbook in English is *The Forme of Curry* (*Forms of Cookery*, c. 1390). With the invention of printing, cookbooks began to proliferate. The ever-increasing number of works on cookery includes the landmark works of Carême and Escoffier, as well as—in the U.S. today—such frequently revised classic cookbooks as the *Fannie Farmer Cookbook* and *The Joy of Cooking*, and the books, television programs, and newspaper columns of such widely respected experts as Julia Child, Craig Claiborne, and James Beard.

Cookery must be divided into two classes, perhaps best defined by the French, who distinguish between *cuisine bourgeois* ("home cooking") and *haute cuisine*—cookery conceived as an aesthetic pursuit. In theory, the distinction is based on the differences between practical cooking skills and refined artistry.

In practice, however, the distinction has always been somewhat vague and has become increasingly so in recent years, as home cooks—better informed, equipped, and supplied than in the past—emulate the work of professional chefs.

By the time of the earliest settled communities, cookery had become more than merely a means of survival; people had begun to concern themselves with flavor and quality, rather than simply quantity.

By the standards of the great 19th-century French gastronome Anthelme Brillat-Savarin (who declared, "Beasts feed; man eats; only the man of intellect knows how to eat"), the craft of cookery was evolving into an art. The peoples of the Indus Valley, for example, are known to have ground spices, and their Chinese contemporaries preferred tender young pigs to meatier but tougher older animals.

Babylonian times the succulent fungi called truffles were being rooted from the ground for the delectation of those who could afford them, and the tough meat of old oxen was deemed fit only for dog food. Forty kinds of breads and pastries were available to upper-class Egyptians by the 12th century bc. Nine hundred years later the Athenians had already stolen a march on frugal modern restaurateurs by inventing the *hors d'oeuvre trolley*, which, according to one 3rd-century BC complaint, "seems to offer variety but is nothing at all to satisfy the belly."

Throughout much of its history, indeed, cookery of classical Greece was far more concerned with the belly than the palate. As a result of disastrously poor soil conservation, olives and grapes grew in abundance, but meat was scarce, and domestically grown staple grains almost nonexistent.

Except during the later period of Athenian greatness, rich and poor alike subsisted largely on a monotonous diet of imported grain eaten for the most part in the form of oil-bound pastes.

Meat rarely was eaten, except during ritual feasts, when it was prepared as simply as a steak at a modern backyard barbecue. With the emergence of Athens as the preeminent city of classical antiquity, however, Greek cookery for the wealthy, prepared by slaves, took on pretensions to what would eventually be called *haute cuisine*.

It remained for the Romans to elevate cookery to the status of high art and to make elaborate dining a major preoccupation of civilized life. Unlike the slave cooks of Greece, the hired chefs of imperial Rome commanded salaries that the Roman historian Livy termed "prohibitive," and their employers literally spent fortunes on single meals.

No foodstuff was too costly or too esoteric for the upper-class Roman table, and the known world was scoured for such exotic items as flamingo tongues, peacock brains, oysters from Britain,

hams from Gaul, and ostriches from North Africa. To satisfy this gastronomic lust a sophisticated culinary technology was developed, and even in the restricted space of town houses kitchens were furnished with large grills, vast preparation tables, and complex masonry cookstoves; these stoves contained a number of separate ovens, each with its specific function.

Although the 19th-century French master chef Marie Antoine Carême denounced it as "essentially barbaric," classical Roman cookery might easily have evolved into something much like Carême's cuisine had not the Roman Empire broken up. With the barbarian sweep across Europe in the 5th century ad, the progress of Western cookery came to a virtual standstill and was not revitalized until the Renaissance.

1.3 Culinary preparation – the art and science

It is not solely the artful manipulation and combination of food which results in good tasting and preparation methods used. The preparation we discuss in this text in one sense. Goes for beyond the preparation of food stuffs needed for humankind to survive. In another sense our discussion will touch on nutritional aspects of preparation which are important to the survival of the consumer. The nutritional value of the food prepared must be considered. This part of food preparation can be considered to be the science. Balancing the art and science is the goal of the culinary. Producing food which is nutritious and good tasting requires both art and science.

1.4 Questions

1. Define cookery and explain?
2. Write about literature of cookery?
3. Explain cookery of classical Greece?

1.5 References

1. Modern cookery – volume 1 by thangam phillip
2. The art and science of culinary preparation by Jerald W chesser.

Lesson – 2**GREAT CUISINES****2.0 Objective :**

- 1 to learn different classification in food
- 1 Different types and cuisines of cookery
- 1 Methods and cooking techniques involved in cuisines.

Contents**2.0 Objective****2.1 Classification of Cookery****2.2 French Cuisine****2.3 Chinese Cuisine****2.4 Australia and Newzealand Cuisine****2.5 Indian Cuisine****2.6 Food in the New Worlds****2.7 Questions****2.8 References****2.1 Classification of cookery**

There are three classes of professional cookery associated with the craftsman and they are graded according to the quality of the materials used. The classes are:

1. **Cuisine Simple**, or plain cookery, where the basic necessities are used and the craftsman produce dishes of the highest standard possible with a minimum number of materials.

2. **Cuisine Bourgeois**, or middle class cookery. This type of cookery provides better materials and in the hands of the craftsman, these materials produce more complicated dishes of a better quality.

3. **Cuisine Haute**, or high cookery where the very best possible materials are used. The crafts use these materials to their best advantage and produces dishes of the best quality. This class produces highly complicated dishes, i.e., classical dishes. Simple cookery is confined to the preparation of the everyday, practical type of dishes. There are prepared quite simply and are very popular.

The person planning should be familiar with the safe preparatory techniques for handling food and equipment. He should enlist reliable help or suppliers and order and cost out ingredients and expenses accurately.

Both management and employees of catering establishments have a responsibility to the public to ensure high standards of personal hygiene and hygiene of food and equipments. The establishment should observe health and hygiene regulations for catering operations.

To prevent food contamination, hygiene of the food handlers and the hygiene of the kitchen and its equipment and hygienic food storage rules should be observed.

Personal Hygiene is very important for food handlers. The staff should wear a hairnet, skin disorders should be looked after, comfortable shoes should be worn, nails cut and hands washed with warm, soapy water, before handling foods, after visiting the toilet, after eating and smoking.

Difference between professional and amateur cookery professionalism is not only skills and knowledge, but also includes attitudes. An amateur learns skills and acquires knowledge.

Great Cuisines

The high class cookery has a wide-range of variety. In it, expensive materials are used to prepare complicated and elaborate dishes-Mughlai dishes being the most popular ones in India

2.2 French Cuisine

It is a recognized by the world as one of the finest cuisines. The French are known for their artistic temperament and so is their cuisine.

Every ingredient speaks its own language. Wines used for cooking enhance the taste, give an unusual flavor, this being a unique feature of French cuisine. The most important rule is to use only the best ingredients and the proper blend of color and taste of ingredients.

Garnishes and accompaniments play a key role in French Cuisine and dishes are identified by them. Food items are cooked in sauces or they accompany a dish, e.g., roast beef is served with Yorkshire pudding and is accompanied with horse-radish sauce.

2.3 Chinese Cuisine

Chinese culture is the oldest civilization in the world. In unrecorded history, they were the first discoverers of fire, Friendship and food were inseparably linked. A gathering without food was considered incomplete and improper.

Techniques of Chinese Cooking

The Chinese sauté, steam, deep fry and roast with a difference. Baking is rarely done. Stir frying is the most popular method of cooking. It is similar to sautéing but it is done on intense heat.

Middle Eastern Cuisine

The Middle East countries language is "Arabic" throughout the region in its numerous and varied dialects. The religion is that of Islam. The various countries are inextricably linked culinary wise, Middle Eastern Cooking, though sometimes elaborate, is easy.

Some of the dishes, such as stuffed vine leaves, may take some time to prepare. Lamb Mince is the favorite meat eaten.

Cheap Cuts of meat are used extensively. Alcohol is not used owing to the Muslim dietary law. Vegetables are used in abundance. Vine leaves, pine nuts, cabbage, baniva(okral) lentils, chick peas, bitter herbs, olives, figs, grapes, raisins, dates, almonds are extensively used. Fish are eaten widely along the coast line.

Australian and New Zealand Cuisine

It's a fine cuisine, took centuries to establish and it requires an indolent aristocracy to refine it.

Australians have superb produce- marvelous beef and lamb, wonderful fish, first class vegetables and exotic tropical fruits. Nevertheless, these democratic people have never been much concerned with food.

New Zealand settlers unlike their Australian counterparts, managed to graft onto the dreary "home" cooking which they brought from less well fed houses of Britain, a little livelier tradition they found in the land they took over.

Popular Australian Food

Kangaroo Steak – Lion of Kangaroo Fillet are used and roasted.

Food plays a significant role in the life of the Indonesian community in a religious, spiritual and cultural way. The Indonesian cuisine is a rich and complex blend of many cultures reflecting the variety of Islands across Indonesian archipelago.

Indian Cuisine

It has evolved along lines parallel to Indian History. India has ancient cultural heritage which is dependent on religion, geography and socio-economic conditions. Traditionally Indian cooking has been handed down through the generations by demonstrations and word of mouth.

Nouvelle Cuisine

In the early 70's chefs wanted to bring about a change in French Cuisine. It was done by H.Gault and C.Millan, as they were fed up to eat the same classical food everyday, it revolutionized French Cookery.

P. and J. Troisgros (brothers), M.Guerard, A .Chapel, R.Verce and Paul Bocuse spoke of changes and the revolution was started by emphasizing on serving original salads, vegetable terrines, fish just cooked on the bone; and the prices were high. It took about 20 years for people to take to the Nouvelle Cuisine dishes.

It took about 20 years for people to take to Nouvelle Cuisine dishes. It was easier to get the recognition as many restaurants were not offering the French Classical dishes.

The change from the classical cuisine was brought about by the following points.

1. A variety of dishes were served on the menu but smaller portions were served.
2. Presentation of the food was given a lot of importance by serving it on a plate, so that the presentation was not spoilt by the service personal. Individual portions were placed on the plate and served.
3. The sauces were served thinner, flour was not added for thickening. The cooking time was reduced, by stir-frying, frying, grilling, eat, Fresh food stuffs had to be used and emphasis was laid on seasonal vegetables, fishes etc. The times should be bought from the best suppliers.

By general consent the three major styles of modern cookery are the Chinese, Italian, and French. Of these, the oldest, purest, and perhaps most sophisticated is the Chinese, which is built on concepts defined by Confucius.

The character of Chinese cookery has been shaped by the character of China itself. In a land chronically overpopulated and fuel-poor, a people concerned with good eating had to use ingredients and develop techniques unknown or ignored elsewhere. In essence, Chinese cookery is quick cookery.

To prepare meals using small quantities of flimsy, fast-burning fuel, the Chinese developed the wok, a round-bottomed utensil that circulates heat quickly and evenly while enabling its user to keep its contents in constant motion. With the wok, and using ingredients hacked into small, thin morsels, the Chinese cook exposes the maximum amount of food surface to heat in the shortest possible time, often simultaneously preparing a sauce in the same wok.

Chinese cookery is typified by lightness, freshness, variety, and the calculated interplay of contrasting textures, flavors, colors, and aromas. Its influence is evident to varying degrees in the cookery of Japan and in areas from Hawaii to the western end of the Malay Archipelago.

Italian cookery, too, was shaped to a considerable degree by fuel shortages, in this case the result of early deforestation. In northern Europe in the Middle Ages, large roasts were cooked on spits, and stews, soups, and sauces were prepared in cauldrons. Although not unknown in Italy, these slower methods have not played conspicuous roles in a land where beef is relatively scarce but fish are plentiful and where pale meats, in any case, are preferred to red. Like the Chinese, Italian cookery is essentially quick cookery, with thin cuts of meat exposed to heat for periods of short duration, and with such relatively bland grains as pasta (wheat), polenta (corn), and risotto (rice) dependent on sauces and garnishes for interest. Based primarily on that of the Greeks, Etruscans, and Saracens, Italian cookery was refined to a high degree by the early Renaissance, when it produced the first truly modern European cuisine.

Although today it sets the standard for all other Western cuisines, French cookery was heavy, monotonous, and overspiced until the arrival in France (1533) of the Italian-born queen Catherine de Médicis; with her came a small army of Florentine cooks, bakers, and confectioners, an assortment of advanced kitchen gear, and a variety of delicacies then unknown to the French.

In the following century François Pierre de La Varenne, a great chef trained in the French court, wrought a culinary revolution by developing the first true French sauces. La Varenne was followed by a long line of French master chefs, who in their times revolutionized cooking procedures: Carême, the founder of la cuisine classique; Auguste Escoffier, who modernized, codified, and publicized French cookery; and, in the present era, a band of young innovators who have based their nouvelle cuisine in large part on Oriental traditions 2000 or more years old, developing a new cooking style characterized by lightness, purity, and simple, undisguised flavors.

FOOD IN THE NEW WORLD

In the western hemisphere cookery has evolved largely according to the ethnic background of the settlers, as modified by their immediate requirements and the available produce in the regions they settled. Thus, in Canada, native foodstuffs have been adapted to a need, in a harsh climate, for high caloric intake and are cooked according to French and English tastes. In the United States food has been and still is cooked according to the styles of successive waves of immigrants—with English, German, Dutch, Creole, and African influences predominant until recently. In Latin America, native cookery has been influenced, in varying degrees, by the methods of Spain, Portugal, and Africa.

QUESTIONS

1. Classifications of cookery?
2. Write about French cuisine?
3. Techniques of Chinese cuisine?
4. Explain about nouvelle cuisine?

References

Davidson, Alan - History and types of food around the world.

Lesson 3**COOKING MEASUREMENTS AN EQUIVALENTS****3.0 Objective**

- 1 Different measurements and values
- 1 To know clear information regarding weights and measures

3.1 Contents**3.0 Objective****3.1 Contents****3.2 Directions for Measuring Dry Ingredients****3.3 Oven Temperature for Meat Cooking****3.4 Some Commonly used Weights and Measurements****3.5 Conclusion****3.6 Questions****3.7 References**

This is very important task of cookery, particularly food production. To obtain a standard product with standard yield, as is essential for commercial foods, weighing and measuring must be done accurately.

A set of scales, measuring jugs, and standard measuring cup and spoons must be provided in every kitchen. The scales should denote both grams and ounces and the measuring jug both liters and pints. Weighing is more accurate than measuring but for expediency, measuring can be used. When measuring, it is better to use level measurements, as this is less subject to error. Spoons and cups vary greatly in size. Therefore test them carefully and always use the same utensils for measuring.

3.3 DIRECTIONS FOR MEASURING DRY INGREDIENTS

FLOUR: Sift before measuring. Pile the sifted flour into the measuring cup and level off with a knife. Do not pack down.

WHITE SUGAR: Fill cup and level off with knife.

BROWN SUGAR: Pack into cup and level off with knife.

3.3 oven temperature for meetcooking

RIBS.....Rare—140°F; Medium—160°F; Well done—170°F

SIRLOIN.....Medium—160°F; Well done—170°F

TENDERLOIN.....160°-170°F

MESUREMENT

- 2 cups fat or shortening = 1 lb
- 1 cup fat or shortening = 1/2 lb
- 1/2 cup fat or shortening = 1/4 lb
- 8 Tbsp fat or shortening = 1/4 lb

1 ounce	28 grams
0.035 ounce	1 gram
3.5 ounces	100 grams
1 pound	454 grams
1.10 pounds	500 grams
2.2 pounds	1 kilogram
35 ounces	

3.4 some coomonly used weights and measurments

1 quart	2 pints
1 pint	2 cups
1 cup	16 tablespoons
1 cup	48 teaspoons
3/4 cup	12 tablespoons
2/3 cup	10 tablespoons and 2 teaspoons
1/2 cup	8 tablespoons
3/8 cup	6 tablespoons
1/3 cup	5 tablespoons and 1 teaspoon
1/4 cup	4 tablespoons
1/8 cup	2 tablespoons
1/6 cup	2 tablespoons and 2 teaspoons
1/16 cup	1 tablespoon
1 tablespoon	3 teaspoons
1 teaspoon	60 drops



There are so many ingredients used in cooking. When you are cooking in Europe, Asia and western countries, the measurements changes the recipes contents of quantities of ingredients, if you want get proper out-put use proper weights of ingredients.



3.5 CONCLUSION

Different measurement systems are used in different countries (such as Imperial, US Standard, and Metric), and different ways of measuring ingredients. The most important difference one may encounter is whether dry ingredients are measured by weight (e.g. ounces, pounds, grams, kilograms) or by volume (e.g. tablespoons, cups, milliliters, liters). For example, cooks in the United States tend to measure all ingredients by volume, while it is common in Europe to measure dry ingredients by weight and liquid ingredients by volume. This creates a lot of confusion and the best suggestion to give is to immediately convert all the recipes you find on the books to your measurement system before even considering making it.

3.6 Questions

1. Explain about weights and measurements with proper examples?
2. List out various kitchen measuring equipments.

3.7 References

Modern cookery-thangam e phillip

Lesson – 4**PRINCIPALS AND FUNCTIONS OF COOKERY
MANAGEMENT****4.1 OBJECTIVE :**

- 1 Basic knowledge and importance of cooking
- 1 To improve more knowledge on cookery

4.1 Contents**4.0 Objective****4.1 Contents****4.2 Principals Management****4.3 Aims and Objectives****4.4 Questions****4.5 References**

Management is a process involving activities through which action is initiated and resources used for achievement of a preset goal. Certain basic guidelines can be formulated by every manager, to help him in the successful management of his establishment. These guidelines are called principles of management.

George R.Terry has aptly defined a principal as "a fundamental statement or truth providing a guide to thought and action. "principles are not rigid foolproof rules foolproof rules to be applied for finding solutions to situation ,but flexible ,practical ,consistent ,and relevant guidelines for use in similar sets of situations. Principles, therefore, provide a hypothesis for predicting future happenings when they are used with the manager's own judgement of how and when to apply them.

When managers make decisions that have constantly proved wrong, the fault does not lie in the management principles, but in the judgement made when applying them to a particular situation .for example, a catering manager may follow the principle of serving meals strictly between 12.30p.m and 2.30p.m.every day. But one day there is an unexpected rush of customers, and prepared meals get finished by 2.00p.m .how will the manager apply this principle? His judgement can lead to the following actions.

- i) Close down service at 2.00p.m on that day.
- ii) Quickly use some ready to serve foods held in stock to make up meals and meet the rush.
- iii) Request staff to make sandwiches and arrange for serving eggs to order for the remaining half hour of the service.

In this manner there can be so many different reactions to a particular situation that it may seem confusing to make a decision. But the principle if applied with value judgement helps to make decisions easier and more effective. A manager who places greater value on the "good will of his customers" will not think twice about keeping the food service open, and providing whatever he can to his customers. He would not take the risk of turning away even a single customer.

Another might value his own image vis-a-vis the staff, in which case he will treat the situation as a challenge and think of quick preparations, being guided by the principle of keeping the food service open. A third manager may value good relations with staff and take the opportunity to give them half-an-hour off, based on his decision that the number of customers between 2.00p.m and 2.30p.m are not significant enough to go through the exercise of preparing meals over again and taxing his staff unduly.

In this manner the number of decision possible can be as many as the value judgments people have. Principles applied must therefore, be flexible enough to be used in situation where goals change from time to time, no matter how far apart in time similar situations may arise.

Principles represent the historical collection of the 'cause and effect' "data obtained from experiences of managers in various situation, from which practicing and potential managers draw can making decision effectively. There is no fixed number of principals that a manager may adopt as the bases of devolving his establishment, and with individual experiences gained, very different guidelines for efficient working may be establish in different organizations.

Some principles help managers to help predict, others provide guidelines for decision - making at various levels of an organization. According to Koontz, O'Donnel and Weirich principles in management or descriptive or predictive, and not perspective. In other words, they do not tell a manager what he should do, but only give him an idea of what may be expected if certain variables interact in a situation.

4.3 Aims and objectives

The aim or the intention of cooking is to see that the food cooked undergoes a physical and at times a chemical change and that the end result is edible and acceptable.

The object of cooking is to achieve certain results such as:

To facilitate and hasten digestion, so that the cooked food is absorbed by the digestive system and subsequently assimilated by the body. This is largely determined in the manner the food is cooked. During the cooking process, it breaks down the cellulose in plant food, softens some of the connective tissues of meat, breaks down and gets starches present. The alteration is brought about in texture, by physical and chemical changes thus assisting mastication.

A physical change occurs when a substance changes its form, colour or size, but still remains that same substance, like water that changes to ice. A chemical change occurs when a substance changes its form, colour or size, combining so as to form an entirely new body, eg. Green marrow changes its colour and milk changes to curd.

The edible parts of plants and animals may be termed as "food", in so far as people eat them in some form or another to satisfy their physiological, psychological and social needs.

For the purpose meeting the needs of the body for growth and maintenance, foods have generally been placed into three basic categories referred to as food groups on the bases of the nutrients they supply for the various functions of the body these are :

- Energy giving
- Body building and maintenance
- Protective

A fourth group covering miscellaneous food may be added to this which the purpose of including all those items used food preparation, which enhance the quality and acceptability of food.

It is universally accepted that the natural value of food is not primarily what makes people eat. It is its color, flavor, texture, temperature and presentation. Besides, due to the enormous range of foods which people eat all over the world, there may be some items which do not fall into the three groups, maintained above, and those can then be accommodated in the miscellaneous group.

4.4 QUESTIONS

1. Explain aims and objectives of cooking?

4.5 References

Theory of cookery – Krishna arora

Catering management – mohini sethi, surjeet malhan

LESSON – 5**CONVENIENCE FOODS****5.1 Objective :**

- 1 To know the ingredients which help to increase taste and flavors of food
- 1 Different types of foods
- 1 To know proper storage of food

5.1 Contents**5.0 Objective****5.1 Contents****5.2 Introduction****5.3 Storage of Convenience Food****5.4 Storing of Cartons and Cases****5.5 Types of Food****5.6 Natural Foods****5.7 Processed Foods****5.8 What is Quality****5.9 Questions****5.10 References**

Many combinations of spices in a powdered form are marketed today, e.g. chana masala, rasam powder, sambar, Masala for onions, garam masala, jal zeera masala, meat masala, etc. This process retains original flavors and improves keeping quality and makes transportation economical and easy. Spices are also available in liquid form.

5.2 Introduction:

Today the term "Convenience Food" is widely used in the catering industry. This is probably due to the rapid progress in food technology over the past decade.

Many convenience foods have been in use in the industry for many years, without being given this title. This was probably due to the fact, that they were used in small proportions during the preparations of meals.

Considerable amounts of convenience food are now used in all levels of catering packaged and graded specially for the industry. This varies from individual types of food to complete meals.

The term "Convenience Food" strictly translated refers to any type of food, where some stage of preparation has been completed beforehand.

5.3 Storage of convenience foods:

Store keeping is one of the most neglected activities in small scale establishments. the first principal store keeping is to know 'what' is 'where' when it is needed by the user department.

Most food materials needed to be stored for different lengths of time and at different temperatures to preserve their wholesomeness till required for preparation and service. for effective storage of food items therefore, two types of storages are used the dry storage rooms meant for non-perishable commodities cereals and their products, pulses, legumes, sugar and spices, canned foods, fat and oils etc. and the low temperature storages for semi perishable and perishable food. food stores in all establishments should be situated for easy access by staff of our departments as well as suppliers, with out interference in the flow of work of all concerned.

Dry storeroom should well lighten so that every item placed in them is easily visible and identifiable. Good ventilation helps to prevent spoilage, and maintain the temperatures required. From the point of view of security, it is general practice to provide only one entrance exit to stores. It also provides better control of deliveries and issues to user departments.

5.4 Storing of Cartoons and cases

Cartoons of canned foods biscuits, bottle products, tins etc. should be stacked with their labels visible for identification, and open on the side for easy access to packs. these packs are generally used for desired fruits ,preserves, mixes, jellies, etc. and many be lined up one in front of other, each row having packs of the same items. This helps in having the first horizontal rows representing all different items of food in stock, easy to locate to issue when required. as a rule



vegetables and fruits required to be stored in areas separate from the main dry store, especially root vegetables. This is because root vegetables pass on their order to order foods easily and through representation also increases the temperature of the stove. Oils and fats need special attention in storage because attend to get raised in the presence of light. They also absorb odours and flavors from other foods. a knowledge food that easily absorb or given off strong odours is necessary to help to keep foods in storage from being adversely affected.

Low temperature storages are based on the fact that microbial at activity decreases with low temperature, and there by prolongs the storage life of perishable items. Eggs and dry products required temperatures of 5-10 °c as against meat ,fish and poultry which need to be stored at 0-20 °c, if stored for more than two or three days. For a short period of 2-3 days.0-3 °c is sufficient. Storage life of some foods at 21 °c as been studied extensively.

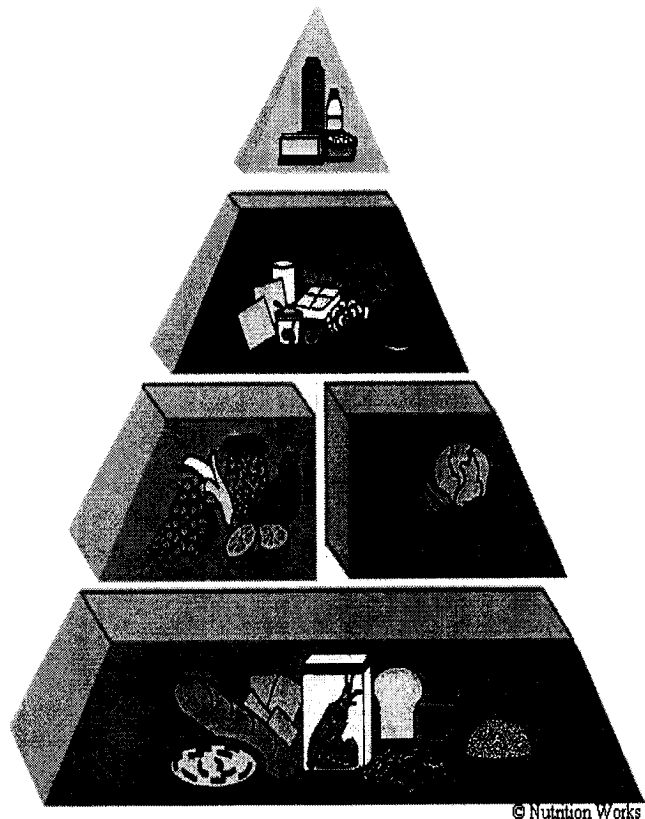
5.5 Types of food

As many as 664 types of foods have been listed in India alone, under cereals , pulses, nuts and oil seeds , vegetables, fruits, oils, milk and milk products and flesh foods. When these are combined in various ways and in different amounts :the possibilities are unlimited. a part from the variety that is possibility in food preparation, every food manager must be aware of the types of foods available for use in food services and their seasonal availability. Foods are generally available in two forms natural and processed.

5.6 Natural foods

As the term indicates these foods are available in their natural forms as they appear from farms, occurs, slaughter houses and water sources. Some examples are fresh fruits and vegetables, freshly cut meats, fish, nuts, pulses and legumes as harvest.

While the nuts, pulses legumes can be used in their natural forms they are generally subjected to some form of processing to enhance their storage life.

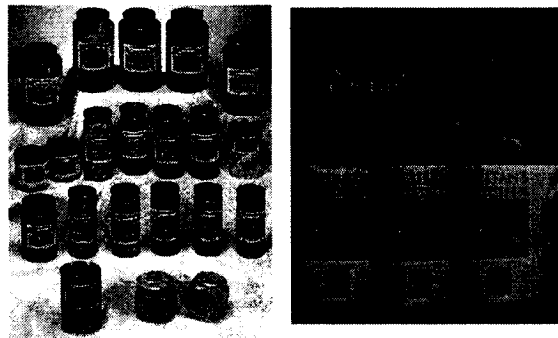


5.7 Processed foods

Processed foods are those which have undergone some type treatment on a small or large scale before, they are used as basic ingredients of a meal or consumed as such. Cereal foods are rarely used in their harvested form, and are generally subjected to processing. For example, cereals are milled into flours, broken cereal used for porridges, semolina etc. other foods also vary considerably in the extent to which they are processed. Some synthetically manufactured foods are also marketed which have possibilities in food production, such as essences, emulsifiers, sequestrates, vinegar and so on.

As the variety demand by the customer is increasing, food service managers are turning more and more to processed forms which are time and energy saving in food preparation.

The list keeps on expanding with the first growing technological developments and the changing demands of people and food services. Such foods have been termed as "convenience foods". Most fast food outlets depend heavily on the use of convenience foods in the form of pre-portioned packed cuts of meat, fish and poultry; partly prepared foods to be finished on demand and served; and even ready to serve food straight from cans or packs.



5.8 What is quality?

When dealing with food materials and meal preparation for customer, it is hard to define the term "quality" because it means different things to different people. John W. Buick has defined quality as the "degree of excellence" that can be offered to the customer.

Day to day experience shows that whether one pays for tomatoes, apples or a meal, customer do not mind paying more for what they think is better quality food or service. From the point of view of the caterer, however, "quality" not only includes palatability, characteristics (which through important can be enhanced or mistaken as desired, by the use of additives), but the production of meals that are wholesome in terms of their being safe for consumption.

5.9 Questions

1. EXPLAIN TYPES OF FOODS?
2. WRITE ABOUT STORAGE OF CONVENIENCE FOODS?

5.10 References

Catering management – Mohini Sethi, Surjeet Malhan

Lesson – 6**PREPERATION OF INGREDIENTS****6.0 Objective:**

- 1 To know the basic techniques related food and ingredients handling

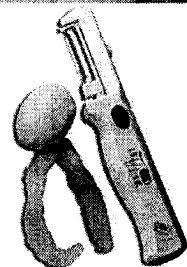
6.1 Contents**6.2 Preparation of Ingredients****6.3 Texture****6.4 Questions****6.5 References****6.1 Preparation of Ingredients**

Many techniques are used for food preparation before cooking and they are done according to the requirements of the various dishes. This helps to improve appearance, texture, palatability and flavour, and foods combine readily. The techniques are divided into two.

1. Sub-Division and fractionalization
2. Combining and mixing in the preparation of food

Sub-Division and Fractionalization

1. Washing
2. Peeling
3. Paring
4. Cutting
5. Mire-poix
6. Mincing
7. Meringue
8. Mandolin
9. Macedoine
10. Shredding
11. Slicing
12. Slitting
13. Grating
14. Grinding
15. Mashing



16. Pureeing
17. Pressing
18. Sieving
19. Refining
20. Skimming
21. Rendering
22. Filtration
23. Flavoring
24. Folding
25. Flotation
26. Evaporation or Reduction
27. Homogenization
28. Emulsification

Combining and Mixing in the Preparation of Food

Food preparation often involves the combining and mixing of different food or food materials. Important effects of the methods of combining food or ingredients are those related to palatability. Texture and flavor are often controlled to an important degree by the skill and method employed in combining component materials.

1. Beating
2. Blending
3. Cutting
4. Creaming
5. Folding
6. Kneading
7. Marinating
8. Sealing
9. Stirring
10. Whipping
11. Whisking

6.2 Texture

The texture, as related to food is not an entity in itself, but rather the accumulated effect of several characteristics or qualities to create individuality such as

- v Appearance
- v Feel to touch
- v Softness
- v Mouth Feel



Appearance :-

It is the first factor in the appreciation of food. The size, shape and distribution of cells (holes) are of prime importance. Ideally the holes should be comparably small, slightly oval or elongated and evenly distributed. Large cells produce coarseness' to the eye, as in cake, bread etc.

feel to touch :-

Perceptiveness to touch should be exact as it is desired to be – a sponge cake should be light and spongy.

Softness :-

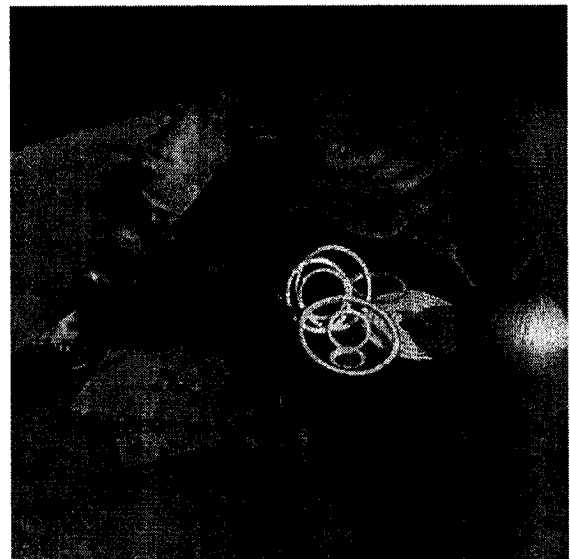
It is the characteristic of the texture and the product should possess the resiliency (springiness) to gradually retain to its normal shape-idilly , dhokla , bread etc.

Mouth feel :-

Texture involves feels or bite tenderness – dry, soft, wet, hard, firm-ness , crumbliness.

Various Textures

1. Firm and Close
2. Short and Crumbly
3. Light and Even
4. Spongy
5. Flaky
6. Smooth
7. Coarse and Open Texture
8. Hard Texture
9. Lumpy Texture



6.3 Questions

1. Write about texture and mouth feel?
2. Give combining and mixing methods?

6.4 References

theory of cookery – krishna arora

Lesson – 7**BASIC METHODS OF COOKING****7.0 OBJECTIVE: -**

- 1 To learn the basic methods used in food preparation

7.1 Contents**7.2 Cooking Techniques****7.3 French grilling terms****7.4 Questions****7.5 References**

Heat-activated cooking methods take five basic forms. Food may be immersed in liquids such as water, stock, or wine (boiling, poaching, stewing); immersed in fat or oil (frying); exposed to vapor (steaming and, to some extent, braising); exposed to dry heat (roasting, baking, broiling); and subjected to contact with hot fats (sautéing). With minor modifications, all five methods are applicable to any type of food not eaten raw, but certain treatments traditionally are rarely used to prepare particular foods. Deep-fat frying, for example, is not generally thought the ideal method for preparing steaks or chops.

Cooking Techniques**Methods of Heat Transfer**

Heat can be transferred by three methods- Conduction, convection and radiation. Two or three of these methods may be combined. For example, in baking a cake, convection heat cooks the mixture, then the cake comes in contact with the cooking utensil. Heat is also transferred by conduction. The browning of the cake is by radiation.

Conduction is the passage of heat through a solid or one solid to another provided they are in contact-Pot on a hot plate. Some materials retain heat better than others. Copper, for example, heats up very quickly and evenly but does not retain heat well. Stainless steel, iron, pyrex and ceramic cookware, on the other hand, retain heat well. Heat conduction includes shallow frying, sautéing and stir-frying.

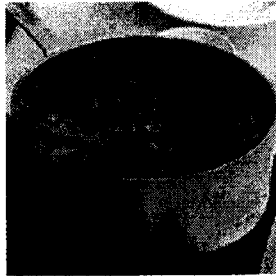
Basic Methods of Cooking

Cooking helps to preserve colour, get a variety of texture, enhance flavours and make the nutrients easily available, though a few of the nutrients, which are water soluble are lost or oxidized.

Various Methods of Cooking

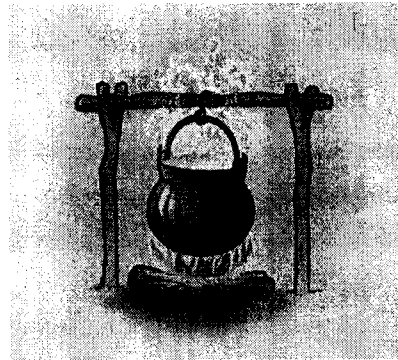
1. Boiling
2. Poaching

3. Steaming
4. Stewing
5. Braising
6. Roasting
7. Grilling
8. Baking
9. Frying
10. Griddling or Broiling



Boiling

Boiling is cooking by immersing the food in a pan of liquid, which must be kept boiling all the time, i.e quite a number of bubbles should be seen on the surface. Boiling is restricted for meat and poultry for the first few minutes in order to seal the pores, to retain natural juices and then gentle boiling must take place which is known as simmering at 82^o-99^oC (180^o-210^oF). Boiling temperature is 100^oC (212^oF) Vegetables are boiled at 100^oC(212^oF)

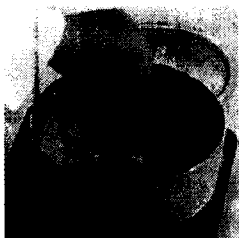


Poaching

Poaching is cooking gently in water which is just below boiling point (93^o-95^oC). The liquid is half as close to boiling point as possible without there being any perceptible movement of the liquid.

Steaming

Steaming is cooking by moist heat. i.e., steam-direct or indirect. Indirect steaming is done when the food is placed in a closed pan, which is surrounded by plenty of steam from fast boiling water or in a steamer.



Stewing

It is a time consuming method of cooking, but the advantage is that the coarser, older and cheaper types of poultry and meat are used as they are unsuitable for grilling and roasting. Cheaper cuts of meat and certain fish dishes* (bouillabaisse, matelote) are prepared by this method, as it renders it tender and palatable.

Braising

This is a combined method of roasting and stewing. In a pan with a tight-fitting lid or casserole, braising is done to prevent evaporation, so that the food retains its own juices together with the article added for flavorings e.g. bacon, hearn, vegetables and herbs. The meat and poultry used for braising is mature, it is a long method of cooking and tenderizes the less tender cuts and grades of meat.

Roasting

The term roasting was originally applied to the cooking of large pieces of meat, on a turning spit over an open fire, a practice which would be reasonably called grilling or perhaps barbecuing today. Traditional methods of roasting, practiced at present are (1) pot roasting (2) oven roasting (3) spit roasting (4) tandoori method of roasting.

Grilling

Cooking by the grilling method began years ago, when meat was first placed near or over an open fire. It has steadily advanced through the years to the most modern gas, the electric grills and infra-red models.

The food is placed on grills bars, and subjected to the action of radiation which could be from below or above. The source of heat may be from charcoal, coke, gas or electricity. In an authentic grill the heat is located below the grill bars, and if the source of heat is above the grill bars, the grilling equipment is called salamander.

7.3 French grilling terms

Au bleu	—	rare , very underdone
Saignant	—	underdone
A point	—	just done (medium)
Biencuit	—	well cooked

Baking

Baking is cooking of food by the action of dry heat in an oven. The degree of dryness of heat may be modified by the amount of steam produced from the items baked. Bread rolls, cakes, pastries, puddings, potatoes, vegetables, farinaceous dishes are baked.

During baking, the mixture or moisture in the product expands by air, steam or carbon dioxide.

Frying

Food is fried when it is placed or immersed in oil or fat at a sufficiently high temperature: used to brown the surface at least and partially or completely cook the interior of the food. Frying adds flavor to otherwise bland and tender foods; it also creates a crisp crunchy texture.

7.4 Questions

1. Write about moist – heat methods?
2. Explain about grilling and roasting with proper explain.

7.5 References

Theory of cookery – Krishna arora

LESSON – 8**EFFECTS OF HEAT ON COOKING****8.1 Objective :**

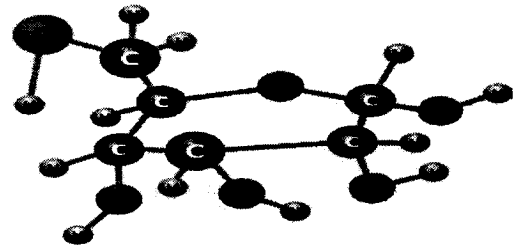
- 1 to learn the importance of heat and how it makes change in food preparation

8.1 Contents**8.2 Effects of Heat on Cooking****8.3 Characteristics of Raw Materials****8.4 Questions****8.5 References****8.2 Effects of heat on cooking**

The effect of meat (myosin), of egg (albumen), of wheat (gluten), of pulse (legumin) is coagulated by heat. Avoid high temperatures as the protein hardens, denatures and shrinks and the food becomes indigestible. The connective tissue is converted into gelatine which is soluble in water and rendered digestible. The protein's biological value is improved by moderate heating.

Carbohydrates

1. Starch
2. Cellulose
3. Sugar

**8.3 Characteristics of Raw Materials**

For the preparation of good, tasty, colorful dishes, it is essential to have a basic knowledge of the raw materials, their characteristics and the special part they play. This knowledge helps to substitute materials when necessary, or rectify the texture and taste if something goes wrong. Also, it helps to improve the quality and get a standard end product.

The raw materials are thus classified according to the part they play in making up a dish.

1. Salt
2. Liquids
3. Sweetening
4. Fats and Oils
5. Raising Agents
6. Thickenings
7. Flavorings and Seasonings
8. Eggs.



Salt

It brings out the flavor of other ingredients. The other name for salt is sodium chloride; it is readily available in all parts of the world in a solid (rock salt) or in a solution form (Sea Salt).

Salt is available in 3 forms: 1. Table Salt (Fine) containing phosphate; 2. Coarse or Freezing salt for culinary purposes; 3. Celery Salt. It is a blend of celery root and ordinary salt and is purchased ready prepared. It is used for flavoring certain dishes as an alternative to fresh celery or celery seed.

LIQUIDS

Liquids are important as they are used for the purpose of cooking, binding and coating, etc. Milk, Water, stock and fruit juices are the most commonly used liquids. They prevent food from burning, bind dry ingredients and help in maintaining the right consistency. Water and milk are used for preparing poaching liquor (Court bouillon) soups, sauces, gravies, cakes and pastry mixtures and kneading of dough's etc

SWEETENING

When sweetening is used with other foods it enhances the combined sensations of odour and flavor of the dish produced . It also adds its own sweetness, and is a versatile food product. Its uses in the kitchen are varied. Substitution of one sugar (Castor, icing) for another in a baking formula, gives allowance for the differences in the sweetening effect.

Fats and Oils

Fats and Oils are nutritionally useful and in some form, economical sources of energy and give a satiety value to the dish. They also contribute characteristic palatability, qualities of flavor and texture. They are popularly used as the medium of cooking.

Thickening and binding agents

Thickening agents give body, consistency, and palatability, when used. They improve the nutritive value. Flavored liquids are thickened and converted into soups, sauces, gravies, curries, bravadoes, mousse puddings etc.

Binding agents are used to form a mixture of ingredients into a cohesive mass.

The thickening agents are starch, agar, eggs, gelatin, coconut, tamarind, curd, poppy seeds, onion paste, coriander powder, etc. Starch is the reserve carbohydrate of plants and is abundant in common foods: corn, rice, wheat, potatoes, arrowroot, and tapioca; rice has about 80% starch, wheat 70% potatoes about 19% starch.

Starch is classified into: Cereal starches, root starches and instant starches.

Flavorings and Seasonings

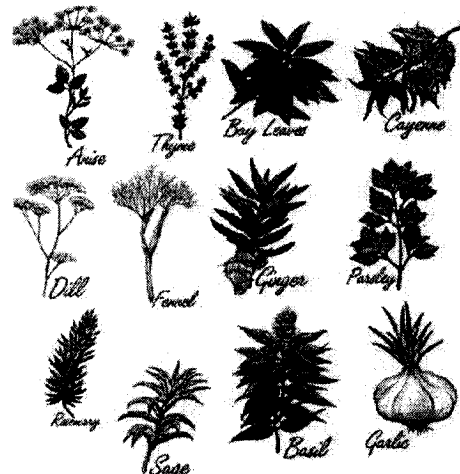
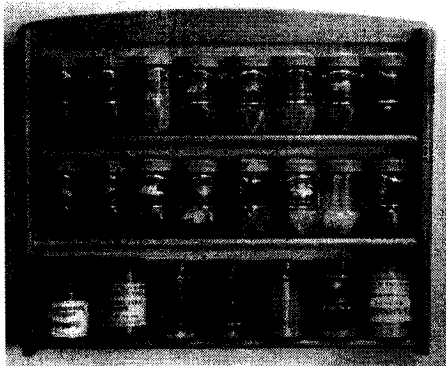
Spices and herbs give flavoring and seasoning to the dishes. To get effective results, not only should the food please the eye, but should also flatter or stimulate the palate. The success of cooking largely depends upon the help we obtain from flavoring and seasoning. The spice we use for this purpose should be used sparingly, as well as with skill. All palates may not crave for highly spiced food, yet majority of people demand that the food be moderately flavored with the right constituents.

Importance of Spices and Herbs

1. Help in digestion
2. Used for medicinal purposes
3. Enhance flavor
4. Improve appearance
5. Improve Palatability
6. Act as Preservatives

Spices are aromatic seasonings that come from the bark, (cinnamon), buds, (cloves), fruit, (paprika), roots, (ginger), or seeds, (nutmeg), of plants. Herbs are the leafy parts of plants such as basil, mint, or oregano. Spices should be kept in a cool dark cabinet. Heat and light will facilitate deterioration. It is generally recommended to discard any spices more than six months old. Herbs should be wrapped in a damp paper towel or cloth and then placed in a plastic bag in the refrigerator. Or, you can trim the stems of some herbs like parsley and cilantro and place them in a glass of water in the fridge. The sooner you use fresh herbs the better as they rapidly lose their potency once harvested.

Fresh herbs are usually best when added to a dish near the end of cooking or even after it has been removed from the heat. Overcooking will dissolve their fragrance. The exception is preparations that are not cooked such as salsa, dips, and marinades. Adding the herbs at the beginning and allowing the item to rest will give the herbs time to infiltrate the base ingredients. Many spices, since they are dried, can be added at the beginning of cooking since heat and moisture is needed to release their essential oils.



8.4 QUESTIONS

1. EXPLAIN EFFECTS OF HEAT ON COOKING ?
2. WRITE ABOUT RAWMETERIALS IN COOKING?

8.5 References

1. Modern cookery – volume 1 by thangam phillip
2. The art and science of culinary preparation by Jerald W chesser.

LESSON – 9

RECHUAFFE

9.0 Special methods of cooking foods

Infra-red cooking

Dry heat is excellent for cooking meat, fish and other items which are fairly tender to begin with. The food is placed a few inches above or below the heat source. Some of the heat which is given off by the heat source is carried to the food by means of convection, the rest by means of radiation. The radiation is in the form of infra-red rays. Infra-red rays are a form of radiation which is just a little longer than those waves which are seen as red as and shorter than radio waves and micro waves.

Infra –red waves penetrate food slightly

Infra red wavelengths are small and range in length from about 0.07 to 1000 millionths of a meter.

Infra-red waves are energy waves just a little longer than light waves.

9.1 Rechuaffe

Rechuaffe means to reheat. Frequently many cooks come across a few left-overs in their kitchens. In the interest of economy, a sound knowledge of the left- over foods is necessary. These left-rover's should be used in some form or the other. Many tasty and interesting dishes can be prepared, but care should be taken that the food is thoroughly and carefully reheated. It is also important that only sound food is used. "If there is any doubt, throw it out." If meat is over –cooked, it will toughen the fibers and harden the proteins thus making food indigestible and in palatable. mashed potatoes will make it monotonous. In producing a dish with left-over, it should not be obvious that the main ingredient of such a dish is not fresh.



Meat and fish lose some of their nourishing components in cooking and this could be supplemented by other foods. In addition to these points, the importance of suitable seasonings and flavorings and suitable accompaniments adds and supplements any deficiency in food value, and also determines the success and value of a Rechuaffe dish. Care must be taken that frequent repetition does not occur. Always the use of minced meat or

9.2 General directions for reheating of food

1. To bring down the food cost, utilize the left-rover's, such as vegetables, eggs, rice, paneer, sauce or gravies, etc.
2. The left-over vegetables could be mixed with salad dressings, used as salads and served cold.
3. Sauces could be made sharp by adding pepper, mustard, vinegar or tomato puree, etc.

4. Panada or thick binding sauces will help to bind mashed or chopped ingredients for croquettes. Mashed potatoes could be used without sauce, fish cakes, aloo ka parathas, etc.
5. Cooked left-over rice could be made into croquettes, lemon or curd rice.
6. Curries could be improved by adding fresh ingredients such as beaten curds or ground cashew nuts or coconut paste. Onions mushrooms, curds, curry paste improve the flavor and taste when added.
7. It is important that the excess fat, gristle is removed or it will make the Rechuaffe dish greasy.
8. Trimming and bones could be used for brown stock.
9. White sauce is appropriate for fish and poultry, and brown sauce for the meat.
10. Marinating of meat or fish improves the flavour.
11. To improve the taste for the fish, white meat, lemon juice, parsley nutmeg could be added.
12. The flavouring and seasonings, when mixed with finely minced meat, blend better and heat penetrates quickly to all parts and this reduces the reheating time. Fish can be flaked and blended with spices
13. The addition of moisture in the form of gravy or sauce is necessary for the reheated meat dish, whether it is incorporated inside or served separately as it gives moisture to the dish and improves the taste.
14. If raw ingredients are to be added to the rechauffe dishes they must be cooked first, as the short time necessary for reheating does not allow time for raw food to be thoroughly cooked, e.g. onions in croquette mixture, potatoes in fish cakes, rice in cutlet mixture.
15. Protection of the food from direct heat of an oven or from hot fat can be done by giving protective coating by enclosing with batter, egg and bread crumbs or covering with mashed potatoes as in shepherd's pie.
16. Left-over stale bread can be used to prepare bread crumbs and puddings, cheese toast.
17. Rechauffe dishes should be dished neatly, decorated and garnished.
18. It is important that the dishes should be piping hot.

9.3 QUESTIONS

1. EXPLAIN "RECHAUFFE" WITH PROPER EXAMPLES?

9.4 References

Theory of cookery – Krishna arora

Catering management – mohini sethi, surjeet malhan

LESSON – 10**FOOD PREPARATION PREMISES****10.0 Objective :**

- 1 The requirements of a new establishments
- 1 To learn the hygiene and food handling knowledge

10.1 Contents :**Guidelines for the establishment of new food premises****Liquor licencing****Food Hygiene - General Structure****Guidelines for the establishment of new food premises****Food Storage****Personal Hygiene**

When establishing a new food premise there are a number of issues you must consider. Including investigating legislation, which you must comply with.

You will need to approach various departments .provisions of the various relevant legislation.

- 1 Food Act and Food Hygiene Regulations.
- 1 Public and Environmental Health Act and Regulations.
- 1 Development Act and Regulations.
- 1 City Development Plan.

10.2 LIQUOR LICENCING

When applying for a new liquor licence, the following issues will be taken into account:

- 1 Hours of operation
- 1 Noise
- 1 Number of patrons or capacity of the restaurant
- 1 Standard conditions such as those relating to the
- 1 Position of speakers
- 1 Fire Safety

10.3 FOOD HYGIENE – GENERAL STRUCTURE

Floors :

- 1 must be durable, easily cleaned, non-absorbent and non-slip.

Walls :

- 1 must be smooth, easily cleaned, light colour with glazed tiles immediately above sinks and hand basins.
- 1 must have a covering between floor and wall junctions.

Ceilings :

- 1 must be smooth, easily cleaned and light colour.

Benches :

- 1 must be smooth, durable and impervious to water, ie. stainless steel or laminate.

Avoid particle board in wet areas.

Lighting – Australian Standard 1680 :

- 1 Ensure food preparation area is of illuminance 300 Lux.

Exhaust hoods – Australian Standard 1668 :

- 1 hoods must be over cooking appliances rated at or above 8kw out put or equivalent.
- 1 hoods must comply with standard.

Dishwashing requirements:

- 1 must be either a double bowl sink or a commercial dishwasher.

Food Preparation requirements:

- 1 a separate sink is required for food preparation.

Hand washing requirement :

- 1 a hand basin is required adjacent to the food preparation area with hot and cold water supplied through a single outlet.
- 1 supply of soap and hand drying facilities such as disposable paper towel or a hot air drier.

Food Storage

- 1 Hot foods must be stored at 60°C or above.
- 1 Cold foods must be stored 5°C or below.
- 1 Frozen foods must be stored at –15°C or below.

- 1 The '4-hour/2-hour' rule – any ready-to-eat potentially hazardous food, if it has been at temperatures between 5°C and 60°C:
 - For a total of less than 2 hours, must be refrigerated or used immediately.
 - For a total of longer than 2 hours but less than 4 hours, must be used immediately.
 - For a total of 4 hours or longer, must be thrown out.
- 1 Prevent contamination by ensuring raw foods are stored below cooked foods.
- 1 Ensure all food is covered or stored in food grade containers with lids.
- 1 Avoid over stacking food in cool room.

Food Handling

- 1 Minimise hand contact, by using tongs or gloves where possible.
- 1 Clean and sanitise utensils and equipment after use.
- 1 Wash hands and/or change gloves frequently.
- 1 Thaw food in refrigerator or microwave thoroughly before cooking.
- 1 Rapidly cool cooked food to below 5°C.
- 1 Rapidly reheat cooked food to above 75°C.
- 1 Do not allow cooked food to contact raw food, or utensils used for handling raw food.
- 1 Provide separate cutting boards for cooked and raw foods.

Personal Hygiene

- 1 Ensure hands are washed between handling raw and cooked foods, after visiting the toilet, using a handkerchief or tissue, handling garbage, touching your ears, nose, mouth or other parts of the body, smoking and after every break:
- 1 Clean clothing should be worn at all times.
- 1 Ensure cuts and sores are covered with coloured band-aids and wear a glove.
- 1 Do not handle food when sick and report your illness to your supervisor.
- 1 Ensure long hair is tied back.
- 1 No smoking in food premises.
- 1 Store all personal belongings away from food preparation areas.

Waste Storage

- 1 Ensure waste storage area is kept on site and is proportional to the capacity of the restaurant.

- 1 Ensure all waste is kept in a waste bin. Do not store your waste on the ground or other surfaces.
- 1 Ensure all waste is placed in a sealed plastic bag.
- 1 Do not discharge solid or liquid waste into the street or gutter.
- 1 Do not leave bins in public places (streets, laneways or footpaths), except on collection day, and promptly return your bins to the storage area.
- 1 Keep bin lid closed at all times.
- 1 Clean and sanitise bin regularly.
- 1 Store waste oil drums on a drip tray to prevent spillage.

Cleaning Agents

- 1 Cleaning agents and other harmful substances must be stored in an area separate to where food is stored, prepared or eaten.
- 1 Cleaning agents must be stored in an area with a sluice.
- 1 All containers are to be clearly labelled.
- 1 Ensure Safety Data Sheets are stored adjacent to all chemicals.

Toilets

- 1 Adequate toilet facilities are required for employees.
- 1 Toilets should have their own hand basins.
- 1 Hand drying facilities must be present and should be either disposable paper towel or hot air drier.
- 1 Facilities cannot open directly into food handling area/preparation and an air lock must be fitted.
- 1 Facilities may be required for patrons.

10.4 References

Catreng and Hospitality Food Preparation and Cooking - By Ann Bulleid

Lesson – 11**FOOD AND COST CONTROL****11.0 OBJECTIVE :**

- 1 to improve the bussines and revenune of establishments
- 1 to learn new techniques involved in food production

11.1 Contents**11.2 Food Costing****11.3 Different Process Involved in Food Production****11.4 Types of Products****11.5 Questions****11.6 References****11.2 FOOD COSTING**

Determination of food needs is a major phase of the total purchasing, responsibility and quantities of food needs. It is based on number of persons to be served, size of portion, shrinkage loss, specific menu items.

Whatever the size of the establishment that is operated, the basic management essential from the cost control point of view is to know first how much money has been received and second how much it has to take that money. The caterer must learn how to understand this and be able to interpret the results so that adjustments can be made where and when necessary. This is very important for the financial success of a catering establishment.

Systematic ordering should be done. Good purchasing, saves time eliminates errors and gives right food at correct time.

The costs of meals fall naturally into three distinct sections, the first being the cost of the food and second the cost of overheads, which include fuel, light, heat, water, staff uniforms and laundry, social security payments, superannuation contributions, printing and stationery, cleaning materials, advertising, telephones and postage, flowers, etc., licenses, maintenance, contracts, replacement of crockery and cutlery, linen, utensils, repairs in general, insurance, and finally rent rates and interest on capital outlay. The third section is labour, the salaries and wages. The relationship between these classes of costs is always a matter of interst, which varies considerably from one type of catering establishment to another, the overheads, etc., usually being greater than the bare cost of food.

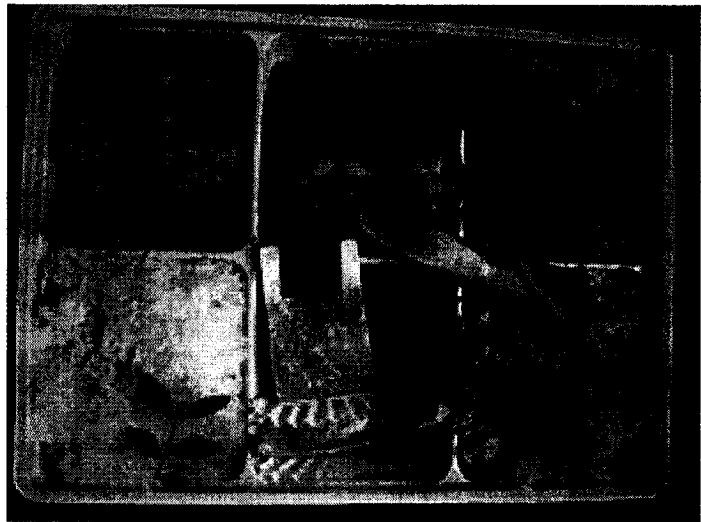
The problem of any management control system is to make sure that a pre-determined food and wage cost percentage has been decided. This figure will take in all aspects of expenses. The final trading results will show that a correct return has been made. To obtain this the following information should be studied.

when we are calculating the food costing we should talk about food production and process involved. depend on these we can easily estimate the food costing.

11.3 DIFFERENT PROCESS INVOLVED IN FOOD PRODUCTION

The following are some of the facts and methods used at present. Undoubtedly further progress in new developments will bring forth many more.

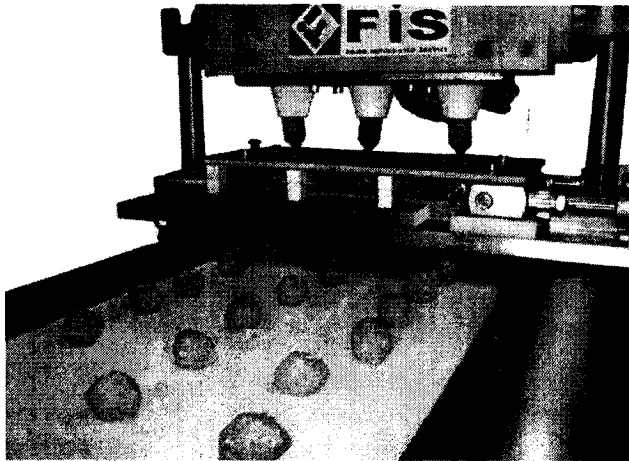
- 1 Accelerated Freeze Drying (A.F.D)
- 2 Additives
- 3 Aseptic Canning
- 4 Boil-in-the-bag" Ready Food
- 5 Dehydration
- 6 Dehydro-Freezing
- 7 Freeze Dehydration
- 8 Freezer Burn
- 9 Freezing
- 10 Free-Flowing Products
- 11 Instant-Freezing Preservation
- 12 Irradiation
- 13 Preservation
- 14 Spray Drying
- 15 Sublimation
- 16 Smoked Preservation



11.4 Types of Products

Apart from the different methods, which produce the greater part convenience food in dry, quick frozen and canned food, there are products which are very suitable for large scale catering and produce quite an acceptable article. When used with imagination and sometimes methods from conventional cookery, a much wider variety of dishes are being produced. (Lecturer to quote examples and draw attention to display board on "Convenience Food" e.g., instant soups, salami sausages (tinned) canned rasgullas, condensed milk, haricot beans in tomato sauce, tinned cream, mayonnaise, meat balls in gravy, etc.)

Convenience foods available are dehydrated such as frozen vegetables, frozen poultry and meat, jams, jellies, ketchup, sauces, squashes, and syrups, vegetables canned, frozen custards, ice creams, puddings and custards and mixes. Indian dishes include iddies, wadas, dosas, soups, gulab jamuns, upma, kheer, tandai, phirni, falooda, Karachi halwa etc.,



The recent growth of mass retailers and increasingly sophisticated tastes are translating into opportunities for consumer-

ready food products. Large retailers are looking for ways to increase their assortment of imported foods.

Best-selling U.S. products include pork, poultry, seafood, processed vegetables, fruits, tree nuts, dairy products, juices, alcoholic beverages, condiments, sauces, cooking oils, organic foods, coffee, snacks, and confectioneries.

In western countries in Mass Catering Units- Convenience food is widely used as labor is very expensive . In India the use of convenience foods are limited compared to the west. Convenience foods are more expensive in india and are not widely used. They are economical only in off seasons. Nowadays, convenience food are being used as it is available and gives a variety and is convenient. Items can be used even if they are not in season. In Western countries, Indian Convenience foods are available such as rotis, parathas, nans, and kulchas. Tinned curries are available such as sarson ka saag, tinda curry, jack fruit curried, etc., the Indain sweets are very popular such as tinned rasgullas, gulab jamuns, halwa,etc.

11.4 QUESTIONS

- 1.Explain Different process involved in food production ?
- 2.wright about types of products?

11.5 References

Theory of cookery – Krishna arora

Catering management – mohini sethi,surjeet malhan

Lesson – 12**BUDGET AND FORE COSTING****12.0 OBJECTIVE :**

- 1 To maintain and improve the food production department
- 1 Controlling of food costing

12.1 Contents**12.2 Cost Control****12.3 Material Costing****12.4 Indenting and Costing****12.5 Quantity Control****12.6 Budgetary Control and Forecasting****12.7 Control of Wastage****12.8 Kitchen Control****12.9 Kitchen Organization****12.10 Questions****12.11 References****12.2 Cost Control**

Determination of food needs is a major phase of the total purchasing, responsibility and quantities of food needs. It is based on number of persons to be served, size of portion, shrinkage loss, specific menu items.

Whatever the size of the establishment that is operated, the basic management essential from the cost control point of view is to know first how much money has been received and second how much it has to take that money. The caterer must learn how to understand this and be able to interpret the results so that adjustments can be made where and when necessary. This is very important for the financial success of a catering establishment.

Systematic ordering should be done. Good purchasing, saves time eliminates errors and gives right food at correct time.

The costs of meals fall naturally into three distinct sections, the first being the cost of the food and second the cost of overheads, which include fuel, light, heat, water, staff uniforms and laundry, social security payments, superannuation contributions, printing and stationery, cleaning materials, advertising, telephones and postage, flowers, etc., licenses, maintenance, contracts, replacement of crockery and cutlery, linen, utensils, repairs in general, insurance, and finally rent rates and interest on capital outlay. The third section is labour, the salaries and wages. The relationship between these classes of costs is always a matter of interest, which varies considerably

from one type of catering establishment to another, the overheads, etc., usually being greater than the bare cost of food.

The problem of any management control system is to make sure that a pre-determined food and wage cost percentage has been decided. This figure will take in all aspects of expenses. The final trading results will show that a correct return has been made. To obtain this the following information should be studied.

1. All purchases must be controlled
2. Details of all merchandise received must be recorded, as and when issued
3. Any over-production of food must be checked and of course reused in the best and most economical way
4. Production-ingrains and amounts
5. Check of sales with direct numbers catered for
6. An efficient system of cash control
7. Sales of any kind checked with cash receipts
8. A record of costs for each section (Wine, cigars, flowers, meals rooms) must be made and recorded. These must be compared.
9. Total daily wage costs must be recorded.
10. A weekly summary of all the relevant details must be prepared.
11. The trading profit and loss account should be prepared.

12.3 Material Costing

There are three basic methods of cost control

- a) Quantity
- b) Selling Price
- c) Cost Price

An effective system will disclose shortfalls in receipts which may be due to one or more of the following:

- a) Faulty Buying
- b) Inefficient storing
- c) Bad and wasteful cooking
- d) Petty theft and leakage.

12.4 Indenting and costing

Indenting is similar to a requisition which is an interdepartmental documents sent for, lets say, requirements of foods, required to cook food. It is a document stating requirement of goods in terms of description of the goods, the quality, the specifications, the units and quantity required

and sent to the stores who intern will procure them on the day specified and dispatched to the Department concerned.

When one indents for smaller quantities for one recipe, it seems simple, as it requires only what is needed. When quantities are more for more people, then one has to look into several factors, such as :

1. Number of persons to feed, if numbers of people are large, then quantity is less.
2. Number of items on the menu
3. Choice provided on the menu
4. Number of vegetarians and non Vegetarians
5. Number of people to dine
6. Number of desserts
7. Selling price of the menu
8. Ala Carte, Banquet or Buffet
9. Silver plated or Buffet service

In terms of food production, we have to be well versed and try to maintain the food cost of items as against their selling price depending on the policy of the restaurant. To maintain the food cost, the actual consumption on that day will be termed as food cost of the day.

All the factors must considered and then one has to work out exactly the cost per portion of each dish. This should be updated yearly in terms of increase and the selling price will give an accurate intending and costing procedure.

Once it becomes known that the receipts from sales are less than could have been expected from the amount of food consumed it becomes worthwhile to examine more closely where the loss is occurring and to take corrective action before it becomes disastrous. Costing and control must be regular and continuous.

12.5 Quantity Control

The control of quantity consumed ensures that everything consumed has been accounted for. It does not ensure profitability. But provides a useful supplementary check and is simple to operate for example dishes, this method is good but not for complex dishes. For small establishments when one storekeeper is responsible and issues one egg and two bacon rashers for breakfast, it controls consumption.

Selling Price Control

This method is also most suitable for establishments with a limited range of items on the menu, especially when each item contains a small number of standardized ingredients. It can be used in conjunction with quantity control. When a comprehensive range of dishes is served and the composition in each is not rigidly standardized, it becomes necessary to adopt a different method based on cost.

12.6 Budgetary control and forecasting

Budgetary control and forecasting is not a substitute for the management. It is a discipline of action and policy-making administered by the management to ensure that short-term and further objectives are attained. It makes possible the maximum use of the assets, material and labor available and more importantly imposes on the management the obligation to specify its objectives. By highlighting the problems facing the management, it directs its energy into the areas most in need of management attention and improves the effectiveness.

The discipline of accepted norms of performance must be willingly accepted by the management and all personnel concerned with the attainment of the targets and objectives. The self-imposed discipline is a prerequisite of success of any budgetary or forecasting scheme.

Profit is the motive of all commercial enterprises. The intelligent application of forecasting and budgetary control will enable the management to tackle the problems in a positive and effective manner to this end, having first defined its target.

The immediate gains of an efficient budgetary control and forecasting system to the long-term advantage, are - (a) individual ability and skill can be demonstrated and acknowledged. Enthusiasm and confidence in the objectives of the enterprise can be inspired by encouraging individuals to set their own targets and for them to see their contribution. b. Training and recruitment scheme to meet known needs can be more purposefully arranged. The redundancy risk reduced, expensive high labour turnover curtailed by planning expansion in operations. A projected personnel policy is then possible, with great advantage to all. c. Efficient and equitable incentive scheme to encourage activists requiring stimulus can be introduced. d. The development of continuous trained management aware of the necessity to keep upto data. e. The confidence, that whatever difficulties the future may hold, the team will be able and willing to surmount them.

Certain factors should be looked into such as:

- a) The forecasting of revenue
- b) The conscious thought must be applied by the person responsible to the menu of earning the money and to the methods he will use to ensure that more is not spent than can be afforded.

All business require direction. For the direction to be effective, its functions and efforts must be can be carried out because of forecasting. Forecasting are invaluable, but need subdivision for accuracy.

- a) Immediate future or "tactical" forecast from today into the future, as far as the trading peculiarities of the enterprise will permit such forecasts to be accurate predictions. This may be a month, a quarter or half year or more, be the trading year subdivided into convenient or natural divisions.

- b) Long-term or strategic forecast based on projection of tactical forecasts for the future. From these, last come the policy decisions on matters of day to day policy and action, particularly regarding the investment of future capital in long-term projects.

12.7 Control of Wastage

Essential elements in any form of control of waste up to data planning are effective supervision and maintaining records.

As in any business, the following three items must be kept under constant examination:

- A. Correct use of payroll
 - B. Correct use of materials
 - C. Correct use of services
- A.
1. Over or understaffed according to requirements
 2. Job description, work schedules, job analysis
 3. Communications from the management
 4. Departmental understandin
- B.
1. knoweldge of purchasing
 2. standardied oredering
 3. quality purchases,specification oredering
- C. Store and stock control
1. Records of goods in and out
 2. Quality and Quantity Control
 3. Correct handling and storage
 4. Correct issues. Requisitions authorized

12.8 Kitchen Control

1. Not to over order
2. Correct and careful preparation, cooking and services standadised procedures, recipes, etc.,
3. Correct yields from items
4. Utilization of left-over foods
5. Control of daily issue. Amounts consumed. Daily returns made of raw and cooked foods.
6. Actual meals number against issues
7. Portion control chart and materials

Equipment, utensils and cleaning materials

1. Strict control of issues
2. Supervision and instruction required
3. Return on breakages and losses
4. Correct use of items and materials

Overheads have to be paid for out of sales.

1. Cost comparison for particular periods of time.
2. Replacement of outdated equipment

A workflow plan is necessary for the chef to perform the task in the minimum time possible with least effort.

12.9 Kitchen Organization

The organization of kitchens will vary, mainly due to the size and the type of the establishment. Organization depends on 5 factors

1. The menu as it determines the tasks, organization is based on the menu
2. Type of establishment
3. Size of Operation
4. Physical facilities
5. Human resources available

Obviously, where a kitchen has hundred chefs preparing for banquets for up to 1000 people and a lunch and dinner service for 300-400 customers with a la carte menu, the organization will be quite different from a small restaurant doing thirty table d'hote lunches or a hospital diet kitchen preparing diets.

Even when there are two kitchens of a similar nature, the internal organization may vary as each chef de Cuisine will have his own way of running his kitchen. It has been found most satisfactory in organizing the work of a kitchen to divide it into "Parties' or Corners".

The parties system was perfected by Escoffier and it was the result of studying about the food production and the recipes allocating tasks to different specialist so as to help produce the more complex dishes regularly, efficiently and swiftly. The kitchen was divided into sections, each one of which was responsible for a particular contribution to the entire food production system.

In the kind of kitchen Escoffier organized, the parties system reached the height of complexity because the end-products had to be of the highest finish and yet to completed to order in rapid sequence for a substantial number of customers. A set pattern was made.

Basically the principles of kitchen organization represent a standard practice though there are no set rules for deciding how many sections and how many staff a particular kitchen requires. Each catering establishment has different factors to be taken into consideration such as extent of menu, number of persons to be served and management policy.

The latest trend is to go with the size of operation. Volume of production determines, how many staff are required to perform the job. In small organization one staff member can combine several jobs. For example, curry making and tandoori dishes.

A large kitchen, which caters for a large number, will have more sections than a smaller kitchen catering for lesser numbers.

The number of staff in a section is determined by the amount of work to be done and importance of the contribution of the section to the menus and the skill of work. The base of different kitchen organization is taken from the Traditional Kitchen Organization that was pioneered by Auguste Escoffier, the instigator of the partie or corner system. He had many sections such as grill, roast, vegetable, fish, sauce, soup, larder, patisserie, etc

12.10 QUESTIONS

1. Explain Budget and fore costing in cookery?
2. write about kitchen organisation?

12.11 References

Theory of cookery – Krishna arora

Catering management – mohini sethi,surjeet malhan

Lesson – 13**KITCHEN AND MEAL PRODUCTION****13.1 Objective :**

- 1 Importance of proper kitchen and systematic production related to food

13.1 Contents**13.2 Kitchen Management****13.3 Kitchen Safety****Introduction****The Safework Place****13.4 Prevention of Cuts****13.5 Prevention of Burns****13.6 Prevention of Fall and Heavy Weights****13.7 Questions****13.8 References**

Food preparation is the term employed to denote cookery. Meal production follows a flow pattern which commences with the purchasing and selection of materials, their handling and processing and the ultimate presentation of the dishes to the customer where "food service" takes over. It is therefore obvious that we should start at the beginning and see that the purchasing of food is done properly.

13.2 Kitchen Management

The objective of kitchen management is to lead, organize and control the means of production and service of food.

The catering establishments' policy should be interpreted to the best of advantage, whether they are concerned by being an establishment of repute or to earn a good profit.

To manage the kitchen, the kitchen manager / chef de Cuisine should have a sound practical knowledge and should have the ability to organize labour, delegate the responsibility to appropriate staff who communicate well. The maintenance and cleaning of the machines is his responsibility. Labour saving, automatic machines are replacing the manually operated ones. The persons handling the machines should be able to follow the correct procedure for assembling, use and cleaning. Safety precautions have to be observed such as – a) Gas pilot lights must be lit before turning on the main het; b) The liquids should never be stored above eye level; c) The pot handles sticking out should never be placed over the edges of the stove or sides of the tables; d) Sprinkle flour on hot lids and pans; e) If fat or liquid is split on the floor, it should be cleaned and salt sprinkled on top immediately; f) Hot fritures should not be carried. G) Knives if carried should point downwards; h) Sharp instruments should never be left in sinks.

Controlling of labor needs great tact and ability, their comfort, skill, work and welfare has to be seen to. A strict disciplinarian is respected by many, provided he has a good judgment in dealing with matters and understands people.

A good management will see that food cost is controlled and the people working in the kitchen are content in their jobs and the work given is comparable with their ability. Staff should be trained on the job and if the performance is good, incentives, increments or promotions should be given, if need be.

Certain factors such as budgetary control, portion control, cost control, proper purchasing, control of production and service, control of waste, etc., play an important part in managing the kitchen.

Proper layout of work areas in the kitchen contribute to a successful catering establishment which will not only satisfy customers but also the staff will be contented

Food Preparation Premises

By law, no food business is allowed to be carried on in any insanitary premises.

A well-planned layout largely depends on:

1. Receiving supplies –(Checking quality and weights)
2. Storing of food properly
3. Food Preparation – Misc-en-place
4. Cooking
5. Servery
6. Scullery (Pan wash)
7. Scullery (Crockery, cutlery washup)

Intelligent placing of machinery, sinks and work-tables are contributing factors to the total daily kitchen mileage of food and unnecessary travelling by the kitchen staff. A perfect planned kitchen is one, where raw and cooked materials need the minimum of movement and require only to cover the same route once. Attention must be given to lighting, wiring, ventilation, planning, hot and cold water service and appropriate specialists should be consulted.

13.2. Kitchen Safety

Introduction

Kitchen work is usually considered a relatively safe occupation, at least in comparison with many industrial jobs. Nevertheless, the kitchen has many hazards. Minor injuries from cuts and burns are very common, and more serious injuries are all too possible. The quantity of very hot equipment and powerful machinery, combined with the busy, sometimes frantic pace, make it important for everyone to work carefully and with constant attention to rules of safety.

Staff (employees, cooks and cleaners) working in the food production area should be made aware of what is what and trained properly to meet any emergencies immediately so that they can react properly in case of any accidents rather than waiting for somebody to come. Staff must be made aware of the importance of working in a safe environment.

Maintenance a safe and secure working in the food production area should be made aware of what is what and trained properly to meet any emergencies immediately so that they can react properly in case of any accidents rather than waiting for somebody to come. Staff must be made aware of the importance of working in a safe environment.

Maintenance a safe and secure working environment : The 1974 Health and Safety at Work Act was passed to protect employees and employers to increase their awareness of the need for safety at work. The employer's responsibilities are to :

- a) Provide and maintain and equipment that are safe and without risk to health.
- b) Provide supervision, information and trainings.
- c) Issue written statements on general, policy and procedures regarding health and safety.
- d) Consult with employee's safety representative and to establish a safety committee.

Employees are responsible to take reasonable care to avoid injury to themselves or others, to co-operate with employers so as to comply with law and not to misuse anything provided for health and safety.

The safe work place

The management of the food service operation must see to it that the structure and equipment have necessary safety features.

- 1 Structure, equipment, and electric wiring in good repair.
- 1 Adequate lighting on work surfaces and in corridors
- 1 Non slip floors
- 1 Clearly marked exits
- 1 Equipment supplied with necessary safety devices
- 1 Heat-activated fire extinguishers over cooking equipment, especially deep-fryers
- 1 Clearly posted emergency telephone numbers
- 1 Smooth traffic patterns to avoid collisions between workers
- 1 Conveniently located emergency equipment, such as fire extinguishers, fire blankets, and first-aid kits.

13.3 Prevention of Cuts

- 1 Keep knives sharp. A sharp knife is safer than a dull one because it requires less pressure and is less likely to slip.
- 1 Use a cutting board. Do not cut against a metal surface. Place a damp towel, under the board to keep it from slipping.
- 1 Pay attention to your work when using a knife or cutting equipment.
- 1 Cut away from yourself and other fellow workers.
- 1 Use knives only for cutting, not for such jobs as opening bottles.

- 1 Don't try to catch a falling knife. Step back and let it fall.
- 1 Don't put knives in a sink, under water, or any place where they can't be seen.
- 1 Clean knives carefully, with sharp edges away from you.
- 1 Store knives properly. Hold the knife beside you, point down, with the sharp edge back and away from you. Don't swing your arm. Whenever possible carry knives in a sheath. Warn people when you are walking past them with a knife in hand.
- 1 Keep breakable items, such as dishes and glassware, out of the food preparation area.
- 1 Don't put the potable items in the ot sink.
- 1 Sweep up, don't pick up, broken glass.
- 1 Discard chipped or cracked dishes and glasses.
- 1 Use special containers for broken dishes and glasses. Don't throw them in with other garbage.
- 1 If there is broken glass in the sink, drain the sink before trying to take out of the glass.
- 1 Remove all nails and staples when opening crates and carton, and dispose of them.

13.4 Prevention of Burns

- 1 Always assume a pot handle is hot. Don't just grab it with your hand.
- 1 Put some white thing, e.g. flour on handle and lid to indicate that it is hot.
- 1 Use dry pads or towels to handle hot pans. Wet ones will create steam, which can burn you.
- 1 Keep pan handles out of the aisle so people won't bump into them. Also, keep handles away from open flames of gas burners.
- 1 Don't fill pans so full that they are likely to spill hot foods.
- 1 Get help when moving heavy containers of hot food.
- 1 Open lids away from you to let steam escape easily.
- 1 Use care when opening compartment steamers.
- 1 Make sure gas is well vented before trying to light ovens or pilot lights. Strike matches before turning on the gas. Also, strike matches away from yourself.
- 1 Wear long sleeves, and a double-breasted jacket to protect yourself from spilled or splattered hot foods or fat. Also, wear sturdy leather shoes with closed toes.
- 1 Dry foods before putting them in frying fat, or hot fat may splatter on you.
- 1 When placing foods in hot fat, let them fall away from you so that fat will not splash on you.
- 1 Keep liquids away from the deep fryer. If a liquid were spilled into the fryer, the suddenly created steam could spray hot fat on anyone nearby.
- 1 Always warn people when you are walking behind them with hot pans or when you are walking behind someone who is working with hot items.

- 1 Warn service people about hot plates.
- 1 Trays containing, hot liquid should be handled carefully. (put one hand on one side and the other one on the other hand).
- 1 When pouring boiling liquid keep your face away as far as possible.

13.5 Prevention of falls

- 1 Clean up spills immediately.
- 1 Throw salt on a slippery spot to make it less slippery while a mop is being fetched.
- 1 Don't carry objects too big to see over.
- 1 Walk, don't run.
- 1 Use a safe ladder, not chairs or piles of boxes, to reach high shelves or to clean high equipment.

13.6 Questions

1. Explain importance of kitchen system management

13.7 Reference Books

Catering Management

LESSON – 14**KITCHEN LAYOUT****14.0 Objective :**

- 1 To learn how much importance of proper kitchen lay-out to run a smooth production

14.1 Contents**14.2 Size and type of Kitchens****14.3 Kitchen Planning****14.4 Different types of Layouts****14.5 Arranging Kitchen****14.6 Questions****14.7 References****14.2 Size and type of Kitchens**

The size of the kitchen will vary according to the nature and amount of work to be done in it. Usually the space allotted to a kitchen is approximately half the dining area, but the ratio varies with the size and type of establishment, and the menu pattern. In a kiosk, for example, where ready-to serve snacks are displayed for sale and the only preparation consists of making eggs to order or sandwiches, tea and coffee, the size of the preparation area will be very small compared to the area in a food service, where meals have to be prepared and held hot, or heated before serving.

As a rule, it is good practice to provide a compact arrangement of work tables and equipment so that unnecessary time and effort involved in extra walking, stretching and bending is avoided. As a general guide 2.5m x 3m is sufficient for a single person to work in, while 2.5m x 4m provide comfortable working space for two persons. Every kitchen should also provide at least 9-10m² floor area clear of furniture, fittings and stored goods for every three people working in it. For every additional person an extra 7.5m² would be necessary.

In larger canteens, the size and shape of spaces provided for food preparation activity will be affected by the size and type of equipment, their placement, and the kitchen area in relation to the receiving, storage, and service areas. Too large or too small a kitchen space to accommodate the necessary equipment will lead to inefficiency in the use of the space. Too small a space will hinder work because of overcrowding, while too large a space will involve extra walking causing unnecessary fatigue to workers. Most importantly, the high cost of the wasted space will reflect unnecessarily high fixed costs, adversely affecting profitability.

COOKING EQUIPMENT

Essential modern kitchen equipment includes the following: a stove, or range; sink; work surface; various knives, pots and pans; such utensils as spatulas, whisks, specialized

Spoons and rolling pins; and a more highly specialized array of gear for producing pastries and other baked goods. In recent years such sophisticated equipment as blenders, food processors, and microwave ovens has become common. Although such tools do save considerable preparation and cooking time, none of them has improved on the results to be achieved by more traditional techniques.

14.3 Kitchen Planning

Along with the restaurant, the kitchen determines the number of customers to be dealt with during period. Kitchen areas vary according to the type and number of meals provided, and if allowance is to be made for special functions. As the number of customers increases, the areas of the kitchen relative to the seating capacity tends to be reduced.

Knowledge of peak load is essential for intelligent forecasting. The area may be 40% of the restaurant area, kitchen space estimates have been as low as 2 1/2 to 4 sq.ft per catering unit for a kitchen catering for 1000 to as much as 9 to 10 sq.ft. per head per meal served in small establishments. However, the modern school of thought favors small and more compact kitchen premises. 3 sq.ft per head is now considered adequate. This is the space recommended for labor saving and is based on work studies.

The floor is subjected to much traffic, so durability must meet the demand of the particular premises. The floor should be impervious to moisture and should not be affected by grease, salt, vegetable or fruit acids and preferably non-slip even when wet, and should be flat. There must be no joints or crevices where dirt, pests and vermin may accumulate and live in. Non Slip quarry tiles are the best.

The walls should be tiled to the ceiling or at least to a height of one meter. Above the eye level, can be painted. The ceiling should not harbor dirt and must be regularly cleaned to prevent dirt and condensation dropping on to the surfaces and food items below. The woodwork should be gloss painted as this is easy to wipe clean. Doors should be self-closing and they should have easily cleaned kick plates and finger plates, natural light should be used, if possible. The artificial lights when used should be properly fitted and shadows be prevented.

The windows and mechanical inlets using ducts and fans should be carefully planned and sited. Canopy over cookery equipment and range should be connected by ducts to exhaust fans. The ducts should be sufficiently high and the exhaust fans should have a strong pull for maximum extraction. The ceiling should not be low. Ancillary rooms should be adjacent to the kitchen area.

Meal Production

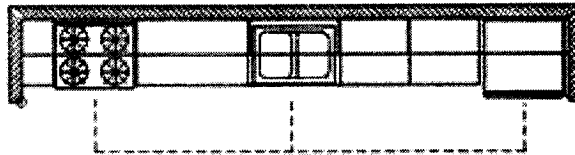
Food preparation is the term employed to denote cookery. Meal production follows a flow pattern which commences with the purchasing and selection of materials, their handling and processing and the ultimate presentation of the dishes to the customer where "food service" takes over. It is therefore obvious that we should start at the beginning and see that the purchasing of food is done properly.

The budget committee is formed for the purpose of preparation, coordination, review and revision of budgets. The various departmental budgets and master budget represent a coordinated effort.

14.4 Different Types of Layouts

One Counter or Strip Kitchen

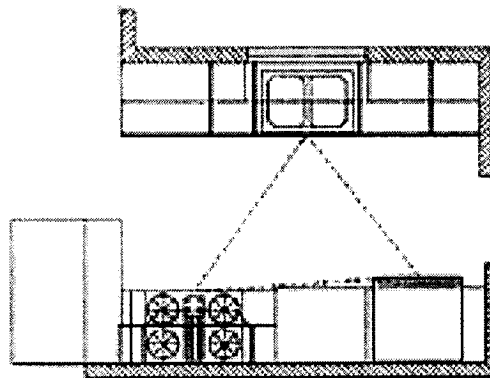
Commonly used in small space situations such as restaurants or small kitchen, which positions all appliances and work areas in one row.



A single counter plan is most efficient when the sink is centrally located and the total length is under 22 feet. The main disadvantage is that distances between work areas tends to be long, since a one counter kitchen doesn't allow a work triangle.

Two Counter, Corridor or Galley Kitchen

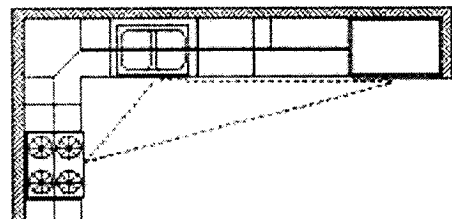
A kitchen open at both ends is a candidate for the corridor kitchen. This layout divides appliances and work areas between two parallel counters. (Parallel counters should be separated by at least 4 feet of clear space; 5 feet if two or more people will be working at the same time.) This arrangement creates a work triangle, usually provides ample counter space, and is generally a very economical type of kitchen to build.



Its main disadvantage is that the corridor between the two counters encourages foot traffic, especially if a doorway is at each end of the kitchen. And if the corridor leads to the outside, it may develop into a family freeway.

L-Shaped Kitchen

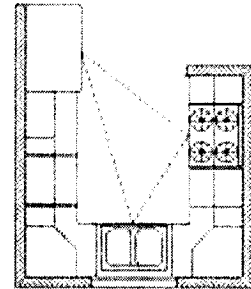
This layout utilizes two adjacent walls, spreading out the work centers; typically, the refrigerator is at one end, range or wall oven are at the other end, and the sink is in the center. Placing the sink and appliances can be a challenge; if the sink, refrigerator, and range are too far apart, the work triangle will be exhausting.



This is the most popular kitchen plan because it adapts to a wide variety of arrangements. Frequently, one "leg" of the L doubles as a room divider. This plan frees floor space for other uses and directs traffic away from the cook's work area.

U-Shaped Kitchen

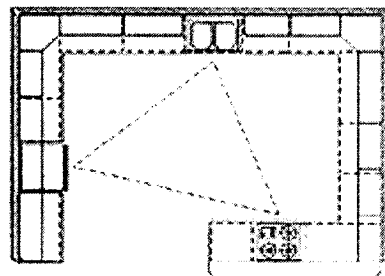
Requires lots of space, but is considered by many experts to be the most efficient floor plan because of its' compact work triangle and the easy separation of the work area from family patterns. This floor plan divides appliances and work areas among three connected counters arranged in a U. Any, or all parts of the U may extend into the room without wall support. Generally, the sink is placed at the base of the U, the range or cook top and the refrigerator on the facing legs. The result is a tight work triangle that eliminates wasted effort.



Counter space is continuous, and ample storage is made available. Problems arise if the kitchen is too small (less than 6 feet between base cabinets). Minor disadvantages are the extensive countertops - possibly more than you'll have use for - and the need for special cabinets to utilize the corners.

G-Shaped Kitchen

This newly popular shape combines the efficient U-shaped layout with an attached peninsula at one end. The G shape offers plenty of opportunities for specialized work centers and help shield the cook from distracting traffic; however, it may seem a little claustrophobic to some cooks



Island Kitchen

Island kitchens have helped expand the basic floor plans in recent years. All layouts, except the two counter kitchen, can benefit from the addition of an island. Freestanding and usually centrally located, an island can be mobile with locking wheels, adding extra work space wherever needed. If it isn't mobile, it may contain a sink or cook top. An island can also provide an eating counter.

Islands can efficiently control traffic, provide a tighter work triangle, create more work space, and add storage. They are especially useful in dividing large kitchen spaces into functional work areas.

14.5 Arranging Kitchen

The U-Shaped Kitchen is compact, letting you prepare a meal while walking the shortest distance. It works best with the refrigerator at one end of a counter - to keep the work area unbroken - and the sink in the center of the U.

The G-Shaped Kitchen is one of the newer solutions to improve efficiency and increase counter space. It combines the versatile U-Shaped kitchen with the advantages of an island.

The One Wall Kitchen is a compromise that must be used in small areas. If short, it can be tucked away behind closed doors - or it may be stretched to add more counter space. It is helpful to add a movable table, or an island on wheels to this arrangement.

Arrangement Guidelines

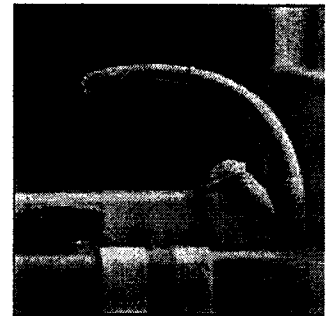
The old kitchen and the new one will probably conform roughly to one of these shapes. But, modern layouts are changing today's kitchens, causing new problems and bringing new solutions.

Many modern kitchens have separate, built-in ovens and cook tops. A dishwasher is considered a necessity by most homeowners and microwave ovens are often desired as well.

You can install your oven outside the main triangle; you don't use it as often as other appliances and most food stays in the oven for at least 15 minutes. A microwave is a fast cooker requiring frequent checking and you should consider putting the microwave in the triangle near the refrigerator, since most of the food cooked in it will probably come from the refrigerator.

If a barbecue grill isn't part of the cook top, it won't be used for every meal and can be located outside the triangle.

The sink is of utmost importance and should be close to the stove and the main counter top work area. Try putting these three elements in a row with the work area in the middle. The dishwasher and sink must be close neighbors since they share a drain.

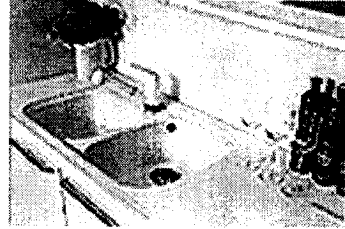


Placing the dishwasher on the side of the sink opposite the work area and the cook top allows you to open the dishwasher while you are cooking and leaves room right under the work counter for storage. A dishwasher in a corner is awkward to work around.

Make sure there is more than foot of workspace on either side of the cook top to allow room for setting down food that's on its way to, or from cooking. Don't put your cook top right up against a high cupboard, wall oven, or refrigerator; that arrangement can make you feel claustrophobic.



Counter space and storage are two essential elements in your new kitchen - often you want more of both. Plan for plenty of counter space, especially on the opening side of the refrigerator and on both sides of the sink and stove. Try to add a few extra inches of counter at any section that must serve two functions - food preparation and dish draining, for example.



The budget is made period wise or annually. The seasonal character of the business is taken into consideration. The first step in preparation is giving management objectives for the forthcoming year and giving a proforma to be used in preparation of budgets. The account's section prepares their budget in duplicate and sends one copy to the Head of the unit who is responsible for the budget of the catering establishment and the budget committee reviews it.

14.6 Questions

1. draw two types of kitchen lay-outs and explain?
2. talk about kitchen planning?

14.7 References

Catering Management

Theory of Cookery

Lesson – 15**CLASSIFICATION OF EQUIPMENT****15.0 OBJECTIVE :**

- 1 To increase knowledge of equipment and types

15.1. Introduction

Kitchen Equipment is expensive and to justify the expense it is essential that maximum use be made of it. This can be done only if the equipment being used works efficiently and in turn this depends on the care and maintenance of the equipment. The routine use, care and cleaning of all items of equipment are important and this should be understood. When selecting equipment, capacity, trade name, good quality, simple design and ease to clean should be considered.

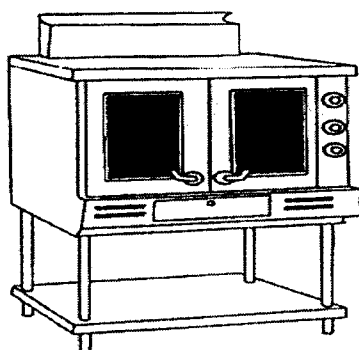
15.2. Points to be considered while Purchasing Kitchen Equipment

General points that must be considered when purchasing equipment for a kitchen are :

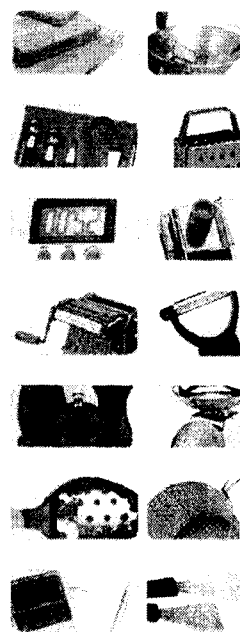
- 1 The layout of kitchen area
- 1 Type of dishes to be cooked
- 1 Capacity
- 1 Durability
- 1 Availability of future replacements
- 1 Flexibility
- 1 Design
- 1 Color
- 1 Storage
- 1 Rate of breakage
- 1 Ease of maintenance
- 1 Cost
- 1 Funds available
- 1 Brand name

15.3 COOKING EQUIPMENT

Essential modern kitchen equipment includes the following: a stove, or range; sink; work surface; various knives, pots and pans; such utensils as spatulas, whisks, specialized spoons, and rolling pins; and a more highly specialized array of gear for producing pastries and other baked goods. In recent years such sophisticated equipment as blenders, food processors, and microwave ovens have become common. Although such tools do save considerable preparation and cooking time, none of them has improved on the results to be achieved by more traditional techniques. Maintenance of Kitchens For any catering establishment, a schedule for kitchen maintenance is essential, a sample of which is given in table.



Most convection ovens are available in dual-stack or free-standing models.



15.4. Classification of Kitchen Equipment

In general, kitchen equipment may be divided into three categories :

- 1 Large Equipment : Ranges, steamers, boiling pans, fryers, sinks and tables.
- 1 Mechanical Equipment : Peelers, mincers, mixers, refrigerators, dishwashers.
- 1 Utensils and small equipments : Pots, pans, whisks, bowls, spoons, plate knives, graters etc.

The term "equipment" refers to all machinery, tools, utensils, crockery, cutlery, and furniture which may be used for operation, service and storage of food. The types of equipment required vary with the activities carried out in a particular area of work. For example, in storage areas mobile and adjustable racks are used for shelving goods. Whereas in the service areas cabinets with drawers for cutlery and napkins, are necessary and so on.

There are a number of pieces of equipment which can be used in more than one area of activity, such as, trolleys used for transporting goods from stores to kitchen can also be used for

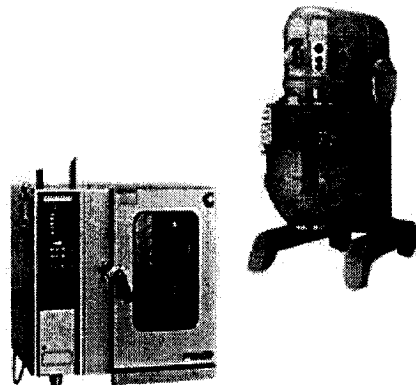
transporting prepared food from kitchen to service areas. Catering equipment ranges from simple boiling pans or pots, saucepans and iron grids to sophisticated cooking ranges, skillets, steamers, ovens, grills and temperature controlled fryers. The list can be endless depending on the cooking and eating habits of people in any region, and the type of foods service.

Care and Maintenance of equipment.

All equipment large or small, heavy or light, requires care in handling, use and storage in order to extend its life to the maximum, minimize depreciation and maintain it in a reasonably attractive and efficient condition while in use. In small catering establishments the care and maintenance is generally entrusted to those who operate the equipment as the types invested on are generally small or medium duty pieces. In larger establishments where heavy duty equipment predominates, a maintenance department performs this function.

In the case of small pieces like cutlery, some metals need less care than others. Stainless steel is the most non-corrosive and easy to-care for material, while plated cutlery tends to get scratched easily and with time requires replating.

With kitchen tools like the chef's knives, choppers, etc., care is limited to preventing the blades from rusting in the case of iron blades, by keeping them dry and covered. It is also common practice to rub them with a little cooking oil to protect them from rusting through contact with air. With whisks and beaters it is the rotating parts or the wiry ends which need special attention. It is good practice to wash or soak beaters and whisks immediately after use so as to prevent food materials from on drying on the rotator parts and posing a cleaning problem.



Schedule for Care of Equipment

1. Keep all equipment clean
2. Wash all removable parts of equipment with suitable detergent and hot water after each use. In tropical summers this is not necessary as the water in the taps is usually warm to hot, depending on the environmental temperature. After washing wipe equipment completely dry before replacing.
3. All small equipment like cutlery, ladles, chopping boards, kitchen tools, etc., should be washed after use as in (2)



and replaced in drawers and racks built for the purpose and covered to prevent them from dust or dirt during storages

4. Check that all pieces are in working order. Close supervision at work is necessary to ensure careful handling and to detect any deviations from effective operation, like an unusual sound, or fusing of warning lights; or ineffective thermostatic controls.
5. Repairs must be attended to without delay to prevent the equipment from giving way and disrupting work for any period of time.
6. A weekly, fortnightly or monthly programme for oiling or servicing the equipment to maintain movable parts or machinery in order is important. The service instructions provided by the manufactures along with the equipment are a good guide to the service procedure that should be followed. It is useful to prepare an instruction card for every equipment carrying the manufacturer's instructions in as simple a form as will be understood by the operators of the equipment. This card could be kep near each major piece of equipment.
7. All electrical inputs to the equipment should be checked periodically to ensure that proper electrical load is available for efficient functioning
8. Insulations, plumbing and other connections need periodic checks to keep equipment running at iptimum efficiency.
9. Make full use of warranty periods to help train organization staff to learn regular maintenance procedures from the manufacturer's engineers.
10. Assign the care of each machine to one responsible person.

Money, time and effort spent on care helps to maintain equipment in continuous working order, while that spent on repair can mean interruption in work causing unnecessary strain on staff, in addition to extra costs.

Food Purchasing

Purchasing food is the basis for preparing and serving meals that are acceptable to the customer. Unlike purchasing for the home, the foods service manager cannot always go to the market and choose what he wants from the variety available. Infact, he has the disadvantage of not being able to actually. See the food he is buying till it comes to his door. This makes food purchasing a more difficult but challenging task.

Food Buyer

An institutional buyer spends a lot of money on behalf of the establishment and for the customers. He thus bears a heavy responsibility for the well-being of both. Every food buyer therefore needs to possess certain qualities to work effectively, such as:

- i) High moral and ethical values, so that he is not influenced by or obligated to suppliers in any way.
- ii) Objectivity in his judgement of quality offered in terms of price and service.
- iii) Loyalty to the institution through devotion to duty, exercising a sense of justice, being open-minded but alert to a seller's psychology and being hard working and patient.
- iv) Loyalty to customers in terms of being able to recognize good quality food that is free from adulteration and contamination.
- v) Skill in identifying markets, negotiating deals with suppliers and establishing good relations with people around.
- vi) Accepting food brands that are marked by standardizing agencies approving their quality such as ISI, FPO or AGMARK in India.

15.5. Hand tools and small equipment :

- 1 **Ball cutter or melon ball scoop** : The blade is small, cup-shaped half-sphere. It is used for cutting vegetables and fruits into small balls.
- 1 **Straight spatula or Palette Knife** : It is a long, flexible blade with a round end tool. This is used for spreading icing on cakes and for mixing and bowl scraping.
- 1 **Sandwich spreader** : It is a short, stubby spatula and is used for spreading fillings and spreads on sandwiches.
- 1 **Cook's fork** : A heavy, two-pronged fork with a long handle tool and is used for turning meats and other items. It must be strong enough to hold heavy loads.
- 1 **Bench scraper or dough knife** : It is a broad, stiff piece of metal with a wooden handle on one edge. It is used to cut pieces of dough and to scrape work benches.
- 1 **Pastry wheel or Wheel knife** : This is a round, rotating blade on a handle and is used for cutting rolled-out doughs and pastry and baked pizza.
- 1 **Tongs** : These are spring type or scissors-type tools, used to pickup and handle foods.
- 1 **Wire whip** : Loops of stainless-steel wire fastened to a handle. There are two kinds of whips:
 1. **Heavy whips** are straight, stiff, and have relatively few wires. Used for general maxing, stirring and beating, especially heavy liquids.
 2. **Balloon whips or piano-wire whips** have many flexible wires. Used for whipping eggs, cream and hollandaise, and for maxing thinner liquids.

- 1 **China cap** : Cone-shaped strainer. Used for straining stocks, soups, sauces, and other liquids. Pointed shape allows the cook to drain liquids through a relatively small opening.
- 1 **Fine china cap or chinois (shee-nwah)** : China cap with very fine mesh. Used when great clarity or smoothness is required in a liquid.
- 1 **Sieve** : Screen-type mesh supported in a round metal frame. Used for sifting flour and other dry ingredients.
- 1 **Colander** : Large perforated bowl made of stainless steel or aluminium. Used to drain washed or cooked vegetables, salad greens, pasta, and other foods.
- 1 **Food mill** : A tool with a hand-turned blade that forces foods through a perforated disk. Interchangeable disks have different coarseness or fineness. Used for pureeing foods.
- 1 **Grater** : A four-sided metal box with grids of varying sizes. Used for shredding and grating vegetables, cheese, citrus rinds, and other foods.
- 1 **Zester** : Small hand tool used for removing the coloured part of citrus peels in thin strips.
- 1 **Channel knife** : Small hand tool used mostly in decorative work.
- 1 **Pastry bag and tubes** : Cone-shaped cloth or plastic bag with open end that can be fitted with metal tubes or tips of various shapes and sizes. Used for shaping and decorating with items such as cake icing, whipped cream, duchesse potatoes, and soft dough.
- 1 **Pastry brush** : Used to brush items with egg wash, glaze etc.
- 1 **Can opener** : Heavy duty can openers are mounted on the edge of the workbench. They must be carefully cleaned and sanitized every day to prevent contamination of foods. Replace worn blades, which can leave metal shavings in the foods.
- 1 **Skimmer** : It is a perforated disk, slightly cupped, on a long handle. It is used for skimming froth from liquids and for removing solid pieces from soups, stocks and other liquids.
- 1 **Pastry bag** : A cone-shaped cloth or plastic bag with an open end that can be fitted with metal or plastic tubes or tips of various shapes and sizes. Used for shaping and decorating with items such as icing and filling certain kinds of pastries and other items, such as eclairs, and for portioning creams, fillings and doughs.
- 1 **Roller docker** : A tool that pierces holes in rolled-out dough to prevent during baking. It consists of a handle attached to a rotating tube fitted with rows of spikes.
- 1 **Rolling pins** : Many types of rolling pins are used in the bakeshop for rolling out doughs. Perhaps the most versatile pin, used for most general rolling tasks, is simply a solid hardwood rod, about 2 inches (5 cm) thick and 20 inches (50 cm) long.

1. **Turntable** : A round, flat disk that swivels freely on a pedestal base. It is used for rolling cakes while decorating.
1. **Scrapers** : A bench scraper, also called dough scraper, is a small rectangle of stainless steel with a handle along one of the long edges. It is used for cutting and portioning dough and for scraping purposes. A bowl scraper is a plastic about the same size but with one curved edge and no handle. It is used for scraping out the contents of mixing bowls.

15.6 Conclusion

Through of kitchen equipment is essential for success in the kitchen. Few food service establishments depend on nothing more than a range and an oven, an assortment of pans, knives and other hand tools. Modern technology continues to develop more and more specialized and technically advanced tools to reduce kitchen labour.

Much of this equipment is so complex or so sophisticated that only first and instruction and practice will teach you how to operate it effectively and safely. Other items, specially hand tools, are simple and need no explanation but require much practice to develop good manual skills.

A vast array of specialized equipment is available for today's kitchens ranging from crepe machines, pasta machines to doughnut glazers. In this technological age, every year brings new tools to simplify various tasks. Hence, a culinarian must regularly update his knowledge about the new equipments available in the market and their operational procedures.

15.7 Self Assessment Questions

1. What are the criteria to be considered while purchasing kitchen equipment ?
2. Explain briefly, the different types of equipment used in kitchen with maintenance and cleaning procedures?
3. List and explain five equipments used in bakery ?
4. Give short notes on various types of knives used in kitchen ?
5. Write a brief notes on different hand tools and small equipment used in kitchen?

15.8 References

1. Theory of Cookery by Krishna Arora
Professional Cooking 5th edition by Wayne Gisslen

Lesson – 16**DIFFERENT TYPES AND MAINTENANCE OF EQUIPMENT****16.0 Objective :**

- 1 To learn the maintainac of equipment

16.1 Contents**16.2 Setting up a Kitchen****16.3 Knives****16.4 Pots and Pans****16.4 Baking Equipment****16.5 Handheld Equipment****16.6 Electric Equipment****16.7 Cleaning and Maintenance****16.8 Questions****16.9 References****16.2 Setting Up a Kitchen**

You can spend thousands of dollars on kitchen equipment, or you can spend a couple of hundred bucks and be done with it. If you've been lucky enough to inherit hand-me-downs from friends or relatives, you may already have most of what you need.

In any case, it's worth cooking for a while with minimal equipment so that you can determine your priorities. If you bake bread, you will need different equipment than you do for baking cookies; if you make stews, you'll need different equipment than you will for grilling.

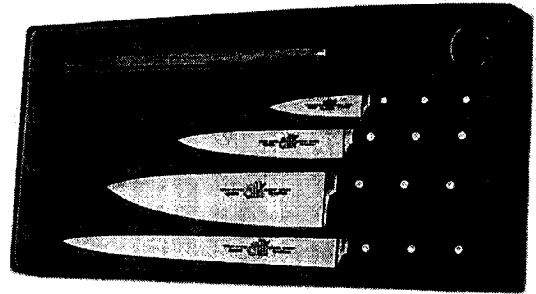
If you cook a lot, ultimately you'll want a lot of equipment, but when you begin there's no way to know that. Think of a beginning artist, who doesn't rush out and buy oils, an easel, brushes, watercolors, pastels, pencils, and so on, but takes it a few things at a time.

With that in mind, here's what I think it's best to start with.

16.3 Knives

Knives are the most important cooking expenditure, although not the largest. Buy knives with blades of a high carbon-stainless steel alloy for hardness and durability. A plastic handle is probably preferable to wood, because it isn't damaged by soaking. If you're careful not to let the knife bang around, you can put it in the dishwasher. And if you keep your knives sharp (you'll need a sharpening steel), they'll keep you happy for the rest of your life.

An 8-in (20-cm) chef's knife is the all-purpose blade for chopping and slicing. You can use it even for carving, until you buy a carving knife. It needn't cost more than \$30, although you can spend more if you like. Buy one that feels good in your hand, and move to a six-inch or ten-inch knife if your hands are small or large.



A couple of paring knives are necessary for peeling and trimming. Again, buy those that feel good in your hand, but don't spend more than a few dollars on each. And unless you only eat presliced bread, buy a long, sturdy bread knife with a serrated (notched) edge.

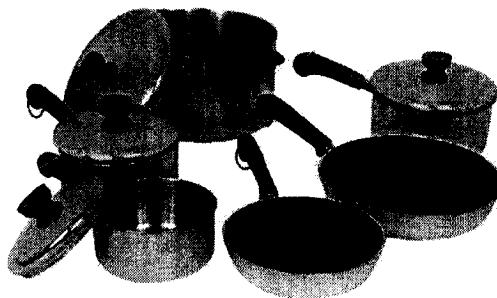
That should hold you for a while. When you get a chance, buy a sharpening steel, a boning knife (to remove bones from chicken), and a carving knife (for roasts). You'll never need more than that.

16.3 Pots and pans

Many people are overwhelmed by the choices in pots and pans: cast-iron, nonstick, aluminum, stainless steel, enameled, and copper. But even when money is no object, the most expensive pans are not the best. Many kinds of pans work well, and many of these don't cost much.



Cast iron or heavy-duty steel (a more contemporary equivalent of cast iron) are the best you can do, if you're strong of wrist and don't mind a little heavy lifting. Both are excellent at heat distribution and retention. Clean them correctly—with very little soap—and these pans become virtually nonstick in a short while.

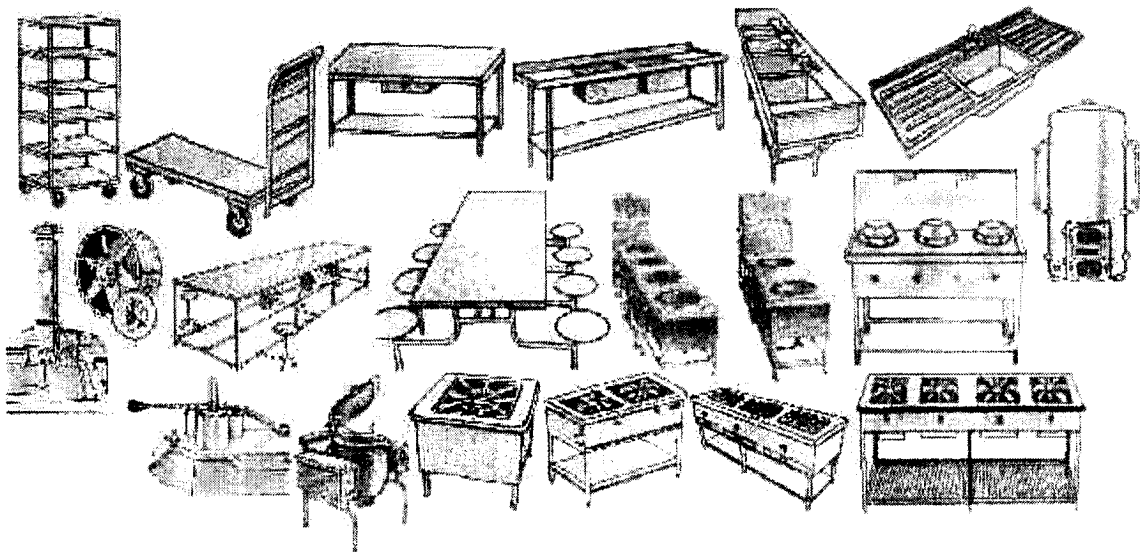


Enamel-coated cast-iron cookware has many of the qualities of heavy-duty steel or plain cast iron. Many people find the coated cookware more attractive, however, although the enamel eventually discolors, wears, and even chips. Even so, these pots have a classic look and are highly functional.

Nonstick pans are a marvel, and inexpensive cast-aluminum pans with nonstick surfaces are the best bargain in cookware. All restaurants use them simply because they work. They are not especially attractive, but they enable you to cook with no fat if you choose to do so, they clean up in a second, and they're extremely light in weight. Their disadvantage: Nonstick surfaces don't last long. Cooks wind up replacing these pans every few years.

Stainless steel is highly functional and good looking, although its name is misleading. Stainless steel does in fact stain and it isn't especially easy to retain its high-gloss, chromelike look through the life of the pan. But stainless steel is a good compromise: It's generally not super-expensive, it distributes and retains heat well, and it isn't as heavy as cast iron. And stainless steel with a nonstick surface is, for many people, the best pan of all: Though more expensive than cast aluminum, it's far better looking.

Whatever pans you choose, make sure the handle is ovenproof. Many dishes begin on top of the stove and finish in the oven, and plastic handles can't withstand the heat. For size, start with a pot big enough to cook a pound of pasta (6 qt [6 liters] or larger) and a skillet that can sauté a small, cut-up chicken (about 12 in [30cm] in diameter).



16.5 Baking equipment

With two exceptions, baking equipment is unlikely to be essential in your daily cooking. But it's critical when you need it. The exceptions are bowls and a baking sheet.

Bowls are incredibly important, not only for baking but for general cooking. Stainless steel bowls are cheap and durable, if not particularly attractive, but the material is mostly a matter of personal choice. Get a variety of sizes to begin with, and add as you need them.

Tiny ramekins (or custard cups) are really useful for setting aside small amounts of chopped or measured ingredients as you prepare them.

A cookie sheet, best thought of as a baking sheet, is also great for broiling, especially if it has a small lip. Go with aluminum. For most purposes, uncoated will be okay here, but nonstick coating never hurts.

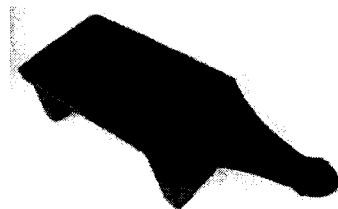
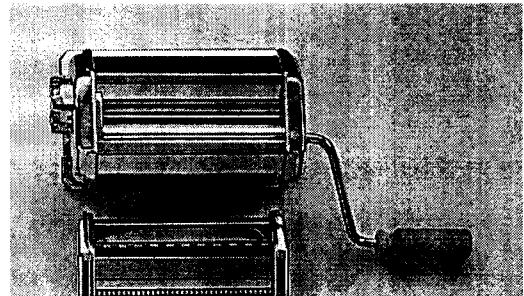
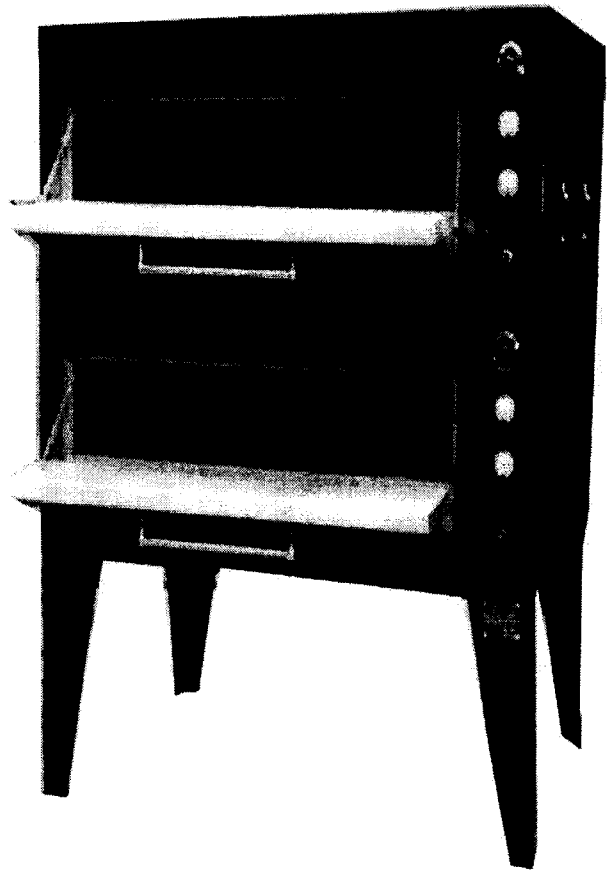
A pie plate or two is something you might want after that; begin with one, 9-in (23-cm) across, made of ovenproof glass. A 10-in (25-cm) springform pan with a removable rim is great for cheesecake. A tart pan with a removable bottom should be an early acquisition if you intend to do serious baking.

Two loaf pans (or none), depending on whether you bake bread, measuring 9 by 5 in (23 by 13 cm) or thereabouts. Nonstick aluminum is best here. Muffin tins of the same material are useful for cupcakes as well as muffins.

I recommend buying cake pans as you need them; otherwise you'll never have the right size. Or pick them up at tag sales as you see them.

16.6 Handheld equipment

A cutting board is a must; whether it's of plastic or wood is your choice. Plastic can go in the dishwasher, but wood is more attractive. Because you need more than one, try one of each until you determine your preference. Extremely heavy wood cutting boards are the best, but they also are costly.



To keep your cutting board from sliding around on the counter (annoying, isn't it?), place a damp towel under it.

Wooden spoons are best for cooking; metal ones are best for serving. You can add spatulas, ladles, slotted spoons, and the like as you go along or as you see them.

Metal tongs are the most useful tool for turning food as it cooks, and for removing it from the pan. Get the spring-loaded kind.

A set of measuring spoons and cups, maybe two, is essential. A scale is useful, but most beginners will find it superfluous.

Strainers and colanders can be added as necessary, if you start with a big strainer, which you can use to drain pasta.

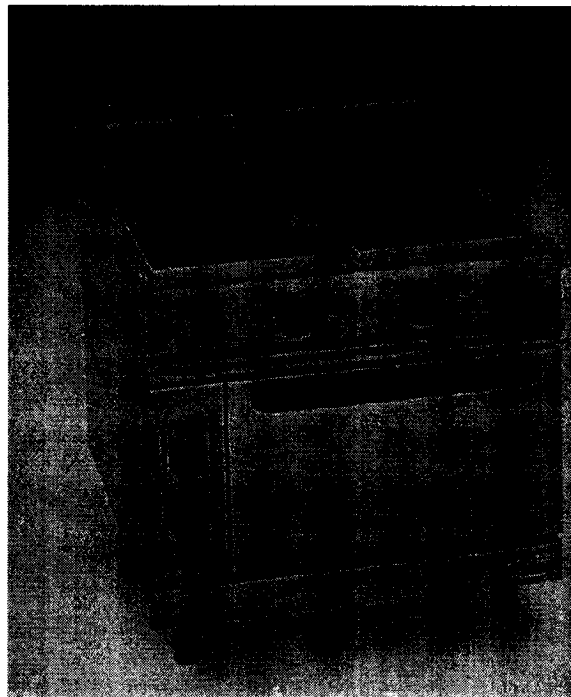
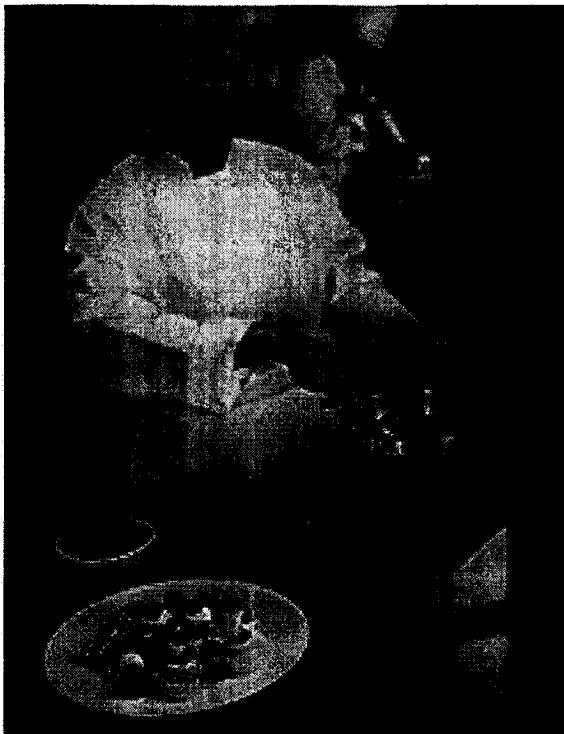
Graters are handy, though you can skip a manual grater if you have a food processor. The classic box grater is best among manual graters.

A vegetable peeler, with a u-shape, should be among your first purchases.

A salad spinner is the best tool invented since the food processor. Useful whenever you want to wash and dry almost anything.

16.7 Electric equipment

chefs handle different electric equipment when, it depends on usage, how much the production and the preparation of food. if it is large organisation you see so many electric equipment where time saves and fast out-put.



These are the most important electric

A food processor is invaluable. It can grate massive amounts of almost anything in seconds; it can make bread dough, pie dough, even some cookie batters in a minute; it can grind meat, make mayonnaise and bread crumbs, puree vegetables, and slice potatoes or almost anything else. Start with a large one, a model that can handle at least 6 cups of batter or dough; you might want a small one as well. Some models come with both large and small bowls and blades, and that's a good idea.

An electric mixer is important if you bake a lot. You may even want two: a powerful standing mixer and a small, handheld mixer. If you don't bake much, get a wire whisk and save both money and counter space.

A blender is an inexpensive and underrated but extremely useful tool, especially if you want to make creamy soups or blended drinks. In a pinch, it can perform many of the functions of a food processor, too. (The converse is not true.)

A coffee grinder is something to think about if you don't have one. For \$10 you'll have the ability to grind spices fresh, which makes a real difference.

A microwave is the most overrated appliance of all time. For heating and warming, and the occasional vegetable, it's not bad. But unless you have a big kitchen, reheat your coffee frequently, or are too lazy to make real popcorn, it takes up more counter space than it's worth. (And as for the bread machine, you've probably already discovered the limits of that!)

16.7 Cleaning and Maintenance

This is an important labor-saving, electrically operated piece of equipment which mixes the bread dough well. While small quantities of dough can be mixed by hand, commercial bakery in any quantity would be next to impossible without power mixers. Several types of mixers used in dough and pastry making are Vertical, Spiral and Horizontal Mixers.

Maintenance of Dough Mixer :

- 1 Wash bowl and dough kneading rod, or creamer or whisk.
- 1 Fix bowl on mixer, then attach rod or creamer as per requirement.
- 1 Put ingredients in the bowl, lift up the bowl by turning handle anti-clockwise.
- 1 Press green switch ; increase speed by turning gear handle clock-wise.
- 1 After use, reduce speed, press red switch, lift down the bowl by turning handle clock-wise. Remove mixing rod and then remove the finished product.

Cleaning of Dough Mixer :

- 1 Put off main switch of the dough mixer.
- 1 Wash all the attachments.
- 1 Check belt of the motor occasionally.

Tandoor : The tandoor should be coated with a mixture of ash, earth and water. The inside of the tandoor should be seasoned with mustard and oil. The latest is that gas tandoor is being used widely in the west as it is cleaner and has continuous heat.

Maintenance of Tandoor :

- 1 Put charcoal in tandoor ; seperately light some coal on gas burner. Pour live coal in tandoor.
- 1 Keep the ash-hole half open.

Bain-Marie : A bain-marie is a hot water bath. Containers of foods are set on a rack in a shallow container of water, which is heated by electricity, gas or steam. The bain-marie is used more in the production area, while the steam table is used in the service area.

Food Slicer : Food Slicers available are both manually and electrically operated. They are labor-saving devices which can be dangerous if not operated with care. Because of this, the working instructions should be placed in a prominent position near the machine.

Maintenance of Food Slicer :

- 1 Care should be taken that no material likely to damage the blades is included in the food to be sliced. If a piece of bone comes into contact with the cutting blade, severe damage will result.
- 1 The blades should be sharpened regularly.
- 1 Each section that comes into contact with food, should be cleaned carefully and dried after use.
- 1 Moving parts should be lubricated, but oil must not be allowed to come into contact with any food.
- 1 Extra care must be taken when blades are exposed.

Potato Peelers : This is an important labor-saving, electrically operated piece of equipment which peels the potatoes with a greater speed.

- 1 Wash peeler from inside, tightly close the door.
- 1 Put potatoes from top. Start main switch as well as water supply.
- 1 After peeling, open door of the peeler let all the peeled potatoes come out of the peeler. Switch off the main.

Cleaning of Potato Peelers :

- 1 Detach upper deck of the peeler, wash it thoroughly with scrubber, rinse and wipe it dry.
- 1 Remove all the potato peels from it. Scrb thoroughly with scrubber, wash and dry completely.
- 1 Fix upper deck and check for its function.

16.8 QUESTIONS

1. GIVE INFORMATION ABOUT LARGE EQUIPMENT AND EXPLAIN THEM CLEARLY?

16.9 REFERENCES

CATERING MANAGEMENT

Lesson – 17**KITCHEN ORIGINATION****17.0 Objective :**

- To learn the duties and manage the staff
- To discuss various positions in the kitchen
- To discuss the organization of Food Production.

17.1 Contents**17.2 Introduction****17.3 Kitchen Staff****17.4 Duties of Kitchen Staff****17.5 Conclusion****17.6 Questions****17.7 References****17.1 Introduction**

The aim of kitchen organization is to assign or allocate jobs so that they can be done efficiently and each employee knows his jobs and responsibilities and the result expected from him or her.

There are various factors that affect the number of staff working in a kitchen. All have to be considered while staffing of the department. They include the menu, type of establishment, size of the operation and the physical facilities.

The Menu : The kind of dishes to be produced determines a lot of things like planning, organizing and operating a food production department. In simple, menu is the basis for the whole operation.

The Type of Establishmet : The number of employees in a kitchen also depends on the type of outlet type are working for. Different establishments include :

- Hotels
- Institutional Kitchens : Schools, Hospitals, Industrial Cafeterias, Airline Catering, Military, Cruise lines etc.
- Catering and banquet services (Outdoor or off-springs catering)
- Fast Food Restaurants.
- And many more....

The size of the Operation : Size implies the capacity of the business i.e., the volume of business expected.

The Physical Facilities : This includes the type of equipment used. A kitchen less mechanized need more staff than a kitchen, which is fully mechanized.

Even though, all the above stated factors are kept in mind, it may not finally decide the number of staff being employed. There are no set rules and regulations regarding how many staff are required by a particular organization. Each establishment will have its own policy, which determines the factor about how many staff are required.

The latest trend is to employ staff depending on the size of the operation. The volume of production is considered as the main factor that is determining the number of staff to be employed. Also the factor pertaining to the contribution of a particular section to the menu must be considered.

Even when there are two kitchens of a similar nature, the internal organization may vary as each Chef de Cuisine will have his own way of running his kitchen. It has been found most satisfactory in organizing the work of a kitchen is to divide it into 'Parties' or 'Corners'.

The parties system was perfected by Escoffier and it was the result of studying about the food production and the recipes allocating tasks to different specialties so as to help produce the more complex dishes regularly, effectively and swiftly. The kitchen was divided into sections, each one of which was responsible for a particular contribution to the entire food production system.

In the kind of kitchen Escoffier organized, the parties system reached the height of complexity because the end - products had to be of the highest finish and yet be combined to order in rapid sequence for a substantial number of customers. A set pattern was made.

Basically the principles of kitchen organization represent a standard practice though there are no set rules for deciding how many sections and how many staff a particular kitchen requires. Each catering establishment has different factors to be taken into consideration such as extent of menu, number of persons to be served and management policy.

The number of staff in a section is determined by the amount of work to be done and important of the contribution of the section to the menus and the skill of work. The base of different kitchen organizations is taken from the Traditional Kitchen Organization that was pioneered by Auguste Escoffier, the instigator of the partie or corner system. He had many sections such as grill, roast, vegetable, fish, sauce, soup, larder, patisserie etc., As everything was done manually it was necessary but now the sections have become fewer, because of labor saving machines, convenient foods and combined catering equipment (microwave cum convection ovens, etc.) and the changing of public taste, which seeks simpler menus and meals.

17.3 KITCHEN STAFF

The team of cooks and their assistants under the partie system is commonly called the KITCHEN BRIGADE.

Specialists head the parties and with their assistants help produce complex dishes with great speed and efficiency. All the heads of the parties come under the control of the Chef de Cuisine (Head) aided by one or more sous chefs. In small establishments, head of the larder or sauce section acts as Sous Chef.

Kitchen Operation :

Larder

Functions of Larder Department

The larder is a room set aside for the storage of perishable foods, both raw and cooked, where food as meat, fish, poultry and game are prepared and made ready for cooking. In this department too, all cold items found on the menu, such as hors d'oeuvres, cold dish or meat dishes, cold salads, etc., are prepared and dressed. For these functions to be effective, it is essential that

1. The room be separate from the kitchen situated in a cool place.

At the same time, it must be close to the kitchen to avoid undue running about between the two departments which are closely interrelated.

2. It should be suitably lighted, well-ventilated and sufficiently open to allow the staff to perform their duties in a clean and efficient manner.

3. It must be equipped with the necessary fittings, plant, machinery and tools in accordance with the volume, and or quality of the trade of the catering establishment in which it is situated.

Larder Control

If this department is to be run efficiently and economically, it is essential that chef larder manager should exercise the strictest possible control over the foodstuff received and stored in the department. This involves:

1. Checking the quality and quantity of all goods delivered to the larder
2. Ensuring that all food stuffs are stored at the required temperature and they can be easily checked.
3. That the food is protected from contamination by vitamin.
4. That portion control is rigidly carried out., eg., given weight of meat, or fish or vegetables, etc., should always produce the required number of portions of steaks, fish fillets, salads or hors d'oeuvres.
5. That stocks of food are regularly turned over
6. That food is not overstocked
7. That daily stock sheet kept by each should be submitted to the chief larder manager at the end of the day to enable him to write out his orders for the following day.
8. Obviously every effort must be made to maintain highest possible standard of hygiene, to prevent any deterioration in the food under his control. Every precaution should be taken to discourage pilferage.

The larder Chef, at a set time each day, notifies the Chef, of stocks, of cooked or raw materials remaining.

17.4 Duties of Kitchen staff

Chef de Cuisine

The chef carries the full responsibility for his kitchen. He must be both cook and administrator i.e., as well as being able to cook, an authority on culinary matters, he needs to be capable of

ensuring quick service and maintaining discipline. He must have a strict sense of economy and efficiency. He should be fully acquainted with the prices, market trends, commodities in season and customer requirements. His principal function is to forecast plan, organize and supervise the work of the kitchen. He has to purchase, control cost, train and direct staff.

Sous Chef

The assistant head chef understudies the Head Chef in all his duties. It is the Sous Chef calls up the order from the kitchen and supervises the service. He is mainly responsible for the efficient day to day functioning of the kitchen.

The Sous Chef supervises the practical kitchen activities. When the Chef is busy he can make ad hoc staff changes during the working day to relieve pressure.

Chef de Partie

For the different sections in the kitchen, there is a "Chef de Partie" i.e., roast cook, larder cook, etc. Each Chef de Partie is assisted according to the production load, by one or more commis cooks; first second, third commis and also trainees.

Chef Saucier (Sauce Cook)

The sauce cook is usually the "Star" party because his job is most complex. The Chef Saucier will be Sous Chef in the making and will eventually rise to Chef de Cuisine. It is here that all the sauces, meat, poultry, entrees are prepared together with the necessary garnishes.

He prepares his own mise-en-place, for many items he will receive like steaks prepared from larder, etc., the sauces prepared must be distinctive but not overpowering.

Chef Rottiseur (Roast Cook)

He is responsible for the production of all roasts and grills of meat, poultry and game, grilled and deep fried fish, deep fried vegetables, potatoes and savouries. He prepares sauces, accompaniments and garnishes for roasts and grills. In large establishments, grilled items are the responsibility of the grillardin or grill cook. It is usual for the grill cook to work under the supervision of the roast cook.

Chef Poissonnier (Fish Cook)

The fish cook prepares all the fish entrees and the roast cook deals with all roasts and deep fried foods. The fish prepared comes from the larder and the Chef does the cooking, garnishing, saucing and the dishing of fish.

The repertoire of fish dishes and their accompanying sauces is very challenging and extensive training are required from this chef.

17.5 Conclusion

Kitchen organization is essential for smooth and successful running of the establishment. To organize the staff, the basic tool of management is organization chart, which shows the structure of an organization in terms of how the various outlets and job positions in a kitchen are linked together.

There are countless duties that must be accomplished in any job, and it is necessary for culinarian to perform the duties without second thought, when he / she is in that particular position.

17.6 Self Assessment Questions

1. Draw the hierarchy of kitchen brigade for a large organization hotel ?
2. Describe the duties and responsibilities of Executive chef and Chef de partie ?
3. Describe the job responsibilities of chef saucier, chef grade manger, chef tourante and chef petit dejeuner ?

17.7 References

1. Theory of Cookery by Krishna Arora.
2. The Art and Science of Culinary Preparation by Jerald W Chesse.

Lesson – 18**KITCHEN FIRESAFETY****18.0 Objective :**

TO LEARN THE SAFTEY MANAGEMENT AND FIRE HAZARDAS

18.1 Introduction**18.2 Fire Hazzard Classification****18.3 Fire Safety****18.4 Fire Extinguishers****18.5 Procerdure in the Event of Fire****18.6 Escape Plan****18.7 Questions****18.8 Reference.****18.1 Introduction**

Kitchen work is usually considered a relatively safe occupation, at least in comparison with many industrial jobs. Neverthelss, the kitchen has many hazards. Minor injuries from cuts and burns are very common, and more serious injuries are all too possible. The quantity of very hot equipment and powerful machinery, combined with the busy, sometimes frantic pace, make it important for everyone to work carefully and with constant attention to rules of safety.

Staff (employees, cooks and cleaners) working in the food production area should be made aware of wat is what and trained properly to meet any emergencies immediately so that they can react properly in case of any acidents rather than waiting for somebody to come. Staff must be made aware of the importance of working in a safe environment.

Maintenance a safe and secure working environment. The 1974 Health and Safety at work Act was passed to protect employes and employers to increase their awareness of the need for safety at work. The employer's responsibilities are to :

- a) Provide and maintain premises and equipment that are safe and without risk to health.
- b) Provide supervision, information and trainings.
- c) Issue written statements on general, policy and procedures regarding health and safety.
- d) Consult with empolee's safety representative and to establish a safety committee.

Employees are responsible to take reasonable care to avoid injury to themselves or others, to cooperate with employers so as to comply with law and not to misuse anything provided for health and safety.

18.2 Fire hazard classification

Hotels basic fire protection system is fire sprinklers. You must protect every area of hotel with sprinklers. Don't leave any area uncovered. (Yes Murphy is right) .Whenever you left an area uncovered ,fire will start there.

As an example of this is MGM Hollywood Hotel fire. Hotel were protected with sprinkler. But they did not covered casino and fire started from there. Fire then went to hotel floors from shafts and stairways. .Hotel completely destroyed and 84 life & \$300 million material burned.

Hotel Fire Hazard Classification

Guest Rooms	Light
Corridors	Light
Meeting Rooms	Light
Toilet Room	Light
Restaurant Seating	Light
Kitchen	Ordinary Group 1
Parking Garage	Ordinary Group 1
Mechanical Rooms	Ordinary Group 1
Electrical Rooms	Ordinary Group 1
Storage Rooms	Ordinary Group 2
Ballroom	Ordinary Group 2

In the example above, the ballroom in the hotel is classified as an ordinary group 2 hazard, rather than a light hazard, because occasionally the ballroom will be used as an exhibition space. If the sprinkler system protecting the ballroom were designed for a light hazard occupancy, then the hotel would not legally be permitted to use the ballroom as an exhibition space. While grasping the concept of sprinkler system hazard classification is difficult because of the imprecise manner in which the various hazard classifications are defined, once you become comfortable with the concept, determining hazard classification is normally an easy task

GAS-FIRED SPACE HEATERS

Follow the manufacturer's instructions regarding where and how to use gas space heaters. Unvented heaters should not be used in small enclosed areas, especially kitchens because of the potential for carbon monoxide poisoning.

- 1 Do not use a propane heater (LP) which has a gas cylinder stored in the body of the heater. Its use is prohibited in most states and localities .
- 1 Follow the manufacturer's instructions for lighting the pilot. Gas vapors may accumulate and ignite explosively, burning your hand or face.
- 1 Light matches, if needed for lighting the pilot, before turning on the gas to prevent gas buildup.

Do not operate a vented style heater unvented. It could allow combustion products, including carbon monoxide, to reach dangerous levels which will result in illness and death.

Hazard classification hierarchy

The requirements contained in NFPA 13 are keyed to the hazard classification. Section 2-1 in the 1999 edition of NFPA 13 indicates there are three basic hazard classifications used in the design of sprinkler systems. These three hazard classifications are as follows:

- 1 Light Hazard
- 1 Ordinary Hazard
- 1 Extra Hazard

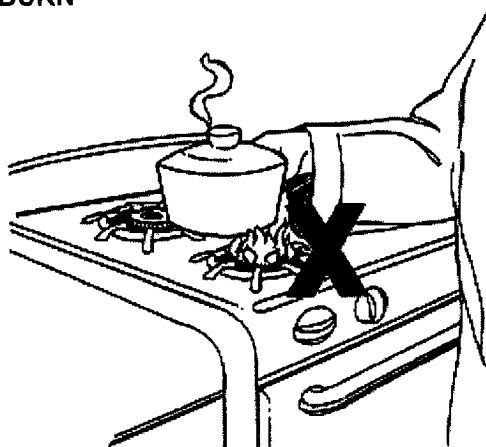
This same section in NFPA 13 also indicates that the ordinary hazard classification is divided into two sub-classifications an ordinary group 1 hazard and an ordinary group 2 hazard. Similarly, the extra hazard classification is also divided into two sub-classifications — an extra group 1 hazard and an extra group 2 hazard.

The definitions of each of the hazard classifications are also included in section 2-1 in NFPA13, which defines hazard classification based upon a number of occupancy characteristics.

These characteristics are as follows:

- 1 The combustibility of contents.
- 1 The quantity of combustibles.
- 1 Rate of heat release.
- 1 Storage height.
- 1 Quantity of flammable and/or combustible liquids

MATERIALS THAT BURN



Your kitchen is filled with materials and products that will burn if ignited. Upholstered , clothing, drapery fabrics, and liquids such as gasoline and volatile solvents are involved in many injury-causing fires each year. Most of these fires could be prevented.

WEARING APPAREL

Most fibers used in clothing can burn, some more quickly than others. A significant number of clothing fires occur from improper clothing. In 1989 about 200 clothing fire deaths were reported; about three fourths occurred. The severity of apparel burns is high, so hotel industry made clear to wear a proper uniforms in kitchen.

Small open flames, including matches, cigarette lighters, and candles are the major sources of clothing ignition. These are followed by ranges, open fires and space heaters. The most commonly worn garments that are associated with clothing ignition injuries are pajamas, nightgowns, robes, shirts/blouses, pants/slacks and dresses

FLAMMABLE LIQUIDS

One of the major causes of kitchen fires is flammable liquids. These include gasoline, acetone benzene, lacquer thinner, alcohol, turpentine, contact cements, paint thinner, kerosene, and charcoal lighter fluid. The most dangerous of all is gasoline

EARLY WARNING AND ESCAPE

Even when you have complied with every item in this kitchen Fire Safety Checklist, you still need to have a plan for early warning and escape in case a fire does occur.

Many fire deaths and fire injuries are actually caused by smoke and gases. Victims inhale smoke and poisonous gases that rise ahead of the flames. Survival depends on being warned as early as possible and having an escape plan.

- 1 Purchase a smoke detector if you do not have one. Smoke detectors are inexpensive and are required by law in many localities. Check local codes and regulations before you buy your smoke detector because some codes require specific types of detectors. They provide an early warning which is critical because the longer the delay, the deadlier the consequences.

- 1 Read the instructions that come with the detector for advice on the best place to install it. As a minimum detectors should be located near bedrooms and one on every floor.

- 1 Follow the manufacturer's instructions for proper maintenance. Smoke detectors can save lives, but only if properly installed and maintained.

- 1 Never disconnect a detector. Consider relocating the detector rather than disconnecting it if it is subject to nuisance alarms, e.g. from cooking.

- 1 Replace the battery annually, or when a "chirping" sound is heard.

- 1 Follow the manufacturer's instructions about cleaning your detector. Excessive dust, grease or other material in the detector may cause it to operate abnormally. Vacuum the grill work of your detector.

18.3 Fire Safety

Fires in hotel and catering establishments are common and all too often result in injury to the employe and in serious cases either injure or loss of life to employees and customers.

A basic knowledge regarding fire should assist in preventing fires and handling them if they do occur. Three components are necessary for a fire to start, if one of the three is not present, or is removed, then the fire does not happen or it is extinguished. The three parts are :

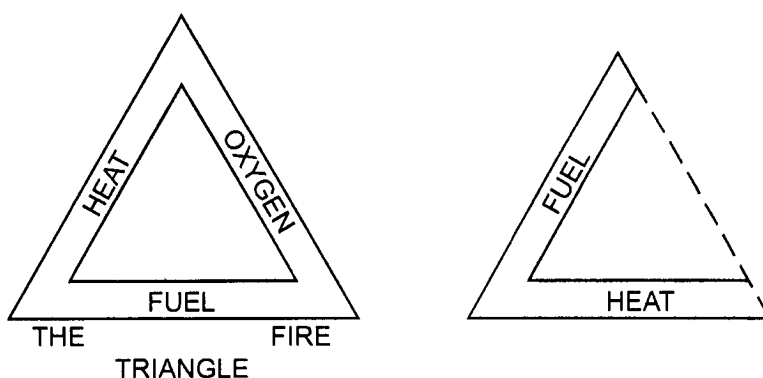
- 1 Fuel - something to burn
- 1 Air - oxygen to sustain combustion (to keep the fire going)
- 1 Heat - gas, electricity, etc.

Types of Fires : Fires are graded into different categories.

- 1 Class A Fires : These fires are normally such as of wood, paper, cotton rags
- 1 Class B Fires : These are of oil, kerosene, paints etc.
- 1 Class C Fires : These are caused by electricity.

Methods of Extinguishing a Fire : To extinguish a fire, the three principal methods are :

- 1 Starving - removing the fuel
- 1 Smothering - removing the air (oxygen)
- 1 Cooling - removing the heat



The fuel is that which burns, heat is that which sets the fuel alight and oxygen is needed for fire to burn. Eliminate one of these will put the fire off. Oxygen is present in the air, so if air is excluded from the fuel and the heat then the fire goes out. For example, should the cloths of someone working in the kitchen catch the fire then the action to be taken is to quickly wrap a fire blanket round the person and roll them on the floor. In doing so, the flames have been cut off from the source of air. (The oxygen has been taken away from the triangle). In the event of fire, windows and doors are to be closed so as to restrict the amount of air getting to the fire. Foam extinguishers work on the principle that the foam forms a 'blanket' thus excluding air from coming into contact with the fuel.

If fat or oil in a pan ignites, then the pan should be quickly covered with a lid or other item or fire blanket so as to exclude air. It is also essential to turn off the source of heat, gas or electricity etc. so that the heat is taken away from the triangle.

Water extinguishers by dousing the flames thus taking the heat out of the triangle provided the fuel is material such as wood, paper etc. If fat or oil is alight, water must not be used as it

causes the ignited fat to spread thus increasing the heat. Water extinguishers must not be used on live electrical equipment because water is a conductor of heat.

In the event of small fire in a store, it may be possible to remove items in the store to prevent fire from spreading. Fire doors are installed for the purpose of restricting an area so that the fuel is limited.

18.4 Fire Extinguishers

All fire extinguishers should have been manufactured in accordance with ISI specifications, they should be red with an additional color code to indicate the type and with operating instructions on them.

Foam (Cream color) : Foam puts out fires by forming a blanket to foam over the top of fire. It is particularly good for putting out fat fires because the foam stays in position and so stops the fire-reigniting. Foam can also be used on fires of natural materials. This extinguisher should not be used on class C fires.

Carbondioxide (Black color) : Carbondioxide gas is used on fires of inflammable liquids and has the advantage that it does not conduct electricity.

Dry powder (Blue color) : Dry powder is commonly used for fat fires. It does not conduct electricity and some all-purpose powders can be used on fires in natural materials. Powders based on bicarbonate of soda are used in most extinguishers.

Fire-hoses : Fire-hoses are used for similar fires to those classified under water fire extinguishers. It is necessary to be familiar with the instructions displayed by the fire-hose before using it.

Water Sprinkler Systems : These consist of sprinklers from the main water supply fitted in the ceiling. The system is designed to automatically spray water over the whole area when the temperature rises above a pre-set level, e.g. 167°F.

Each extinguisher should be fixed on a suitable bracket, be properly maintained and should be always available for use. It should be immediately refilled after use. It is important that the staff must be trained how to use them.

Research and development by the manufacturers of fire-fighting equipment inevitably leads to changes and increased efficiency in the various appliances as it is important that the best fire extinguishers are always available. Always consult the fire prevention branch of the fire brigade if necessary

18.5 Procedure in the Event of Fire

- 1 Do not panic.
- 1 Warn other people in the vicinity.
- 1 Do not jeopardize your own safety or that of others.
- 1 Follow the fire instructions of the establishment.
- 1 If it is a small fire, use appropriate fire extinguisher.
- 1 Do close doors and windows, turn off gas, electricity and fans.
- 1 Do not wait for the fire to get out of control, before calling the fire brigade.

It is important that in all catering establishments, passageways are kept clear and that doors open outwards. Fire-escape doors and windows should be clearly marked and fire-fighting equipment must be readily available and in working order. Periodic fire drills should occur and be taken seriously since lives may be endangered if there is a fire. Fire-alarm bells must be tested at least four times a year and the staff should be instructed in the use of fire-fighting equipment.

18.6 Escape Plan

Establish advanced staff planning for escape. It is an important staff with smoke detectors and it will prepare you for a fire emergency.

Include all staff members as a part of the discussion and rehearsal. It is especially important to make sure they understand that they must escape; they can't hide from fire under a kitchen or in a closet.

Your life and that of your staff members can be saved by foresight, planning, discussing and rehearsal.

18.7 QUESTIONS

1. List out the kitchen fire safety precautions?
2. Write about causes of industrial fire and describe pre-safety equipments?

18.8 REFERENCES

FIRE SAFETY ENGINEERING --- PURKISS .J