

Food and Beverage Service

Level – I

Based on November, 2022 Curriculum Version

2



Module Title: Food Hygiene Practices

Module Code: CTH FBS1 M02 1122

Nominal duration: 72hours

November, 2022

Addis Ababa, Ethiopia

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ACKNOWLEDGMENT

Ministry of Labor and Skills wish to extend thanks and appreciation to the many representatives of TVET instructors who donated their time and expertise to the development of this Teaching, Training and Learning Materials (TTLM).

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Introduction to the Module

In food and beverage services field: food hygiene practice helps to follow ways of hygiene procedures and hygiene hazard, to apply personal hygiene, to implement procedures for food safety, to prevent food contamination, to prevent food contamination according to the service standard.

This module is designed to meet the industry requirement under the food and beverage service occupational standard, particularly for the unit of competency: **food hygiene practice**

This module covers the units ::

- Hygiene procedures and hazards
- Personal hygiene

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- Food safety
- Handle food safely
- Prevent food contamination
- Maintain a cleaning environment

Learning Objective of the Module

- Identify hygiene procedures and hazards
- Apply personal hygiene
- Implement procedures for food safety
- Perform handle food safely
- Prevent food contamination
- Perform ways of cleaning environment

Module Instruction

For effective use this modules trainees are expected to follow the following module instruction:

1. Read the information written in each unit
2. Accomplish the Self-checks at the end of each unit
3. Perform Operation Sheets which were provided at the end of unit two
4. Do the “LAP test” at the end of unit two
5. Read the identified reference book

Unit one: Hygiene Procedures and Hazards

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Hygiene procedures and policies
- Poor organization practices
- Hygiene hazards
- Take action to minimize hazards
- Report hygiene hazards

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This guide will also assist you to attain the learning outcomes stated in the cover page.

Specifically, upon completion of this learning guide, you will be able to:

- Access hygiene procedures and policies
- Identify ways of reporting poor organization practices
- Identify hygiene hazards
- Take corrective action to minimize hazards
- Report hygiene hazards to appropriate person

1.1. Hygiene Procedures and Policies

1.1.1 Definition of hygiene

The word “hygiene” is derived from the Greek word “hygieinos” which means healthful, or relating to health. Generally, we use the term hygiene to describe the ‘practice of keeping oneself and their surroundings clean, especially to prevent illness or the spread of disease. Good hygiene is a barrier to many contagious diseases, including fecal-oral diseases.

It plays an important role in promoting better health and well-being. In our last article, we discussed the difference between hygiene and sanitation. Keep reading to know the different types of hygiene.

It is also defined as a procedure or a system of procedures or activities used to reduce microbial contamination on environmental sites and surfaces in order to prevent the transmission of infectious disease.

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Workplace hygiene procedures are practices used to control the safety of food making it fit for human consumption/safe to eat. These procedures cover processes from the purchasing of food for the premises through to the disposal of waste produced as a result of food processing activities.

Hygiene procedures include:

- Personal hygiene
 - Safe and hygienic handling of food and beverages
 - Regular hand washing
 - correct food storage
 - suitable dress and personal protective equipment and clothing
 - avoidance of cross-contamination
 - hygienic cleaning practices to avoid cross-contamination
-
- safe handling and disposal of linen and laundry
 - appropriate handling and disposal of garbage
 - cleaning and sanitizing
 - procedures documented in the organization food safety program
 - procedures covered by staff training programs
 - procedures required by the national food safety code

1.1.2 Hygiene Policies

Health policies set the standards. In some establishments, more time and money is spent on this area than in other establishments. These establishments give hygiene a higher priority, realizing its importance. In others places, staff are expected just to do the best they can with what they are given.

Sometimes you may be unsure about exactly what the legislation requires you to do, or you may have a hygiene problem that you cannot remedy despite your best efforts. In either case, health officials are there to advise, assist and educate operators: they are not simply 'health police' who are intent on issuing as many penalties as possible. They are an excellent source of information when it is needed you should therefore view these officials as friends rather than as enemies.

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workplace hygiene policies can be expected to exist to address other food safety-related issues such as:

- Cleaning and sanitising of food utensils, equipment, areas and food contact and preparation surfaces
- Specific food handling techniques required by the workplace to optimise food safety – as applicable to the equipment they use, the food they prepare and other factors applying in the premises
- Personal hygiene and requirements applying to ensure staff do not contaminate food by their actions
- Equipment maintenance and the need to keep food equipment, utensils (including food thermometers) and areas properly maintained to ensure they operate as required (for example, it is important for refrigerators, freezers and hot and cold holding units to reach the temperatures they are supposed to reach)

All food handlers must ensure they:

- Wash themselves before coming to/starting work;
- Wear the protective clothing that is provided (including headwear) at all times whilst handling food;
- Do not have hair that is longer than shoulder-length, without being contained within a hat or hairnet;;
- Do not wear protective clothing outside;
- Store outdoor clothing neatly in the facilities provided and not in a food room;
- Do not wear jewellery, except for permitted sleeper earrings and/or a plain wedding ring, do not wear watches (if wristbands must be worn, they should be covered to reduce the risk of contamination);
- Cover/remove any stud piercings;
- Keep fingernails short and clean with no nail varnish (clear or coloured);

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- Do not wear perfume or aftershave;
- Do not cough or sneeze over the food;
- Cover all wounds with blue, detectable waterproof dressings;
- Do not smoke (smoking is only permitted in the specified area) in any food room;
- Do not eat or drink in any food room;
- Report all symptoms of diarrhoea and vomiting and contact with persons suffering from food-borne diseases to their line manager;
- Wash their hands before starting work, after using the toilet, after handling raw foods

1.2. Poor organization practices

Poor organization practice can cause food contamination, food poisoning and spread of infection.

Workers can be exposed to germs, infections and infestation in many ways, depending on the nature of the work. A common way for infections to be transmitted through poor organization hygiene practice.

Poor practice occurs when one or more procedure is not followed. Here are some examples of poor organization practices:

- Poor temperature control (hot and cold food, fridges, and freezers)
- Not following cleaning procedures
- Poor personal hygiene

Poor organization practices in relation to hygiene may include:

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- poor food handling practices that may result in the contamination of food
- poor cleaning practices that may result in cross-contamination of food and other items
- practices inconsistent with the organization’s food safety program
- outdated practices not in keeping with current organization activities
- Poor maintenance Lack
- monitoring check list
- Lack of sanitizing and disinfecting of tools and equipment

1.3. Hygiene hazards

Hazard is a potential source of harm substances, events or circumstance can cause to health. Some of the hazards commonly found in hospitality workplaces such as kitchens, food and beverage service areas and customer service areas can pose a significant threat to safety. They require careful management, safety awareness, strict work procedures and safety equipment to reduce the risk of harm. Before starting work, make sure you know the potential hazards and are familiar with ways of reducing any risk of harm to yourself or other.

Hygiene hazard is anything that has a potential to cause harm.

Hazards can be classed as:

- Biological such as microorganisms occurs by natures.
- Chemical such as chemicals, pesticides, cleaning agents and allergens
- Physical foreign objects that are not supposed to be in the food, such as timber, glass, packaging material and naturally occurring objects – bones, dust and grit.

Hygiene hazards that may affect the health and safety of our customers and colleagues be on:

- contaminated food
- vermin
- airborne dust
- items such as linen, tea towels and towels that may be contaminated with human waste, such as blood and body secretions
- dirty equipment and utensils
- contaminated garbage
- use of practices not in keeping with current organization activities

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- colleagues without appropriate training or understanding of good hygiene practices, policies and procedures
- equipment not working correctly, such as fridge and temperature probes
- Take action to remove or minimize the hazards within scope of individual responsibility and according to organization and legal requirements

1.4. Take action to minimize hazard

Minimizing health and safety hazards is key to operational excellence in the work place regardless of its size. Where possible, you should always try to remove or eliminate hazards from the workplace, for example by using a different process, or changing the way a job is done.

If it is not possible to eliminate the hazard, below are 6 methods to determine the most effective measures to take action in workplace hazards and to minimize risk. Those are:

1. Design or re-organize to eliminate hazards

It is often cheaper and more practical to eliminate hazards at the design or planning stage of a product, process or place used for work. In these early phases, there is greater scope to design out hazards or incorporate risk control measures that are compatible with the original design and functional requirements. For example, remove trip hazards on the floor or dispose of unwanted chemicals.

2. Use Personal Protective Equipment (PPE)

Provide suitable and properly maintained PPE and ensure employees are trained in its proper use. Examples include gloves, earplugs, face masks, hard hats, gloves, aprons and protective eyewear. PPE limits exposure to harmful effects of a hazard but only if workers wear and use the PPE correctly

3. Substitute the hazard with something safer

If it is not reasonably practical to eliminate the hazards and associated risks, you should minimize the risk. For example, today the dangers associated with asbestos are well known and there are numerous alternatives to asbestos products currently on the market including cellulose fiber, thermoset plastic flour or polyurethane foams. Replacing solvent- based paints with water-based ones is also a better alternative.

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4. Isolate the hazard from people

This involves physically separating the source of harm from people by distance or using barriers. For example, introducing a strict work area, using guard rails around exposed edges and holes in the floors, using remote control systems to operate machinery, enclosing a noisy process from a person and storing chemicals in a fume cabinet

5. Use engineering controls

An engineering control is a control measure that is physical in nature, including a mechanical device or process. For example this can be done through the use of machine guards, effective ventilation systems and setting work rates on a roster to reduce fatigue.

6. Use administrative controls

Administrative controls are work methods or procedures that are designed to minimize exposure to a hazard. Establish appropriate procedures and safe work practices such as; limit exposure time to a hazardous task so that fewer employees are exposed, routine maintenance and housekeeping procedures, training on hazards and correct work methods and use signs to warn people of a hazard.

1.5. Report hygiene hazards

Food handlers must report health hazards to the manager of the establishment before working with food.

If they become ill while working, they must immediately report their condition, and if food or equipment could become contaminated, the food handler must stop working and see a doctor. There are several instances when a food handler must either be restricted from working with or around food or excluded from working within the establishment.

It is important for food handlers to report their health problems to their manager because:

- Their illness could contaminate food;
- Their illness could spread to customers eating the food they prepare;
- Their illness could cause financial loss to the business by hurting its reputation if there was a food poisoning outbreak because of their illness.

Identifying and reporting unsafe food handling practices

You are obliged to be constantly alert to the possibility of unsafe food handling practices occurring in your workplace so you can report them in order that appropriate corrective action can be taken.

The three main ways to identify hazards in the workplace in relation to food safety are:

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- Personal observation of conditions and/or staff practice
- Inspection of raw materials, premises, equipment and final products
- Review of food safety records.

Speed is important in responding to and reporting hazards inconsistencies and „out of control“ situations so the recommended methods of reporting are:

- Face-to-face
- Verbally, over the phone.

Reports should be made to:

- Management
- Relevant staff – who are involved in the problem, or will be involved in fixing the problem
- Customers – only where a recall of food has been decided as being necessary
- Local health authorities – only where a food recall has been implemented.

When these reports are made, consideration should be given to covering the following:

- Identifying the food involved
- Naming the people involved – staff and customers (where appropriate)
- Reporting any action already taken to limit the potential negative impacts
- Recommending action for limiting the future potential negative impacts Identifying (if known) what caused the out of control situation
- Describing what you think could/should be done to prevent a recurrence of the problem

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Self-Check -1	Written Test
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Test-I Instruction: say true or false for the following questions. (3points)

1. Poor organization practice can cause food contamination, food poisoning and spread of infection
2. Hygiene hazards that may not affect the health and safety of customers and colleagues.
3. Workplace hygiene procedures are practices used to control the safety of food making it fit for human consumption/safe to eat.

Test-II Multiple choice

Instruction: Select the correct answer for the given choice. (3points)

1. Which of the following are not methods of reporting?
 - A. Face-to-face
 - B. Verbally
 - C. over the phone
 - D. Hotel manager
2. Which of the following is used to identify hazards in the workplace in relation to food safety?
 - A. Personal observation of conditions and/or staff practice
 - B. Inspection of raw materials, premises, equipment and final products
 - C. Review of food safety records.
 - D. All of the above

Test III: Instruction: Give short answer for the following questions listed below. (4point)

1. Explain the meaning of hygiene.
2. Describe the meaning of poor hygiene practice.
3. List down all hygiene hazards that may affect the health and safety of customers
4. Explain how to take action to minimize hazard

Unit Two: Maintain Personal Hygiene

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Personal cleanliness practices
- Personal protective equipment

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Apply personal cleanliness practices
- Apply personal protective equipment

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2.1. Personal cleanliness practices

Personal cleanliness defined as a practice contributing to maintaining health and preventing disease, especially through cleanliness of a personal individual.

Personal hygiene refers to maintaining cleanliness of one's body and clothing to preserve overall health and well-being.

Personal hygiene as a food safety regulation in kitchen does not only govern hand washing but also the covering of hair and cuts on the body, wearing clean clothing to work, and covering the mouth and nose when sneezing or coughing and then washing the hands again.

Wash your hands often when working with food and drinks - this gets rid of germs that can make people sick. Wash your hands for approximately 20 seconds with warm running water and soap, and then dry them with clean paper towels, or an air dryer.

Personal hygiene is important to prevent food poisoning. When handling food, wash your hands thoroughly and often. If you are sick, do not go to work, because you can contaminate food more easily.

Food handlers should be properly trained in safe food handling.

1. Workers should be in complete cooking outfit.
2. All jewelry must be removed.
3. Hands should be washed before starting to work.
4. A comfortable pair of shoes or slippers should be worn.

Do's

- Keep food covered
- Wear gloves while handling and serving the food
- Wear a hair restraint when working with food
- Clean and sanitize equipment on a regular basis
- Hand basins should be located conveniently and used for hand washing only
- Prevent cross-contamination

Do 'not

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- Never cough or sneeze over food
- Toilets should not open directly into any room where food is handled.
- Do not wear jewelers/ nail polish while preparing/serving food
- Cold foods should never be stored on top or near hot food storage
- Waste shall not be permitted to build up in food areas
- Never prepare the food with open cut/ wound

Washing your hands at the right time helps you avoid getting infected. Make sure to wash your hands before and after:

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- Preparing your food
- Eating your food
- Touching any objects in a public area
- Treating the open wounds or cuts
- Helping out sick persons
- Placing or removing contact lenses
- Changing the diapers of the child
- Handling the foods of your pet
- Wash your hands after:
- Toilet using
- Touching the animal such as cats or dogs
- Sneezing and coughing
- Blowing your nose
- Smoking

Germs such as bacteria and viruses are everywhere. Think of your hands and fingernails as easily "contaminated." Just because they look clean does not mean they are clean. Germs are too tiny to see with your eyes. If you do not wash your hands in the right way and keep your fingernails trimmed short, your hands can put germs in food that will be eaten by your customers.

2.2. Personal Protective Equipment (PPE)

Personal Protective Equipments is equipments and clothing items designed to protect the user from potential hazards or injuries whilst doing a task at work. Personal protective equipment, commonly referred to as "PPE", is equipment worn to minimize exposure to hazards that cause serious workplace injuries and illnesses. These injuries and illnesses may result from contact with chemical, radiological, physical, electrical, mechanical, or other workplace hazards. Personal protective equipment may include items such as gloves, safety glasses and shoes, earplugs or muffs, hard hats, respirators, or coveralls, vests and full body suits.

Common examples of PPE in hospitality workplaces include:

PPE: includes

- a. goggles or glasses - eye protection

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- b. aprons - body protection
- c. hairnets - hair protection and containment
- d. safety boots - foot protection
- e. masks - fumes, infection protection
- f. towels- hand protection working in a kitchen

A. Uniforms – Wear a clean uniform every day and only put it on at the workplace



figure 2.1

B. Aprons – Different full aprons should be worn at different prep stations (e.g. seafood and vegetables)



figure 2.2. Apron

C. Gloves – Different disposable gloves to be used when handling raw and cooked food



figure 2.3. glove

D. Shoes – Wear only non-slip, full covered shoe



figure 2.4 safety shoes

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E. Other face and Eye protection

A face shield provides to facial skin, eyes nose and mouth.



F. Mask – surgical masks helps protect your nose mouth from splattered of body fluids, respirators fillter the air before you inhale it.



Figure 2.5 mask

Self- check 2	Written test
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Test I. Say True or False

1. Wash your hands for approximately 30 seconds with warm running water and soap.
2. Maintaining personal grooming includes clean nails, clean and covered hair, wearing clean clothing
3. Surgical masks helps to protect your nose & mouth from splattered of body fluids, respirators fillter the air before you inhale it.

Test II match column A with column B

A

B

__1. Glasses - eye protection

A. Aprons

__2. Body protection

B. Safety boots

__3. Hair protection and containment

C. Chef hat

__4. Foot protection

D. Goggles

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Test III Give short answer for the following questions (3pts)

1. Explain the meaning of PPE.
2. Write Common PPE which is used in kitchen
3. Describe the meaning of personnel cleanliness
4. Write down all the right time of washing hands

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OPERATION SHEET 2.1 Perform hand washing

Operation title: Procedures of hand washing

Purpose: To practice and demonstrate the knowledge and skill required in hand washing

Instruction: Use the given tools and equipment for proper hand washing

For this operation you have given 20 second

Tools and requirement:

- | | |
|---------------------|----------|
| 1. Soap | 4. Towel |
| 2. Hot water | 5. Dryer |
| 3. Liquid Hand soap | |

Steps of Hand Washing

Step 1: Wet Hands. Wet your hands and apply enough liquid soap to create a good lather. ...

Step 2: Rub Palms Together. ...

Step 3: Rub the Back of Hands. ...

Step 4: Interlink Your Fingers. ...

Step 5: Cup Your Fingers. ...

Step 6: Clean the Thumbs. ...

Step 7: Rub Palms with Your Fingers.

Step 8 rinse your hands well under clean running water

Step 9 dry your hands using a clean towel or an air dryer

LAP Test	Practical Demonstration
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Name: _____

Date: _____

Time started: _____

Time finished: _____

Instruction I: Given necessary templates, tools and materials you are required to perform the following tasks within 30 minutes

Task 1: Perform Proper Hand Washing

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Unit Three: Food safety

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Use relevant documents
- Food safety policies and procedures
- Food hazards at critical control points
- Food safety monitoring processes and documents
- Report consistent practices
- Take corrective actions

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Use relevant documents
- Follow food safety policies and procedures
- Control food hazards at critical control points
- Complete food safety monitoring processes
- Identify and report consistent practices
- Take corrective actions in incidents

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3.1. Use relevant documents

Food safety is a scientific discipline describing handling, preparation, and storage in ways that prevent food borne illness. Keep raw foods and ready-to-eat foods separate, to avoid cross-contamination it includes:

- Store food in clean, food-grade storage containers.
- Don't store food in opened cans.
- Make sure food storage containers have not been used to store things other than food, and wash and sanitize them before use.

A Food Safety Program is a 'live document' that outlines how a business will proactively identify and control food safety hazards when producing, handling or/and selling food. It's designed and managed by a Food Safety Supervisor on behalf of a food business. A Food Safety Program document should

- Identify all potential food safety hazards that may be reasonably expected to occur in the food business' operations
- Identify solutions for controlling these hazards
- Include daily records that demonstrate regular measurement and observation for each of the controls
- Provide procedures for corrective action when a hazard is found to not be under control
- Provide for the regular review of the program by the food business to ensure its adequacy
- Include a documented mechanism that outlines basic food safety procedures should the Food Safety Supervisor become absent

A food safety program for each business must follow a systematic procedure for identifying, monitoring and recording potential hazards and risk:

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1. Identify the potential food safety hazards
2. Identify the means of control of the hazards
3. Monitor the hazards
4. Provide for corrective action
5. Regularly review the program
6. Keep appropriate records

The importance of food safety:

- It helps to protect consumer from the risk of food borne illnesses.
- It also helps to prevent consumers from risks of health –related conditions such as allergy and even death.
- It also protects food processing establishments from product recalls which results in financial losses due to unsafe products.
- Other issues due to unsafe products which can impact a business include: rejected products, possible lawsuits and business closure by the public health authorities due to reports of unsafe product sold to the general public

3.2. Food safety policies and procedures

The main objective of food safety is to protect consumers of food products from foodborne diseases or injuries related to food consumption. Foodborne illnesses are a major threat to food businesses and affect everyone all over the world as a result of inadequate food safety

Food Safety Practices and General Requirements sets out specific food handling controls related to the receipt, storage, processing, display, packaging, transportation, disposal and recall of food. Other requirements relate to the skills and knowledge of food handlers and their supervisors

Policies and procedure legal obligation to meet strict regulatory requirements pertaining to food safety and food handling practices

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The following rules are some suggestions for office kitchens. Commercial kitchens may follow other rules.

- Do not leave dirty cups and plates in the sink
- Clean up any mess you make
- Do not leave food unattended
- Place all waste in the containers provided for this purpose
- Regularly empty the refrigerator of food leftovers
- If you make a mess, clean it up
- Label your food
- Leave the kitchen cleaner than you found it

There are the some food safety procedures

- Keep high-risk food at 5 °C or below or above 60 °C to avoid the temperature danger zone and food poisoning.
- Store raw foods below cooked foods.
- Store food in suitable, covered containers.
- Avoid refreezing thawed foods.
- Check and observe the use-by dates on food products.
- Take special care with high-risk foods

3.3. Food hazards at critical control points

3.3.1. Food hazards

A food safety hazard is a biological, chemical or physical agent, or condition of food, with the potential to cause harm or an adverse health effect when the food is eaten.

Food safety hazards can be classed as:

- Biological such as microorganisms occurs by natures.
- Chemical such as chemicals, pesticides, cleaning agents and allergens

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- Physical foreign objects that are not supposed to be in the food, such as timber, glass, packaging material and naturally occurring objects – bones, dust and grit.

Types of food safety hazards

A **hazard** is any object, situation, or behavior that has the potential to cause injury, ill health, or damage to property or the environment. Health and safety hazards exist in every workplace.

All hazards, whether Types of food safety hazards seven core categories:

A. Physical hazards:- which can be found in food include:

- Objects naturally present in the food (animal hair, bone chips, leaves, etc)
- Objects occurring in agriculture (dirt, manure, leaves, etc)
- Objects added during processing (glass, plastic, hair, metal, etc).

Reducing physical hazards is relatively simple in most hospitality businesses as they are physically visible in the food. They are normally controlled by procedures such as a visual inspection of food and good kitchen procedures such as a no wood or no glass policy, and keeping the food covered.

B. Chemical hazards:- Hazards that can be found in food include:

- Naturally occurring poisonous chemicals (poison plants such as rhubarb leaves and mushrooms, poisonous animals such as puffer fish, algal blooms, mould toxins, etc)
- Chemicals added via water
- Agricultural chemicals from soils, plants and animals (pesticides, antibiotics, dips, heavy metals, etc)
- Chemicals added during food processing (additives, cleaners, etc).

Chemical hazards in foods can be controlled by:

- purchasing from an approved supplier
- covering food and protecting it from contamination

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- having an allergen awareness, and strategies to prevent cross contamination from allergens
- separate chemical storage area, away from food
- use of food safe chemicals within the food preparation areas
- correct cleaning procedures

C. Biological hazards:- Hazards which live within food can occur from multiple sources. These microorganisms (commonly called “germs”) are so small they can only be seen under a microscope. Not all microorganisms are harmful to humans. Pathogens are the microorganisms which cause harm to humans, when they reach a high level in food. Some examples are:

- Bacteria e.g. salmonella, staphylococcus aureus, bacillus cereus
- Viruses e.g. hepatitis A, influenza
- Yeasts
- Moulds
- Protozoa e.g. Giardia

Microorganisms are tiny single cell living organisms. All humans have microorganisms on their body. Sick people have more microorganisms or “germs”. Microorganisms are abundant on every surface and as they are not visible except under a microscope, it is easy to forget they are there. Over 95% of all microorganisms are harmless to humans and many are essential to our well-being..

There are several types of microorganisms:

- yeasts
- moulds
- bacteria
- viruses
- protozoa

“Danger Zone” of between 5°C - 60°C is central to keeping food safe, and minimizing contamination

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Food spoilage is the process in which food deteriorates to the point in which it is not edible to humans or its quality of edibility becomes reduced.

- Various external forces are responsible for the spoilage of food.
- Food that is capable of spoiling is referred to as perishable

Food borne illness

Food borne illness (also food borne disease and colloquially referred to as food poisoning) is any illness resulting from the consumption of contaminated, pathogenic bacteria, viruses, or parasites that contaminate food, as well as chemical or natural toxins such as poisonous mushrooms

Most food poisoning illness is a result of these microorganisms growing in food. When food is in moist, warm conditions, they multiply to an “infective dose” which makes a person ill.

Food handlers should know about food poisoning bacteria and the conditions they require for growth, to ensure food borne illness is avoided. It is important to be aware of the different types of food safety hazards which may pose a significant risk to the safety of your customers. Situations when food safety hazards are likely to pose a significant risk are:

- Handling “potentially hazardous foods” which are susceptible to microorganisms’ contamination and growth. These are low acid, high protein foods such as meat, eggs, poultry, and seafood and dairy items.
- handling raw food and fresh foods
- handling food with your hands, rather than using equipment
- cooking food - food needs to be cooked thoroughly to kill microorganisms
- chilling food - food needs to be chilled quickly to reduce the growth of microorganisms
- defrosting foods
- reheating foods
- displaying food on buffets or self service

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- preparing food in temperatures in which microorganisms grow rapidly (5°C- 60°C)

D. Mechanical/ electrical: mechanical and electrical hazards machinery, its parts, tools, objects and materials processed or used in the work process are often a source of mechanical hazards leading to injuries. Machinery, along with power supply systems, can also create electrical hazards, leading to severe or fatal accidents. Its includes: electrical appliances, slicers, grinders

E. Ergonomic – involving, for example, inappropriate heights of work stations, especially computer workstations. Usually stems from ill-thought-out design or spatial awareness. This can include workstations that aren't fit for healthy usage. However, this category can also include hazards associated with lack of training (e.g. manual handling) or unsafe working conditions leading to injury (e.g. repetitive movement).

F. Radiation – This may be more prevalent in a clinical setting and covers x-rays, gamma rays, and microwaves.

G. Psychological – This applies heavily across all industries in many forms. Examples of psychological risk include stress, working shifts, problems dealing with the public, internal harassment and lack of empowerment. stress, fatigue, personal security, cash handling and financial responsibility, aggressive and angry customers or colleagues

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3.3.2. Critical control points

A critical control point (CCP) defined as a step which control can be applied and is essential to prevent or eliminate a food safety hazard or reduce it to an acceptable level. Examples of CCPs may include: cooking. Chilling

Each business must put in place procedures at the “critical control points” or the stages in processing or preparation of food, where there is a high risk of contamination or food spoilage.

Common critical control points for hospitality businesses are:

- Purchasing and delivery
- Stock control and food storage
- Preparation
- Cooking
- Cooling
- Reheating
- Holding or display
- Service

Hazard Analysis Critical Control Point (HACCP)

HACCP is a process that ensures the risk of contamination is prevented at all critical points in the production of food. HACCP cannot replace hygienic and safe food handling procedures – instead, it is a process by which a team can monitor potential problems and take corrective action before food can pose a health risk to the consumer.

To complete the HACCP process, a HACCP Food Safety Audit is necessary. This must be conducted by a team of individuals that has specific knowledge and expertise appropriate to the product and process. The HACCP team may need assistance from outside experts with knowledge of potential biological, chemical and/ or physical hazards associated with the product and processes. A well-constructed and laid out premises combined with a well-developed HACCP food safety program is the most efficient way to ensure the safety of food products that are free from contamination

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HACCP Principles

HACCP is a systematic approach to the identification, evaluation, and control of food safety hazards based on the following seven principles:

Principle 1: Conduct a hazard analysis.

Principle 2: Determine the critical control points (CCPs).

Principle 3: Establish critical limits.

Principle 4: Establish monitoring procedures.

Principle 5: Establish corrective actions.

Principle 6: Establish verification procedures.

Principle 7: Establish record-keeping and documentation procedures

3.4. Food safety monitoring processes

Each hospitality business must monitor the food safety hazards and controls in place at the critical control points. Different ways of monitoring or checking food safety hazards may be:

- check and record food temperature using a thermometer probe
- check and record the food deliveries at receipt
- check and record the use by date or preparation date
- check and record the temperature of cold storage equipment such as fridges, cool rooms, display cabinets and freezers
- check and record the temperature of hot food storage equipment such as bin maries, warming cabinets
- check and record the cooking temperature
- check and record the time and temperature when chilling food
- check for bacterial growth using bacterial swabs and tests
- chemical tests

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3.5. Report consistent practices

A report is a document that presents relevant business information in an organized and understandable format.

A report is a detailed food safety of something based on observation and research. Report is also used to mean to relay information or to appear at a destination as ordered. The word report has many other senses as a noun and a verb.

Food contamination refers to the presence of harmful chemicals and microorganisms in food, which can cause consumer illness. This article addresses the chemical contamination of foods, as opposed to microbiological contamination, which can be found under forborne illness.

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There is different method to prevent food contamination:

1. Use different utensils, plates and chopping boards for raw and cooked food.
2. Wash utensils, plates and chopping boards for raw and cooked food thoroughly between tasks.
3. Make sure you do not wash raw meat.
4. Wash your hands after touching raw food and before you handle ready-to-eat food Mind Your Cutting Boards. Every kitchen should have at least two cutting boards (at least)
5. Clean All Surfaces

3.6. Take corrective actions

Corrective action involves verbal or written communications from you to the employee that are designed to assist the employee in correcting the “problem” or concern, e.g., performance, attendance or conduct. Non-disciplinary corrective action typically includes informal discussions, verbal warnings and letters of concern or expectation.

Taking Corrective Actions the final strategy-evaluation activity, taking corrective actions, requires making changes to reposition a firm competitively for the future. Examples of changes that may be needed are altering an organization’s structure, replacing one or more key individuals, selling a division, or revising a business mission.

Corrective Action Examples In the context of human resources, corrective actions focus on discipline. For instance, an employee who harassed a coworker may face warnings, suspension or termination. These actions aim to eliminate the cause of the harassment by reprimanding the harasser.

Each hospitality business must take corrective actions if the food hazards are found not to be under control, or the food poses a risk of harm if eaten.

All corrective actions must be written down in a record book. Examples of some common corrective actions are:

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- customer complaints
- out of date food
- spoiled, unattractive food
- unclean equipment
- physical objects found in food

Methods of take corrective actions

The methods undertaken in corrective action include identifying a problem and thoroughly documenting the resources and activities needed to alleviate the acute symptoms. Hence, documentation is the core of a corrective action system procedure. Its primary purpose however is to identify and resolve the problem's core cause.

Examples Goods of corrective action

- Performance-based corrective action It can be stressful for managers to speak with employees about how to improve their performance, but you can alleviate this anxiety by approaching staff casually and on a personal level
- Employee behavior
- Employee misconduct
- Business process inefficiencies
- Safety issues

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Self-Check -3	Written Test
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Part I Test: say True or False (10 marks)

1. Danger Zone” of between 5°C - 60°C is central to keeping food safe, and minimizing contamination.
2. A report is a document that presents relevant business information in an organized and understandable format.
3. Microorganisms are tiny single cell living organisms.
4. HACCP is a process that ensures the risk of contamination is prevented at all critical points in the production of food.
5. Physical hazards which live within food can occur from multiple sources.

Part II: Test Multiple-choice questions (10 marks)

1. Appropriate persons whom to report issues of environment concerns are:-

A. Supervisor / team leader	C. Personal trainers
B. Bank manager	D. Work colleague
2. The reporting and monitoring of environmental hazards can be performed through the following means:
 - A. Formal /informal, verbal and written
 - B. Check lists
 - C. Pest inspection reports
 - D. Informal discussions and report forms
3. The hospitality environmental has common potential hazardous wastes includes:
 - A. Polishes, cleaning and disinfecting products
 - B. Office products
 - C. Pesticides, fungicides and herbicides
 - D. All of the above
4. Ergonomics is the relationships b/n how the body is used and the:-
 - A. Strength of the equipment being used

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- B. Color of the equipment being used
 - C. Equipment purchased to complete a particular tasks
 - D. Equipment being used to complete a particular tasks
5. A hazard is anything (including work practices or procedures that has the potential to
- A. Harm the health or safety of a person
 - B. Harm only the safety of a person
 - C. Harm the health or safety of only the building
 - D. Harm the impact of the chemical
6. Chemicals should always be stored
- A. In well-ventilated areas together with the food and beverages for easy access
 - B. In a dark closet so air doesn't contaminate the chemicals
 - C. In a well-ventilated area that is separate from food but near beverages
 - D. In a well-ventilated areas that is separate from food and beverages

Test Three: Give short answer for the following questions

1. Explain the types of food hazard
2. Define the word spoilage
3. Explain the meaning of microorganism

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Unit Four: Handle food safely

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Food types and receiving procedures
- Food storage environmental condition
- Effect of temperature on food
- Safe food handling procedure

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Follow Food types and receiving procedures
- Identify food storage environmental condition
- Apply effect of temperature on food
- Identify safe food handling procedure

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4.1. Food types and receiving procedures

All food should be ordered and received from approved suppliers or providers. Approved suppliers are inspected to ensure that they produce food safely. Take and record the temperatures of all foods that need temperature control. If you notice any signs of possible contamination, reject the shipment.

4.1.1 Food types

Food is any substance consumed to provide nutritional support for an organism. Food is usually of plant, animal, or fungal origin, and contains essential nutrients, such as carbohydrates, fats, proteins, vitamins, or minerals.

There are six food categories:

- A. Eggs
- B. Dairy products
- C. Meat and fish
- D. Fruit and vegetables
- E. Dried goods
- F. Frozen goods

A. Eggs

An egg is an organic vessel grown by an animal to carry a possibly fertilized egg cell (a zygote) and to incubate from it an embryo within the egg until the embryo has become an animal fetus that can survive on its own, at which point the animal hatches.



Figure 4.1 sample eggs

B. Dairy Products

Dairy products must be stored in the refrigerator at temperatures of 2°C to 4°C (36° to 39°F). Follow these guidelines:

- The fat in dairy products has a tendency to absorb strong odours from the storage surroundings. To reduce the likelihood of this happening, store dairy products in their own area in protective coverings.
- Do not store dairy products in a vegetable cooler; a separate refrigerator is much more acceptable.
- Keep the refrigerator clean at all times.
- Rotate dairy products when fresh product arrives. Dairy products should not be ordered too far in advance of when they will be used. Ideally, such products should be delivered on a daily basis.
- Soft fruits should not be stored too long. It is often best to buy soft fruit as you need it, keeping very little on hand.
- Unripe fruit can be ripened at storeroom temperatures of 10°C to 15°C (50°F to 59°F). It will ripen much more slowly under refrigerator conditions.
- Before storing and when rotating stock, it is important to remove rotting fruit from cases as one piece can affect others. The chain reaction can quickly destroy the quality of a whole case of fruit.
- Be aware of special storage problems. For example, bananas stored in the refrigerator turn black quickly. Bananas should be stored under conditions where the temperature range is 10°C to 15°C (50°F to 59°F).

C. Meat and fish

Meat is animal flesh that is eaten as food. Humans have hunted and killed animals for meat since prehistoric times. The advent of civilization allowed the domestication of animals such as chickens, sheep, rabbits, pigs and cattle.

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Types of Meat

- Poultry meat: turkey and chicken
- Red meat – lamb, goat, and beef
- Seafood: lobster, crab, and fish
- Pork – is the pig’s meat

Fish are aquatic, craniate, gill -bearing animals that lack limbs with digits. Included in this definition are the living hagfish, lampreys, and cartilaginous and bony fish as well as various extinct related groups.

All fish are vertebrates, and types of fish are divided into groups such as bony fish, cartilaginous fish, and jawless fish. Most of the fish we consume are bony types of fish. Some cheap types of fish include mackerel, sardines, and tilapia. Expensive types of fish in a restaurant can include blue fin tuna, swordfish, and wild salmon.

Fresh Meats, Poultry, and Seafood

These items are the most difficult to store and the most expensive food items sold by the restaurant. Keep these factors in mind when storing fresh meats, poultry, and produce:

- All carcass meats should be unwrapped and hung so that air can circulate around them. They should be stored at 1°C to 3°C (34°C to 37°F) in a walk-in refrigerator. Place absorbent paper under the meats for quick cleanup of any unwanted drips.
- Fresh meat must not be kept too long. Boned meat should be kept no longer than three days. Individual cuts should be used within two days, preferably on the day they are cut.
- Individual meat cuts such as steaks, chops, stewing meat, and ground meat should be kept covered on plastic or stainless steel trays at 2°C to 4°C (36°F to 39°F).
- Fresh poultry should be packed in ice and stored in the refrigerator.
- Fresh seafood should be packed in ice, stored at –1°C to 2°C (30°C to 34°F) and used as soon as possible.
- Store raw products on the lower shelves of the refrigerator, below cooked products.

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D. Fruit and vegetables

The main difference between fruit and vegetable is that fruit is the mature ovary of higher plants. Whereas vegetable is the edible parts of the plant such as stalks, roots, leaves, tubers, bulbs or even flower buds. Fruits and vegetables are two parts of plants that are edible. Fruits can be vegetables but, all vegetables are not fruits.

The fruit vs. Vegetable classification goes by which part of the plant it comes from. Fruits come from the flowers of the plant, while vegetables come from other parts of the plant. Another distinction is that fruits contain seeds, and vegetables contain leaves and stems.

E. Dry Foods

The storeroom for dry foods should be located near the receiving area and close to the main kitchen. Unfortunately, the storeroom for dry foods is often an afterthought in food service facility designs, and the area designated for storage is sometimes in an inconvenient location.

No matter where the location, there are several essential points to be observed in the care and control of the dry storeroom.

- The area should be dry and cool to prevent spoilage and the swelling of canned goods. The ideal temperature range is 10°C to 15°C (50°F to 59°F).
- The storeroom should be easy to keep clean and free from rodents and vermin. This means all wall, ceiling, and floor openings should be sealed and protected to prevent access.
- It should be designed so it is easy to arrange and rearrange supplies to facilitate stock rotation. The best arrangement is to have shelves situated in the middle of the room so they can be stocked from both sides. This allows you to rotate stock by simply pushing out old stock by sliding new stock in from the other side of the shelf. This guarantees that first items received will be the first items used, or the “first in, first out” (**FIFO**) concept in stock rotation.

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- The area should be well lit.
- Shelving must be at least 15 cm (6 in.) Above the floor. Do not store items right on the floor.
- Aisles should be wide enough to allow room for carts or dollies, which should be used to prevent possible injuries from lifting.

6. Frozen Foods

Frozen foods should be stored at -18°C (0°F) or lower. If the temperature rises above -18°C , food can become discolored and lose vitamin content. Lowering the temperature after it has risen does not correct the damage.

Keep these factors in mind when storing frozen foods:

- Fruit and vegetables that are received frozen will keep for months if they are properly wrapped. Fish and meat properly wrapped also have a relatively long freezer shelf life.
- Freezing fresh fruits and vegetables on the premises is time consuming and may be too expensive to consider. Fresh fruit must be properly prepared for freezing or it will not store well.
- All freezer products not properly wrapped will develop freezer burn, which is a loss of moisture that affects both the texture and the flavour of the food. A common sign of freezer burn is a white or grey dry spot developing on the surface of the frozen product. Meat is particularly susceptible to freezer burn.
- Rotating stock is extremely important with frozen foods. Such rotation is difficult in standard chest freezers as it often means that old stock must be removed before new stock is added. The temptation with frozen foods is to develop the unacceptable habit of using the last item bought first, instead of FIFO (first in, first out).

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4.1.2 Receiving procedures

Received food should have the correct color, texture, and odor. The packaging of delivered food items must be intact and clean and it must protect food from contamination. There should also be no signs of pests or dampness. Food items should be correctly labeled and contain the correct documentations.

The following are important elements to consider when receiving products in general.

- Never assume that all the food you receive is good enough to eat.
- The receiving dock and related areas should be well lit and kept very tidy. Incorporate this area into a daily cleaning schedule to ensure proper cleanliness.
- Schedule your deliveries to allow adequate time for the proper inspection and receiving of all food products.
- Have all appropriate equipment and containers on hand. Scales, plastic gloves, containers, and thermometers are important pieces to have in easy reach.
- Record the temperatures of the delivery trucks refrigerated and freezer storage. If the temperature is not within an acceptable range, do not accept the shipment (because you are unable to ascertain the length of time that the temperature has been unacceptable).

4.2. Food storage environmental condition

The best range for food storage is a constant temperature between 40-60 degrees. Avoid freezing temperatures. Moisture: It is recommended to remove moisture when storing foods. For long term storage foods should have a 10% or less moisture content.

The proper storage of food is a critical part of maintaining high catering standards and of reducing the risk of food poisoning.

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Some foods must be stored in the fridge and eaten within a short space of time. Other foods, such as flour, pulses, canned foods and many others, last much longer and can be stored at room temperature. However, all foods have limits on their storage time and staff should always follow storage instructions and be aware of “use by” dates. In particular, staff must make sure that they always store foods:

- in the right place
- at the right temperature
- For the right time.

Cooks and staff responsible for food ordering in a professional care home kitchen should maintain a strict regime of stock control that includes the removal of all out-of-date foods.

In most cases, domiciliary care staff providing food services in a person’s own home will not be responsible for food storage.

However, they should always strive to ensure that good practice guidelines are followed as far as is possible, such as disposing of out-of-date food.

The following storage guidelines should be followed.

- To avoid cross-contamination, store raw foods away from other foods in the fridge, especially cooked foods and ready-to-eat foods (such as salads, fruit, cooked meats, cheeses, bread and sandwiches).
- Store raw meat/poultry in clean sealed containers on the bottom shelf of the fridge, so it cannot touch or drip onto other food.
- Store foods in separate covered containers whenever possible.
- Cover dishes and other open containers with foil or film.
- Do not reuse foil or film to wrap other foods.
- Keep food storage areas dry and cool.
- Store root vegetables away from other fruit and vegetables and in a dark place.
- Ensure that all storage cupboards and pantries are pest-free.
- Do not store food on the floor because this can encourage mice, ants and other pests.

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- After opening packets of dried foods (eg flour, rice and breakfast cereals) reseal them tightly or transfer contents to storage jars.
- Ensure that storage containers have tightly fitting lids — always wash and allow them to dry thoroughly after use.
- Do not store food or drinks near cleaning products or other chemicals.
- All food that looks, tastes or smells off or is past its “use by” date should be thrown away.
- Cling film is useful for protecting food but it needs to be used correctly.
- Do not use cling film if it could melt into food, such as in the oven or on pots and pans on the hob.
- Cling film can be used in the microwave but should not touch the food.
- Cling film should only be allowed to touch high-fat foods when the packaging says it is suitable for this — high-fat foods include some types of cheese, raw meats with a layer of fat, fried meats, pies and pastries, and cakes with butter icing or chocolate coatings.
- If it is suspected that any ready-to-eat food has not been kept separate from raw meat or poultry then the food should be thrown away immediately. If equipment, surfaces or utensils have been touched by raw meat or poultry then they should be washed, disinfected and dried immediately to prevent harmful bacteria from spreading.

Cool and heat processes

There are two types of food process. Those are:

a. Cooling

Cooling is removal of heat, usually resulting in a lower temperature and/or phase change. Temperature lowering achieved by any other means may also be called cooling. The transfer of thermal energy may occur via thermal radiation, heat conduction or convection.

Proper cooling methods for food:

- Separate food into smaller portions. A large pot of hot food put right into the fridge can become dangerous

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- Cover food loosely while it cools
- Stir loose foods
- Use an ice bath
- Add ice as an ingredient
- Use a blast chiller or tumbler.

When cooling cooked potentially hazardous food, it must be cooled to 21°C in two hours or less, then cooled further from 21°C to 5°C in four hours or less. You can use a different cooling process but you must be able to show that it keeps the food safe.

Tips for cooling food quickly

- divide food into smaller portions in shallow containers to cool, being careful not to contaminate the food as you do this
- use rapid-cooling equipment (e.g. a blast chiller)
- stir liquid foods such as gravy often, using a clean and sanitised utensil
- use water or ice water baths
- allow air to flow freely around the cooling container (e.g. on a rack rather than the floor)
- add ice as an ingredient
- Check temperature with a probe thermometer.

b. Heating

Heating is process and system of raising the temperature of an enclosed space for the primary purpose of ensuring the comfort of the occupants. By regulating the ambient temperature, heating also serves to maintain a building's structural, mechanical, and electrical systems.

If you are reheating potentially hazardous food to hot hold, you must heat it quickly to 60°C or hotter ideally in two hours or less.

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Tips for heating food quickly

- Use a microwave, oven or stove top to rapidly reheat it to at least 60°C
- Don't heat food using bain maries, pie warmers or other equipment designed only to hold food hot - this is likely to take too long or not heat the food enough to keep it safe
- Heat food to 60°C or hotter before transferring to hot-holding equipment
- Avoid reheating potentially hazardous food more than once, so it doesn't go through multiple warming periods

4.3. Effect of temperature on food

Overall, therefore, as temperature rises, perceptions of sweetness and bitterness tend to intensify, and perceptions of sourness and saltiness tend to remain the same.

Because the effect of temperature is not uniform across compounds, it can be expected that the taste "profile" of a food will change as its temperature changes

4.3.1 Storage Temperatures and Procedures

A food service operation needs to have clearly defined storage areas and procedures for several reasons.

- First, by providing storage facilities it is possible to purchase supplies in quantities large enough quantities to get price breaks.
- Second, the ability to store supplies on the premises reduces the cost and time needed to order supplies and handle them upon delivery.
- Third, menu planning is easier when you are aware of the quality, quantity, and types of supplies that are on hand. If there is a run on a particular menu item, it is nice to know there are enough materials on hand to ensure that everyone who orders the item can be served.

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4.3.2 Monitoring temperature of food throughout the preparation process

Use a clean, sanitized, and calibrated thermometer (preferably a thermocouple) to check temperatures. Take at least two internal temperatures from each pan of food at various stages of preparation. Monitor the amount of time that food is in the temperature danger zone. It should not exceed 4 hours.

Thermometers in the equipment and an external probe thermometer is used to get authentic results.

- Before use, ensure the thermometer is clean and dry. ...
- Place the probe into the food and wait until the temperature reading has stabilized before reading.
- Measure different parts of a food as the temperature may not be the same in all parts

4.4. Safe food handling procedure

It's very important to prepare food safely to help stop harmful bacteria from spreading and growing. You can take some steps to help protect yourself and your customer from the spread of harmful bacteria.

Remember the following tips when preparing foods:

A. Wash your hands: - Your hands can easily spread bacteria around the kitchen and onto food. It's important to always wash your hands thoroughly with soap and warm water:

- Before starting to prepare food
- After touching raw food such as meat, poultry and vegetables
- After going to the toilet
- After touching the bin
- After touching pets

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Don't forget to dry your hands thoroughly as well, because wet hands spread bacteria more easily.

B. Keep worktops clean:- Before you start preparing food, it's important worktops, kitchen utensils and chopping boards are clean. If they've been touched by raw meat, poultry, eggs or vegetables you'll need to wash them thoroughly.

You should change dish cloths and tea towels regularly to avoid any bacteria growing on the material.

C. Separate raw food from ready-to-eat food: - Raw foods such as meat, fish and vegetables may contain harmful bacteria that can spread very easily by touching:

- Other foods
- Worktops
- Chopping boards
- Knives

You should keep raw foods away from ready-to-eat food, such as salad, fruit and bread. This is because these types of food won't be cooked before you eat them, so any bacteria that get onto the food won't be killed.

The following are some helping tips for stopping bacteria from spreading:

- Don't let raw food such as meat, fish or vegetables touch other food
- Don't prepare ready-to-eat
- Food using a chopping board or knife that you have used to prepare raw food, unless they have been washed thoroughly first
- Wash your hands thoroughly after touching raw meat, fish or vegetables and before you touch anything else

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- Cover raw meat or fish and store on the bottom shelf of the fridge where they can't touch or drip onto other foods
- Don't wash raw meat before cooking
- Wash, peel or cook vegetables unless these are described as 'ready-to-eat' on the packaging

D. Check the label

- It's important to read food labels to make sure everything you're going to use has been stored correctly (according to any storage instructions) and that none of the food is past its 'use by' date.
- Food that goes off quickly usually has storage instructions on the label that say how long you can keep the food and whether it needs to go in the fridge.
- This sort of food often has special packaging to help keep it fresh for longer. But it will go off quickly once you've opened it. This is why the storage instructions also tell you how long the food will keep once the packaging has been opened. For example, you might see 'eat within two days of opening' on the label.

E. Use by dates

- You will also see 'use by' dates on food that goes off quickly. You shouldn't use any food after the 'use by' date even if the food looks and smells fine, because it might contain harmful bacteria.
- The 'best before' dates marked on most foods are more about quality than safety. When this date runs out, it doesn't mean that the food will be harmful, but its flavor, color or texture might begin to deteriorate.

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- An exception to this is eggs, which have a best before date of no more than 28 days after they are laid. After this date the quality of the egg will deteriorate and if any salmonella bacteria are present, they could multiply to high levels and could make you ill.
- If you plan to use an egg after its best before date, make sure that you only use it in dishes where it will be fully cooked, so that both yolk and white are solid, such as in a cake or as a hard-boiled egg.

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Self-Check -4	Written Test
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Part One: Say True or False (3 marks each questions)

1. Cooling is process and system of raising the temperature of an enclosed space for the primary purpose of ensuring the comfort of the occupants
2. Meat, fish & vegetables are type of raw food
3. Cooking is removal of heat, usually resulting in a lower temperature and/or phase change.

Part Two: matching

- | A | B |
|--|-------------------------|
| 1. Put food in the fridge right away | A. Separate |
| 2. Foods need to get hot and stay hot | B. Chill |
| 3. (Keep Apart) Keep raw foods to themselves | C. Cook |
| 4. The food should have the correct color, texture, and Odor | D. Receiving procedures |
| 5. Turkey and chicken | E. Check the label |
| | F. Wash your hands |
| | G. Poultry meat |

Part Three: Answer all the questions listed below.

1. Explain the different types of food storage
2. How to maintain the safety of food in storing process

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Unit Five: Prevent food contamination

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Maintain clean clothes
- Prevention of food from worn out items
- Food contamination
- Maintain clean materials and clothes
- Hand washing procedures
- Clean and sanitize equipment
- Dispose contaminated food

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Apply clean clothes
- Perform ways of prevention of food from worn out item
- Practice ways of eliminating food contamination
- Use of clean materials and clothes.
- Follow hand washing procedures
- Clean and sanitize equipment
- Practice ways of disposing food

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5.1. Clean cloth

Work clothes should be exclusively for work and food handling, and should preferably be light-colored. It should be clean and neat, and should not be taken out on the street or in places where it may become contaminated. It is also must be clean a minimum requirement is for clean clothes for each shift.

Wear clean clothing when handling food. Practical measures in this regard include:

- Wear clean clothes to work daily
- Have a change of clothes available at work – to change into if one set of clothes becomes dirty/contaminated
- Wear protective clothing such as clean aprons
- Use waterproof bandages and dressing on exposed parts of the body where there are cuts and/or sores when handling food. Practical measures in this regard include:
- Wear only colored band-aids when handling food – they are easier to identify if they fall into food
- In the case of going out to other places, work clothes should be exchanged for street clothes.
- The hat or hairnet should cover the hair completely to prevent it from falling on the food. It also helps us not to touch our hair and then touch the food... and both men and women should wear the hat or hairnet.

5.2. Prevention of food from worn out items

Dirty clothes and infected cuts and sores all pose a food risk. An outbreak of food poisoning traced back to you is no laughing matter.

To Prevent of food from worn out items rules are:

- **Facial hair must be kept neat and controlled:** hair should either be covered or sprayed to keep it controlled in such a way that hairs do not fall into food, long hair must be tied back (this is applicable to waiting staff as well as food preparation and food service staff), and beards should also be covered.

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- **No jewelry to be worn on hands and wrists:** food can lodge in the jewelry, deteriorate and then fall back into food. There is also a chance that stones/gems may fall out into the food providing a physical food contaminant. If you simply must wear a ring, then cover it using a glove or Band-Aid.
- **Fingernails must be short** (use a nail brush to clean under them as bacteria love hiding here), clean and free of polish: cracked fingernails and chipped nail polish can harbor bacteria and may also flake off into food - this applies even to clear nail polish.
- **Clothing must be clean:** a minimum requirement is for clean clothes for each shift with further changes as spillages and 'working dirt' dictate. It is not permitted to wear your 'food handling clothes to and from work.
- **Cuts and sores must always be covered:** a proper, colored, waterproof dressing must be applied and a finger stall used where necessary.
- Food handlers in the acute state of a common cold must not handle food
- **Food handlers with any communicable disease** must not deal with food until they receive a certificate from a doctor stating that they are cleared to work with food.

Other worn out items may include:

- Linens
- Uniforms
- Table clothes
- Naprons

Ensure anything from your body or anything you wear does not contaminate food or food surfaces. Practical measures in this regard include:

- Avoid loose-fitting clothes
- Do not cough or sneeze over food
- Avoid items of jewelry that hang down/dangle
- Avoid wearing rings when working with food – especially avoid (or appropriately cover) rings with stones in them
- Do not wear food handling clothes to and from work
- Remove protective clothing (aprons) when using the toilet

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- It is not allowed to carry personal items while handling food, so jewelry, earrings, watches, pendants, bracelets, rings, piercings, etc... will be removed before the start of the working day. This is explained by the fact that objects accumulate dirt that can be transferred to the food, can also fall into the food and reach the final consumer, and can even cause accidents at work due to being hooked up with them while working.
- If gloves are needed for work, they should be kept clean and unbroken. Even if you wear gloves, you should also wash your hands before putting them on, and be as careful as if you did not wear them

5.3. Food contamination

Food contamination is generally defined as foods that are spoiled or contaminated because they either contain microorganisms, such as bacteria or parasites, or toxic substances that make them unfit for consumption.

Contamination of food can happen at any point of production: growing, harvesting, processing, storing, shipping or preparing.

Types of food contamination

There are many types of food contamination on working area. Those are listed below:

1. Chemical Contamination of Food

Chemical contamination happens when a food becomes contaminated by some kind of chemical substance. Chemicals are used frequently in the kitchen for cleaning and disinfection, so it's unsurprising that they can contaminate food. Contamination may occur from preparing food on a surface that still has chemical residue on it or if someone sprays cleaning chemicals close to uncovered food

Anybody who prepares and handles food must make sure that the food they serve is free from chemical contamination. To ensure this, they should:

- Always store chemicals in a separate area to food.
- Follow the manufacturers' instructions when using chemicals.

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- Keep food covered when cleaning.
- Use approved suppliers who can guarantee the safety of the food they provide.

2. Microbial Contamination of Food

Microbial contamination happens when a food has been contaminated by microorganisms, including bacteria, viruses, mold, fungi, and toxins. This can happen through various means,

Microbial contamination is the most common reason behind outbreaks of food poisoning. The best way to prevent this type of contamination is by following strict, high-standard food hygiene practices. This means:

- Having impeccable personal hygiene and taking time off from work when you are ill.
- Separating raw and ready-to-eat food at all stages of the food handling process, from delivery to serving.
- Always washing raw fruit and vegetables.
- Controlling pests and ensuring they are not on the premises.

3. Physical Contamination of Food

Physical contamination happens when a food has been contaminated by a foreign object. It can occur at any stage of food delivery and preparation. Physical contamination can cause serious harm to the consumer, including broken teeth or choking.

Types of physical contaminants that can be found in food include jewellery, hair, plastic, bones, stones, pest bodies, and cloth.

You can prevent physical contamination through:

- Replacing any damaged equipment immediately.
- Reporting any faults with equipment and premises without delay.
- Having a thorough pest control system in place.
- Following dress code principles, such as removing jewellery when handling food and wearing a hairnet.

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4. Allergenic Contamination of Food

Allergenic contamination occurs when a food that causes an allergic reaction comes into contact with another food. For example, if the same knife used to cut normal bread is then used to cut gluten-free bread, or if pasta is stored in a tub that used to contain peanuts.

There are different allergens. These are the foods that account for the majority of food allergies in people. The list includes things like gluten, peanuts, eggs, mustard, soy, and fish.

For someone with a food allergy, consuming even a tiny amount of that food is enough to cause a fatal reaction. As a result, it's essential that you prevent allergenic contamination of food in your premises. In order to do this, you must:

- Ensure your food comes from approved suppliers who you know will take allergenic contamination seriously.
- Keep preparation areas, equipment, utensils, and cloths that you use for allergenic foods separate to those you use for other foods.
- Separate allergenic products from other food products in your fridges, freezers, and all other food storage areas.
- Thoroughly clean and disinfect your kitchen regularly and especially after preparing food that contains one of the fourteen allergens.

5.4. Hand washing procedures

Hand washing is the act of cleaning one's hands with soap and water to remove virus/bacteria/microorganisms, dirt, grease, or harmful and unwanted substances stuck to the hands.

Hand washing involves more than a quick rinse of hands in a sink of water.

The correct hand washing methods is:

- Rinse hands in warm water
- Use a liquid soap or sanitizer.
- Scrub arms, wrists, hands, fingers, fingernails - front and back.
- Rinse under warm running water and dry hands using disposable towel or hair dryer.

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Appropriate hand washing Facilities

Wash hands using appropriate facilities, appropriate hand washing facilities and with appropriate method.

- Warm running water
- Soap
- Single use towels
- Designated and hand washing sink

Hands should be washed at every change of task and in particular after:

- using the bathroom
- handling money
- sneezing, coughing or scratching
- returning from a break
- handling chemicals
- handling waste or garbage
- handling raw foods, particularly meat, poultry or seafood
- Handling dirty or used linen.
- Immediately before food preparation
- Immediately after touching any part of the body
- Immediately after using the toilet
- Immediately after coughing, sneezing, using handkerchief or tissue, using tobacco, eating or drinking.
- Immediately after smoking, coughing, sneezing, blowing the nose, eating, drinking, and touching the hair, scalp or any wound
- During food preparation especially when switching from raw foods to ready to eat products.
- After taking out the garbage, wiping counters or tables, handling chemicals, picking up dropped items, etc.
- After touching animals.

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5.5. Cleaning and sanitizing equipment

5.1.1. Cleaning equipment

Cleaning equipment is the removal of visible dirt and debris (including rust) either from crockery, cutlery, glasses, equipment or fixtures and fittings. Sanitation is the killing of microbes using either hot water and/or chemicals.

Cleaning is performed before sanitation and where chemicals are used, the manufacturer's instructions in relation to dilution rates, contact time and temperature must be adhered to. Surfaces must first be cleaned and rinsed before being sanitized.

5.1.2. Sanitizing equipment's

Sanitizing means to reduce the microorganism on the surface

There are two methods used to sanitize surfaces: heat sanitizing and chemical sanitizing. Which you use depends on the application.

a. Heat Sanitizing

The higher the heat, the shorter the time required to kill microorganisms. The most common way to heat-sanitize tableware, utensils, or equipment is to immerse or spray the items with hot water.

Use a thermometer to check water temperature when heat sanitizing by immersion. High-temperature machines rely on hot water to clean and sanitize. Water temperature is critical and may vary by model. The temperature of the final sanitizing rinse must be at least 75°C. Water that is too hot might vaporize before sanitizing items, or might bake food onto tableware and utensils, making it even harder to get them clean.

b. Chemical Sanitizing

Chemical sanitizers are widely used in establishments because they are effective, reasonably priced, and easy to use. The three most common are chlorine, iodine and quaternary ammonium compounds

To maximize the effectiveness of cleaning and sanitizing equipments focus on these methods:

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1. Cleaning. The first step is to remove all organic material. This is best achieved using a broom, shovel or scraper. Remove as much solids as possible to minimize the use of water in the next step.

2. Washing. This step is the most time-consuming of the entire process, but it is also the most important. When done correctly, washing will remove 99.99% of the microorganisms in the environment.

The objective here is to remove all remaining organic matter (manure, feed, urine, etc). This is usually done with a high-pressure washer. There are two important numbers to look at when comparing equipment.

Soaking: Soaking surfaces before washing will cut down on the amount of time needed to do a more complete job. Soaking can be achieved by placing a sprinkler system in the rooms to be washed. When soaking a trailer, you may want to just wet the entire trailer first with a moderate amount of water, then start thorough washing at one end while other surfaces have more time to soak.

Detergents are products used to reduce surface tension and suspend particles to facilitate cleaning. They can be acidic (good for protein removal) or alkaline (good for fats). Some commercial products contain both types.

Hot water: Hot water can also speed up the washing process. The one disadvantage of hot water is that it can produce steam and hamper visibility, particularly in winter. The goal is to have the water hot enough to facilitate cleaning without putting employees at risk. You will not be able to have the water hot enough to kill bacteria or viruses, as these high temperatures would cause skin burns.

3. Disinfecting: This is a critical step in the cleaning process that requires some use of science unless surfaces are completely cleaned (none-to-minimal organic matter), disinfection will not be effective.

4. Drying time. One of the challenges with most cleaning and disinfection programs is allowing ample time for extended drying. The purpose of this downtime/drying time is so that all moisture can evaporate from the building and all its surfaces.

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5.6. Dispose contaminated food

Disposing contaminated food is any product, food items that are unwanted and intended to be disposed of and removed from a food area or premises. Garbage & waste areas provide the perfect environment for bacteria to breed and multiply, and hospitality establishments produce a lot of waste every day!

Types of food to dispose

The following types of food need to be disposed:

- Food which has been contaminated by physical, chemical or biological contaminants.
- Food held for too long in the temperature danger zone and falls outside the two hour four hour rule.
- Items leftover from the service period which cannot be reused, stored, refrigerated or sold.
- Reheated food items which cannot be re-refrigerated.
- Food with damaged packaging.
- Food which has passed its 'use-by' or 'best before' dates.
- All garbage bins must be in good condition and must be fitted with tight-fitting lids which must be kept in position so as to provide protection against vermin gaining access to the rubbish.
- They must be regularly cleaned using brushes and utensils dedicated solely to that task, and using some form of degreaser to cut through the grease, and a deodorant to control smells



Figure 9 Garbage & waste

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3R Rule for Waste Disposal

1. Reduce

With individual efforts, we can reduce the waste we produce in the first place. For example – materials must be bought from the market only if it is necessary for us.

2. Reuse

We can use the same thing again and again for different purposes. For example-

We can use plastic jars of jams, pickles, oil, etc. for storing things like salt, spices, sugar etc.

Old invitation cards can be reused to make envelopes.

3. Recycle

We can reform glass, plastic, metal and paper objects and converts them into useful substances.

This process is recycling. For example,

We can recycle old newspapers, magazines, books, notebooks to make new paper or cardboard.

Broken or discarded plastic items can be melted and remolded to form other useful substances.

Reduce use of chemicals

1. Many chemicals can't be put into normal rubbish bins or tipped down drains. Your workplace will have its own guidelines for disposing of toxic products safely.
2. using microfiber cleaning products that don't need chemicals
3. using cleaning products that are not toxic
4. using spray bottles rather than aerosol sprays
5. Using environmentally friendly methods to remove pests, such as mouse traps instead of bait, and insect screens on windows.

Dispose of refuse properly

- Place food scraps in proper containers.
- Do not allow containers to overflow. Empty them before they are completely full.
- Do not stack full refuse containers

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Waste management

The collection, transportation, and disposal of garbage, sewage, and other waste products waste management encompasses management of all processes and resources for proper handling of waste materials, from maintenance of waste transport trucks and dumping facilities to compliance with health codes and environmental regulations.

Waste can be solid, liquid, or gaseous and each type has different methods of disposal and management.

Waste management deals with all types of waste, there are 5 types of waste: -

- | | |
|-------------------|------------------------|
| a. Liquid Waste, | d. Recyclable Rubbish, |
| b. Solid Rubbish, | e. Hazardous Waste |
| c. Organic Waste, | |

The following guidelines will help prevent the spread of bacteria in the garbage area.

- Waste and rubbish bins must be clearly identifiable from storage containers
- Waste disposable bins are to have tight fitting lids and should be durable fly-proof and rodent proof containers that do not leak or absorb odors.
- Place waste disposable bins conveniently around the work area of the premises
- Use plastic liners in waste disposal bins
- Empty waste disposal bins on a regular basis to avoid overfilling.
- Clean and sanitize bins daily and drain overnight
- Regularly clear waste pits or grease traps of any build up
- Provide a separate area for garbage storage and ensure regular collection of refuse.
- Contaminated food must be disposed promptly and in the appropriate bins to lower the risk of cross contamination with other food staff.
- Wash your hands after handling garbage

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Self-Check 5	Written Test
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Test I Directions: Say true or false the following questions. Each questions (3 point)

1. Disposing contaminated food is any product, food items that are unwanted and intended to be disposed
2. Using cleaning products are **not** toxic
3. Sanitizing means reducing the microorganism on the surface

Test- II Choose the correct answer for the following questions each questions (2 point).

1. Which of the following is ways of disposing waste?
 - A. Place food scraps in proper containers.
 - B. Do not allow containers to overflow.
 - C. Do not stack full refuse containers
 - D. All of the above
2. One of the following is the first step to remove all organic material.
 - A. Washing
 - B. Cleaning
 - C. Rinsing
 - D. Sanitizing
3. Which of the following are types of waste?
 - A. Liquid Waste,
 - B. Solid Rubbish,
 - C. Organic Waste,
 - D. Recyclable Rubbish,
 - E. All of the above

Test III Directions: Answer all the questions listed below. Each questions (3 point)

1. Define meanings of waste
2. Explain types of waste
3. Describe how you manage the waste
4. describe 3R rule for waste disposal
5. Write down methods of cleaning and sanitizing equipments

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Unit Six: Maintain a Clean Environment

This learning guide is developed to provide you the necessary information regarding the following content coverage and topics:

- Accumulate garbage and recycled matter
- Maintenance to ensure cleanliness
- Dispose broken and cracked food and beverage items
- Responsibility of food handling

This guide will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Use appropriate accumulate garbage and recycled matter
- Identify and report maintenance to ensure cleanliness
- Perform dispose broken and cracked food and beverage items
- Apply ways of responsibility of food handling

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6.1. Accumulate garbage and recycled matter

Garbage, trash, rubbish, or refuse is waste material that is discarded by humans, usually due to a perceived lack of utility. The term generally does not encompass bodily waste products, purely liquid or gaseous wastes, or toxic waste products. Garbage is commonly sorted and classified into kinds of material.

A waste container, also known as a dustbin, garbage can, and trash can is a type of container that is usually made out of metal or plastic. The words "rubbish", "basket" and "bin" are more common in British English usage; "trash" and "can" are more common in American English usage.

Should work Segregation of wastes through:

- The Green-colored dustbins are meant for wet and biodegradable wastes. For eg: kitchen wastes including vegetables and fruits skins.
- Blue dustbins are meant for disposal of plastic wrappers and non-biodegradable wastes.
- Yellow dustbins are meant for papers and glass bottles

Ways to Keep Our Environment Clean and Safe

1. Make your voice heard: vote, sign petitions, contact your leaders
2. Refuse single-use items (especially plastic)
3. Buy locally and eat more plants
4. Compost your food waste
5. Plant trees and landscape with native plants

Recycling is the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products. Recycling can benefit your community and the environment

Recycling is the process of converting waste materials into new materials and objects. Recyclable materials include many kinds of glass, paper, cardboard, metal, plastic, tires, textiles, batteries, and electronics.

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Ways of recycle

1. Paper. Recycling paper products is a great way to
2. Plastic. Check the symbol printed on plastics to
3. Glass. Glass can be recycled over and over again
4. Metal. So long as it's clean, you can recycle

6.2. Maintenance to ensure cleanliness

To maintain cleanliness and hygiene at home or your workplace should not be an issue when you know how to do it right. Cleanliness and Hygiene must be maintained if you want to live a healthy and hygienic life.

There is a famous proverb, 'health is wealth'; which means, if you are healthy then you are wealthy. Health is most important and if you are healthy, you can lead a happy life. You can enjoy good health if you maintain cleanliness and hygiene at home and your workplace.

Better-maintained equipment also means higher safety standards for the food it processes. Poorly maintained equipment is more likely to break down during manufacturing, compromising the integrity of the food or leading to false readings of temperature or other important factors

- Clean and sanitize equipment, surfaces and utensils
- Use appropriate containers and prevent accumulation of garbage and recycled matter
- Identify and report cleaning, sanitizing and maintenance requirements
- Dispose of or report chipped, broken or cracked eating, drinking or food handling utensils
- Take measures within scope of responsibility to ensure food handling areas are free from animals and pests and report incidents of animal or pest infestation Make it a habit to clean tools after each use before you return them to storage. Wipe them down with a rag

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or old towel and be sure they are free of dust, grease and debris before you put them into their proper places. This is also an opportunity to look for any damage or defects.

- If you don't maintain your tools, they will accumulate dust, dirt, and grease. Also, they won't be as effective when you need to use them the next time. Ensure that your tools are free of grease and oil before storing them. It helps maintain their condition and prolong their lifespan.
- Under the Food Safety and Hygiene (England) Regulations 2013 the proprietor of a food business must ensure that the equipment and facilities in the premises are easy to clean and/or disinfect and be kept clean and in good repair and condition. As part of a “Due Diligence” defense it is advisable to devise and implement a cleaning schedule to ensure all items of equipment and structure are “cleaned” on a regular basis.

Maintenance to ensure cleanliness may include but not limited;

- a. removal of food waste
- b. removal of grease
- c. removal of dirt
- d. removal of animal or pest waste and cleaning of affected area
- e. recalibration of measurement and temperature control

A. removal of food waste

Food waste can be recycled by two main pathways:

- **Composting:** A treatment that breaks down biodegradable waste by naturally occurring micro-organisms with oxygen, in an enclosed vessel or tunnel or pit
- **Anaerobic digestion or biogas technology:** A treatment that breaks down biodegradable waste in the absence of oxygen, producing a renewable energy (biogas) that can be used to generate electricity and heat

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B. Removal of grease:

The Vinegar works wonders on removing grease from chrome and other similarly shiny metals. Mix up an equal part of white vinegar to warm water and put it in a spray bottle. Spray the mixture onto the grease, and then wipe off with a paper towel.

Another effective way to remove grease stains is by sprinkling the stain with baking soda, starch, or corn flour.

C. Removal of dirt

A Complete Guide to Dirt Removal

- Sell it or Give it Away Online You can easily list your unwanted dirt online, either for free or at a price
- Rent a Roll-Off Dumpster Renting a roll-off dumpster is a simple way to get rid of leftover dirt from a landscaping or construction project
- Let Others Take it for Free
- Hire a Removal Company
- Dump it Yourself

D. Removal of animal or pest

Our comprehensive animal damage cleanup and animal waste cleaning and disinfecting process include both a thorough remediation of animal droppings, and the mitigation of odors.

Animal Waste Health Risks Due to the potential health risks, only a company specializing in animal damage cleanup and disinfection should perform this type of restoration.

E. Recalibration of measurement and temperature control

Recalibration is part of every maintenance program in the process industry, including the food processing industry. Instruments and controls used for measuring, regulating, or recording temperatures, (PH value), acidity, water activity, and other critical factors affecting microbial growth require regular and frequent monitoring for accuracy.

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6.3. Dispose broken and cracked food and beverage items

Always pick up broken glass using a brush and dustpan, tongs or forceps and place into a container specifically designated for broken glass disposal, to minimize the risk for injury. Broken glass should never be handled directly and should never be placed into the regular trash. Disposing chipped, broken or cracked eating, drinking or food handling utensils

Any eating utensil that is damaged must be disposed of including; chipped or broken cups and other crockery items, cracked glasses and sharp edges on cutlery or food-handling utensils.

A food business must maintain food premises, fixtures, fittings, equipment, in a good state of repair and working order. A food business must not use any chipped, broken or cracked eating or drinking utensils when handling food.

Chipped, broken or cracked eating or drinking utensils are a food safety risk as:

- they cannot be effectively cleaned and sanitised and therefore may allow the transmission of infectious diseases they may contaminated
- Dispose of any damaged eating utensils
- Danger's include: the customer being cut and cracks holding bacteria causing food contamination hipped pieces of the utensil fall into the food
- Old crockery including broken cups, saucers and plates should be placed in your general waste bin

6.4. Responsibility of food handling

Preparing various food items for customers following the instructions provided. Packaging all food items for delivery purpose appropriately. Cleaning and disinfecting all food preparation tools, instruments, and equipment before and after each use.

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Putting efforts into optimizing collection, processing and treatment of recyclables and waste is not enough; we need to reach out to the production sector and help them create products that are optimally recyclable to the highest possible extent once consumers decide to generate their end-of-life products as waste

In accordance with the Waste Act, waste holders, such as private individuals, property owners or companies, are primarily responsible for the management of waste.

Proper waste disposal is also a responsibility towards the environment. Waste management reduces the burden of plastics and mass generation of materials. It also promotes composting and other practices that do not contribute to climate change.

Food handler's responsibility

- Properly use and look after any cooking utensils and personal protective equipment.
- Not to engage in horseplay which would put others at risk.
- Keep to a minimum any contact with ready-to-eat food.
- Have high standards of personal hygiene.
- Regularly wash hands.

Proper food handling

- Wash hands with warm water and soap for at least ...
- Rinse fruit and vegetables under running water
- Thoroughly cook meat and fish to the right ...
- Keep refrigerator temperatures at or below 40°F (4°C)

Examples of safe food handling practices include washing hands, cleaning and sanitizing surfaces often, separating raw food from ready-to-eat food, using a food thermometer, and storing food at proper temperatures.

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Self-Check -6

Written Test

Part one: choose the best answer

1. Which one of the following is not proper food handling
 - A. Wash hands with warm water and soap for at least
 - B. Rinse fruit and vegetables under running water
 - C. Thoroughly cook meat and fish to the right
 - D. Keep refrigerator temperatures at or below 40°F (4°C)
 - E. Food handler's responsibility

2. _____ reduces the burden of plastics and mass generation of materials.

A. Waste management	C. wash hands
B. reduce management	D. all

3. Which of the following is food handler's responsibility?
 - A. Regularly wash hands
 - B. Have high standards of personal hygiene
 - C. Keep to a minimum any contact with ready-to-eat food.
 - D. all

4. Which of the following is food handler's responsibility?
 - A. Regularly wash hands
 - B. Have high standards of personal hygiene
 - C. Keep to a minimum any contact with ready-to-eat food.
 - D. all

5. Which of the following is method of maintenance to ensure cleanliness?
 - A. removal of food waste
 - B. removal of grease
 - C. removal of dirt
 - D. all of about

Part Two: Matching

Column A

1. Recycling paper products is a great way to
2. Check the symbol printed on plastics to
3. Glass can be recycled over and over again
4. So long as it's clean, you can recycle

Column B

- A. Metal.
- B. Glass
- C. Plastic
- D. Paper
- E. maintenance

Part Two answer all the questions listed below

1. Who is responsible for waste management?
2. State the method that we used for food waste disposal?
3. Write down the Ways of recycle?
4. Explain Ways to Keep Our Environment Clean and Safe

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