LSSSDC

Facilitator Guide

Sector
Life Sciences

Sub-Sector
Pharmaceutical, Biopharmaceutical

Occupation
Research and Development

Reference ID: LFS/Q0509, Version 1.0
NSQF level: 3

Lab Technician/ Assistant

> **"** Skilling is building a better India. If we have to move India towards development then Skill Development should be our mission. **"**

Shri Narendra Modi
Prime Minister of India

Acknowledgement

About this Guide

Life Sciences Sector is one of the primary engines of growth in the manufacturing space, and a leading player in the recently launched 'Make in India' campaign. With revenue in excess of $30 bn, Life Sciences sector has been growing at over 16% per annum in the past few years. The sector currently provides employment to around 800,000. The Manufacturing job roles, comprise around 384,000 (approx. 48% of the total job volume).

Life Sciences Sector Skill Council is aiming for skilling about 30,000 Lab Assistant in next 3 years. This participant manual dovetails with the National Occupation Standards for Lab Assistant- Life Sciences, also developed by LSSSDC with Industry. The Manual will prove to be a vital tool in the skilling process. It will also be a boon for all fresh aspirants who wish to join the Life Sciences sector as Lab Assistant. It is designed to enable theoretical and practical skilling on Lab Assistant- Life Sciences Qualification Pack which mandates the below four Occupation Standards for the job role:

• Help the lab/QC Chemists/ Research Associates in performing the experiments and analysis.

• Carry out washing, processing and drying of the glassware/plastic ware for experimentation

• Carry out preparation of solution and reagents

• Ensure appropriate measures are taken while opening of chemicals to be used in analysis

• Maintain records of lab usage, storage of chemicals, labels, date of opening and closing

• Reprocess the instruments before carrying out experiments

• Maintain a healthy, safe and secure working environment in the life sciences facility

• Ensure cleanliness in the work area

The above four occupational standards are covered under various units in the participant manual which comprehensively binds knowledge and skills related to these. It.

The book is designed keeping in mind the minimum education qualification of Lab Assistant- Life Sciences to be 10th class Pass as stipulated by Industry. However, as part of this book, efforts have been made to put focus on practical learning in addition to all technical and manufacturing concepts required for the role. The Key Learning Objectives and the skills gained by the participant are defined in their respective units.

The contents of this book are in simple language. It is envisaged that this participant manual will provide the participants with the knowledge and skills required for Job role of Lab Assistant- Life Sciences. It should enable participants to become effective and responsible Lab Assistant for Life Sciences Industry.

Symbols used in the book have been listed below.

Symbols Used

Key Learning Outcomes · Steps · Time · Tips · Notes · Unit Objectives · Exercise · Skills Practical · OJT

Table of Content

Table of Content

1. Lab Technician

Unit 1.1 - Orientation Module

Key Learning Outcomes

At the end of the module, you will be able to:

1. Familiarse with Life Sciences Industry in Indian and Global Context.

2. Explain pharmaceutical & biopharmaceutical sub-sector of Life Sciences Industry including relevant Govt. Scheme, social security benefits, and manufacturing basics and requirements.

3. Brief introduction of Regulatory Authorities and Government Policies, rules and Regulations and their impact on manufacturing organizations, its structure.

4. Describe the knowledge, understanding and skills required for a Lab Assistant.

UNIT 1.1: Orientation Module

Unit Objectives

At the end of this unit you will be able to make the learners understand:

1. Life sciences industry in India
2. Different sectors in Life Sciences Industry
3. Overview of Pharmaceutical, Biopharmaceuticals and drug regulatory agencies etc.

Activity

- Ask the students about the expectations from the course
- Invite students to participate. List their expectations on the whiteboard
- Give the students a brief overview of what all will be covered in the program

Do

- Divide the students into two groups.
- Call one from each group at a time and ask them to greet each other and introduce themselves to each other in front of the class, this will be helpful in judging their interpersonal skills
- Select students randomly and ask them about their hobbies, interests, goal, etc.

Ask

Ask the learners to share:

- Their idea about Life Sciences Industry in India and Global Context
- Basic knowledge and their views on Pharmaceuticals
- Their views on major Drugs and Pharmaceuticals Regulating Bodies
- Basic knowledge that they already know about Regulatory Authority and Government Policies

Say

- Share facts and figures about Life Sciences Sector's growth consistent and remarkable growth to the economic growth of the country
- Provide an overview of Lab Technician and the need for this job role in the sector
- State the roles and responsibilities of Lab Technician
- Brief the learners about the huge demand for trained personnel nationally, in life sciences industry
- State different segments of life sciences industry

Notes for Facilitation

- Encourage shy students to provide information about themselves by prompting them with questions such as 'what do you enjoy doing the most', 'what is your favourite movie or book' etc.
- Appreciate students for their participation
- Explain them required proficiency in communication in Lab Sciences Industry
- Discuss the attributes of a Lab Technician
- Tell them about Biopharmaceutical and the Drug Regulatory Agencies.
- How to create a positive impression at the workplace.

Resources to be Used

- Available objects such as a duster, marker, white board, pen, notebook etc.

Elaborate

The Indian Life Sciences industry currently tops the chart amongst the Indian There is a huge range of science based industries with capacity of expanding in drug manufacture and technology sector. With recent advances in scientific knowledge and technological breakthrough discoveries, Life Sciences industry has gained the central platform with global giants and industry experts getting involved in research and development of new products.

Life Sciences being a diverse and vibrant global industry encompasses a wide range of activities. The activities range from drug discovery, research & development and manufacture of therapeutics, medical devices, diagnostics and platform technologies. It also includes the specialist suppliers of products and services necessary for the functioning of various organizations related to Life Sciences. The increasingly aging global population and their demand for improved longevity offers a very strong growth potential to Life Sciences industry.

Lab Technician

Lab Technician in Life Sciences Sector, also known as Lab Assistant, is responsible provide all the required technical support to ensure laboratory activities are carried out while adhering to correct procedures and health and safety guidelines. They also ensure that all the necessary equipment's, materials etc. are readily available and match the desired standards.

1.1.1 Industry Classification
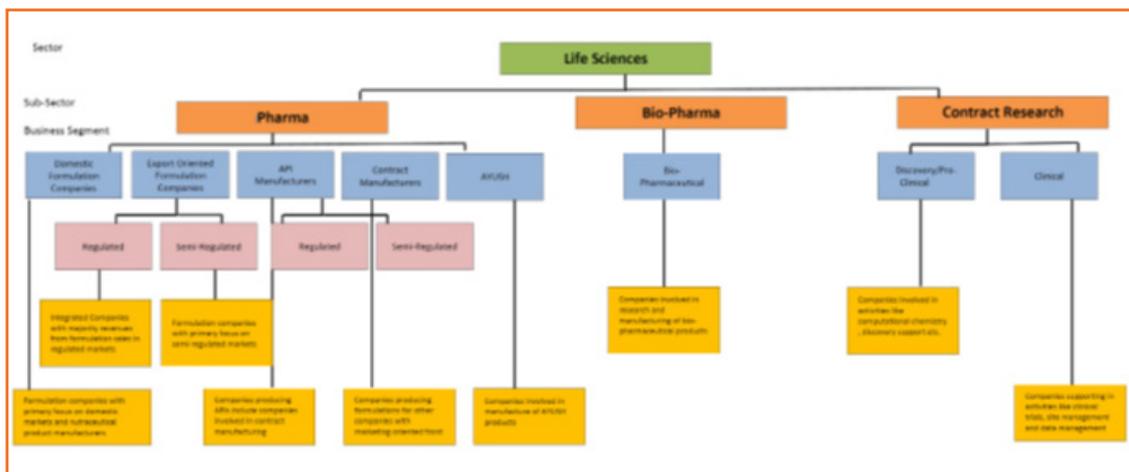
1.1.1.1 Pharmaceuticals

Domestic Formulation companies: Formulation is the process that combines different chemical substances including the active drug in order to produce a final medicinal product. Tablets, capsules, liquid form, lyophilized, etc. are a few different forms of Pharmaceutical Formulations. A large number of companies are involved in processing and supplying of different types of pharmaceutical medicines across the domestic sector.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 4 and explain the entire concept in detail to the learners.

1.1.1.2 Biopharmaceuticals

Biopharmaceutical business is engaged in discovering, developing and delivering innovative medicines to patients with serious diseases. Biopharmaceuticals are medical medication created victimization biotechnology. Biologics is composed of a mixture of sugars, proteins, or Nucleic acids or is also living cells or tissues. They're isolated from Natural sources—human, animal, or organism. Some leading Companies operating during this space embrace Biocon, Bodily Fluid Institute of India, Nostrum Biotec, Piramal care, GlaxoSmithKline.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 4-21 and explain the entire concept in detail to the learners.

Attributes of a Lab Technician

- An individual must be able to perform each essential duty satisfactorily to act as Lab Assistant.
- Consistent attendance is a job requirement.
- Minimum Educational Qualifications is 12th. However, Diploma/ B.Sc. (including chemistry specialization) may be preferred.
- 0-1 Years: Preferred with post-production facility; or equivalent combination of education and experience.
- Microsoft Office, Flexibility, Filing Records, Communicate Clearly with Team, Organization skills.
- Apart from these Lab Assistant must comply with the ability to read and write and comprehend simple instructions about reports, business dealings and procedure manuals.
- He/She may be able to respond to common inquiries or complaints from customers, regulatory agencies, or members of the business community.
- He must have the ability to perform the simple calculations such as discounts, interest, area, circumference, and volume.
- Ability to apply common sense understanding to carry out detailed but uninvolved written or oral instructions.
- He/She may be able to standardize situation.
- He/She should have a preference for the computer operation, nonlinear digitizing and professional camera operation.

Program Overview

This program will facilitate an overview of:

- Lab Sciences Industry
- Prepare and maintain work area
- Maintain health and safety at workplace
- Create a positive impression at the workplace

Field Visit

- Take the students to various reputed organizations and show them the various lab equipment.
- Give the students brief explanations of Clinical Trials

Notes for Facilitation

Before leaving for the field visit, provide instructions to the learners about the following:

- Objectives of the field visit- what are they expected to learn during the field visit
- Guidelines on appropriate behavior and appearance for the field visit
- Importance of taking notes
- Logistics of the visit- Location, time, duration, transport facilities, etc.

After the learner comes back from the visit, have a joint experience sharing session to discuss what they learnt.

Team Activity

The trainer can conduct a Quiz to test the understanding of the learners as well as revise the main points of the course.

- Divide the learners into 3 teams
- Ask each team to formulate at least 10 questions from the complete introductory module including
- Conduct a QUIZ contest between the 3 teams, where one team asks question on they made to the second team. The second team can earn a mutually agreed score if they get the answer correct. Then the second team asks question on from the third team and then the third team will ask a question from the first.
- They can have 5-7 rounds
- Any question that is not correctly answered will pass on to the next team
- All questions and answers will be approved by the trainer
- The trainer can also throw questions to the teams that are important but not covered by any of the teams
- The trainer can ask one student to keep the score on the board
- The winning team would get a standing ovation

Exercise ✎

1. Pharmaceutical industry develops, produces and markets drugs for use as ……..
   a. Medication
   b. Fertilizers
   c. Water Purification
   d. None of these

2. Which industry is engaged in developing and delivering innovative medicines to patients with serious diseases?
   a. Chemical
   b. Oil & Gas
   c. Biopharmaceutical
   d. All of these

3. Which is the Drug Regulatory Agency in India:
   a. Food and Drug Administration
   b. Health Products and Food Branch
   c. Therapeutic Goods Administration
   d. Central Drugs Standard Control Organization

4. Good Laboratories Practices work to …………
   a. Ensure Quality and Minimize risks
   b. Minimize Costs
   c. Improve skills to work in labs.
   d. None of these

2. Carry out Washing, Processing and Drying of the Glassware/ Plasticware

LFS/N0531

Key Learning Outcomes

At the end of the unit, you will be able to:

1. Perform cleaning of laboratory glassware
2. Prepare and dilute base baths
3. Follow cleaning procedures
4. Identify faults & their recovery.
5. Follow corrective actions to be taken against faults.
6. Identify leakage in the machineries and containers.
7. Explain preventive methods to avoid leakage.
8. Respond to emergency calls.
9. Identify the hazardous waste material.
10. Handle, storage, transportation of all hazardous material properly.
11. Handle damaged and expired labels.
12. Dispose of garnered waste.
13. Dispose of chemical, their reactions.
14. Explain housekeeping activities & managing emergency procedures.
15. Aware for layout design.
16. Describe basic signals used in factories or organizations in production line.
17. Paraphrase GMP/GCMP guidelines of pharmaceutical quality/Manufacturing standards.

UNIT 2.1: Manufacturing Process, Requirements and Functions

Unit Objectives

At the end of this unit you will be able to make the learners understand:

1. Typical manufacturing processing function
2. Knowledge of machinery used in production
3. Standard measuring units and methods of performing simple calculations
4. Quality control procedures
5. Housekeeping activities & managing emergency procedures
6. Basic signals used in factories or organizations in production line

Ask

The trainer should ask questions about the following topics:

- What do they know about systems of measurement?
- What do they know about Quality Control?
- What is the usage various equipment they know about?

Say

- Describe typical manufacturing processing function
- Describe the Principal Manufacturing Steps
- Explain standards measuring units simple calculations
- Describe Percentage
- Describe Ratio and Proportion
- List the systems of measurement

Do

Show the students basic Signals used in Organizations in Production Line

1. Danger Signs

2. Caution Signs

3. Safety Instruction Signs

4. Biological Hazard Signs

5. Pictograph

6. Biological Hazard Tags

7. Color Coding-Danger Tag

Elaborate

2.1.1 Orientation on Typical Manufacturing Processing Fun

The aim of producing method development for the drug substance is to ascertain an advert manufacturing method capable of systematically manufacturing drug substance of the supposed quality.

The quality of any substance in the drug is determined by considering its use in the medicine as well by due consideration of its chemical, physical, microbiological and biological characteristics, which may have impacted the development of the medicinal product.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 25 and explain the entire concept in detail to the learners.

2.1.1.1 The Principal Manufacturing Steps

1. Preparation of process intermediates

2. Introduction of functional groups

3. Coupling and esterification

4. Separation processes such as washing and stripping

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 25-26 and explain the entire concept in detail to the learners.

2.1.2 Standard Measuring Units Simple Calculations

A pharmaceutical calculation is the area of study that applies the basic principles of mathematics to the preparation and safe and effective use of pharmaceuticals.

In the bulk manufacturing of active pharmaceutical ingredients, products are measured in kilogram and kilolitre quantities.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 27 and explain the entire concept in detail to the learners.

2.1.2.1 Percentage

A percentage is an essential unit while doing pharmaceutical calculations. Life sciences professionals face it very often and utilize it as a convenient way of showing the concentration of an active or inactive material in a pharmaceutical/ biopharmaceutical preparation.

A percent may also be expressed as a ratio, represented as a common or decimal fraction. For example, 50% means 50 parts in 100 of the same kind and may be expressed as 50/100 or 0.50.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 27-28 and explain the entire concept in detail to the learners.

2.1.2.2 Ratio and Proportion

• Proportions are the most important method used in pharmaceutical/ biopharmaceutical calculation.

• This generally solves major dosage calculations.

• The strength or concentration of various drugs can also be expressed as a ratio.

• The ratio & proportion terms are used when there are two expressions which have direct co-relation.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 28 and explain the entire concept in detail to the learners.

Systems of Measurement

There are three systems of measurement that are commonly used in pharmaceutical calculations:

1. Avoirdupois - (household system):

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 28-30 and explain the entire concept in detail to the learners.

2.1.3 Quality Control

Under the Good Manufacturing Practice, Quality Control is concerned with sampling, specifications and testing, along with organization, documentation and release procedures. The above is MUST ensure that pharmaceutical/ biopharmaceutical material is not released for use, nor /intermediate/finished goods are released for sale or supply until their quality has been judged to be satisfactory by carrying out the necessary and relevant tests beforehand.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 30 and explain the entire concept in detail to the learners.*

2.1.3.1 Quality Control Procedures

The word 'Quality' refers to the characteristics of a product from both qualitative and quantitative point of view. It refers to the quality of process as well as the product itself. The word "Control'' implies a procedure by which decisions may be made regarding whether production is proceeding according to the plan and meeting the standards established previously.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 30-31 and explain the entire concept in detail to the learners.*

2.1.3.2 Quality Variation Control

The pharmaceutical industry is responsible to design, test and produce dosage form, which provides quality, purity, stability, safety, uniformity of composition and physiological availability to the patient.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 31-33 and explain the entire concept in detail to the learners..*

Demonstrate

Basic Signals Used in Organizations in Production Line

1. **Danger signs**: The DANGER header is used when there is a hazardous situation which has a high probability of death or severe injury.
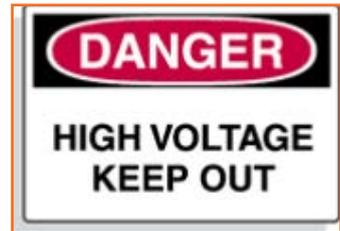
2. **Caution signs:** The CAUTION header is used to indicate a hazardous situation which may result in minor or moderate injury.

3. **Safety instruction signs:** General Safety signal should indicate general instructions relative to safe work practices, reminders of proper safety procedures, and the location of safety equipment.

4. **Biological hazard signs:** The biological hazard warning shall be used to signify the actual or potential presence of a biohazard and to identify equipment, containers, rooms, materials, experimental animals, or combinations thereof, which contain, or are contaminated with, viable hazardous agents.

5. **Pictograph:** Pictograph means a pictorial representation used to identify a hazardous condition or to convey a safety instruction.

6. **Biological Hazard Tags:** The symbol design for biological hazard tags shall conform to the design shown.

7. Color Coding-Danger Tag: DANGER" -- Red, or predominantly red, with lettering or symbols in a contrasting color.

8. **Color Coding-Caution Tag:** CAUTION" -- Yellow, or predominantly yellow, with lettering or symbols in a contrasting color.

9. **Color Coding-Warning Tag:** WARNING" -- Orange, or predominantly orange, with lettering or symbols in a contrasting color.

10. **Biological Hazard Tag:** BIOLOGICAL HAZARD - Fluorescent orange or orange-red, or predominantly so, with lettering or symbols in a contrasting color.

Explain

- Explain Quality Variation Control
- Explain GMP/CGMP Guidelines for Pharmaceutical Quality/Manufacturing Standards.

Activity

- Divide the students into two groups
- Ask both the group to prepare multiple choice questions from unit 2.1 (minimum 5 ques from each group)
- Each group will then ask the question from the other group members in front of the class
- Evaluate and give the feedback to students as per their explanations and performance

Elaborate

2.1.5 GMP/CGMP Guidelines of Pharmaceutical Quality/ Manufacturing Standards

Good Manufacturing Practice (GMP) is the part of quality assurance which ensures that medicinal products are consistently produced and controlled to the quality standards appropriate to their intended use and as required by the marketing authorization or product specification. The "C" in CGMP stands for "current," so technology must be able to adhere to this standard.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 35-36 and explain the entire concept in detail to the learners.

2.1.5.2 Premises

Premises must be located, designed, constructed, adapted and maintained to suit operations to be carried out. Their layout and design must aim to minimize the risk of errors and permit effective cleaning and maintenance in order to avoid cross-contamination, the buildup of dust or dirt and, in general, any adverse effect on the quality of products.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 36-38 and explain the entire concept in detail to the learners.

Premises

Say 💬

- Tell the students about Quality Control
- Tell the students about Quality Control procedures
- Tell the students about the required qualities of premises
- Tell the students about required equipment, material, personnel, production.

Exercise 📝

1. Which of these is NOT a principle manufacturing step:
   a. Preparation of process intermediates
   b. Introduction of functional groups
   c. Coupling and esterification
   d. Restarting and Updating

2. List the three types of Granulation process.

3. What will be the value of 5.555 grams (g) in milligrams (mg)?
   a. 55.55 mg
   b. 555.5 mg
   c. 5555 mg
   d. 55555 mg

4. In 'dipping' during manufacture of hard gelatin capsules, the dipping solution is maintained at a temperature of: …………
   a. 400°C
   b. 500°C
   c. 273°C
   d. 800°C

UNIT 2.2: Ensure Machine and Equipment Readiness

Unit Objectives

At the end of this unit you will be able to make the learners understand:

1. Production Schedule
2. Importance of job cards, memos or reports
3. Standard operating procedures
4. How to clean and lubricate equipment
5. Cleaning methods to remove the obstructions
6. Basic techniques of assembling the machines
7. How to eliminate ineffective equipment

Ask

The trainer should ask questions about the following topics:

• What do they know about Hierarchical Decision-Making in Manufacturing?
• What do they know about resource degradation and related decision-making?
• What do they know about Uncertainty and Observability?

Say

• Discuss the Hierarchical Decision-Making in manufacturing
• Discuss resource degradation and related decision-making
• Brief Uncertainty and Observability
• Discuss production scheduling activities

Do

• Explain Job cards, Memos and Reports
• Explain Standard Operating Procedures (SOPs)

Demonstrate

- **Hierarchical Decision-Making in Manufacturing**
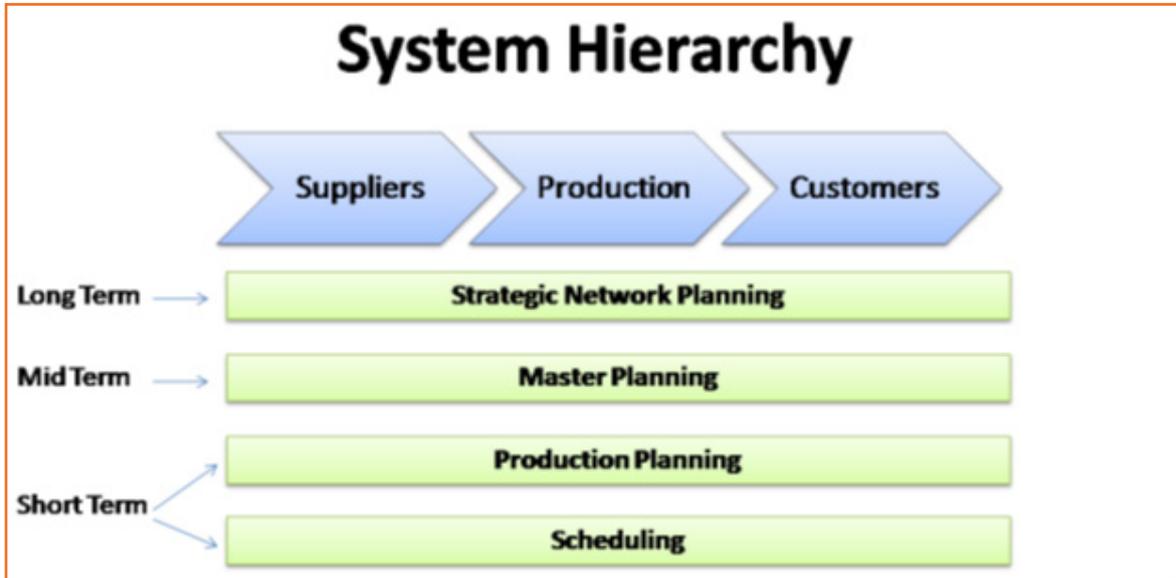
- **Resource Degradation and Related Decision-Making**
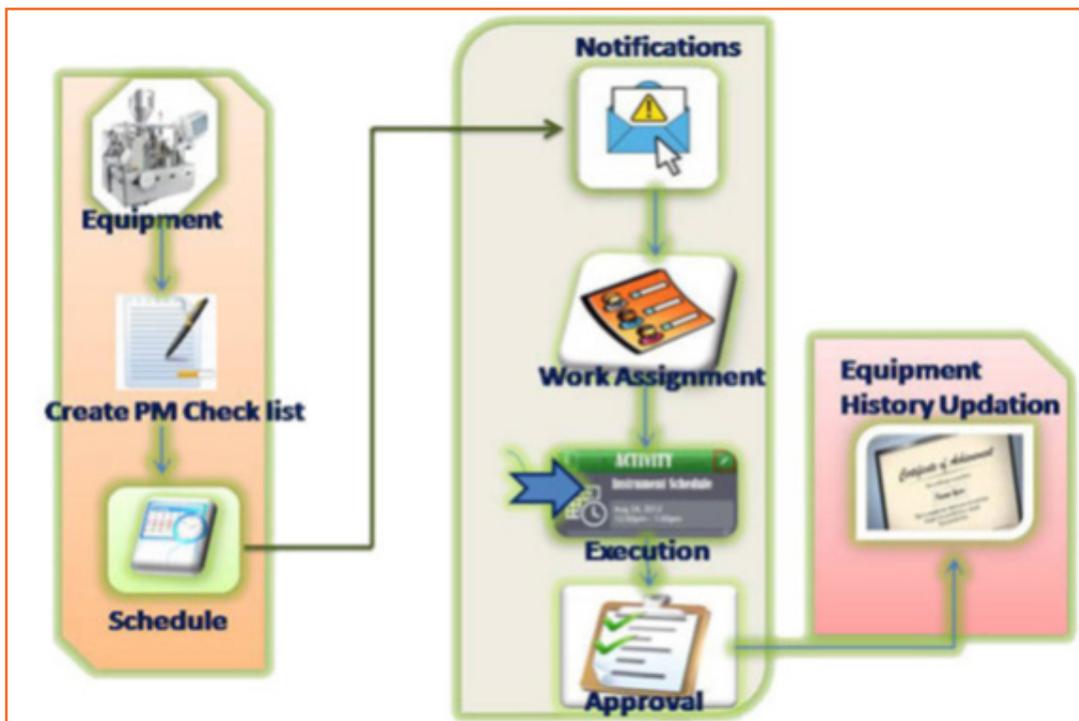
- **Production Scheduling Activities**
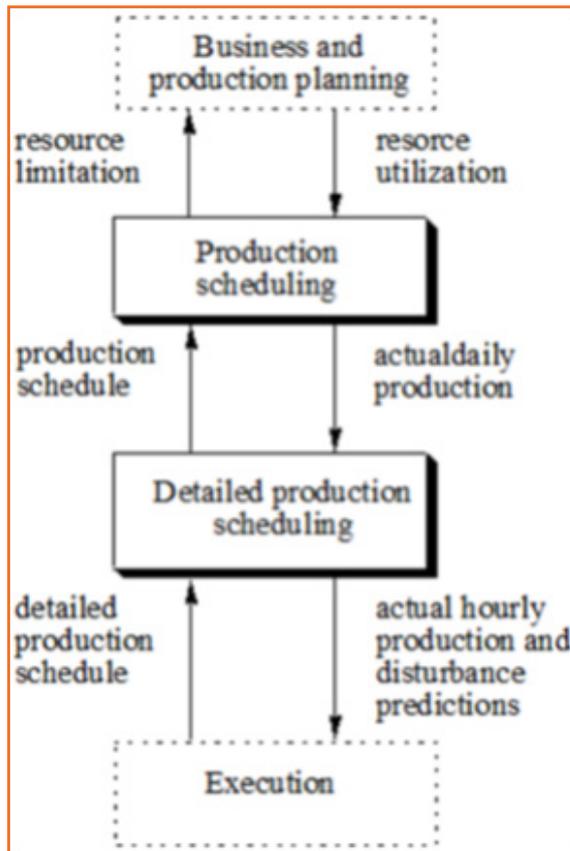
- **A typical SOP**

Ask
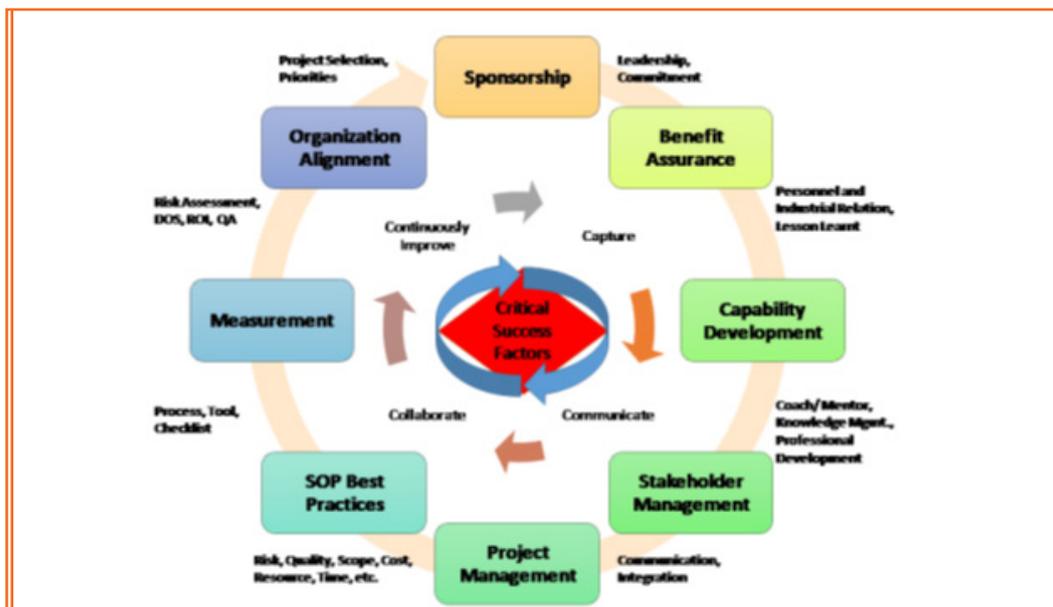
The trainer should ask the questions on following topics:

- Brief Production Scheduling Activities?
- Ask the students to make Job cards, Memos and Reports
- Brief Standard Operating Procedures (SOPs)

Elaborate

Mortality is the fundamental property of all matter. Various types of equipment used in laboratories are no exception. A machine, tool-group or piece of equipment, jointly referred to a resource, may deteriorate in many possible ways. Depending on the form of degradation, preventive or corrective measures are employed. The preventive measures such as machine maintenance, equipment/ process monitoring etc. help keep the equipment functioning smoothly while corrective measures such as replacement, repair etc. aim at minimizing disruptions in laboratory work due to resource failure.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 40 and explain the entire concept in detail to the learners.

2.2.2 Hierarchical Decision-Making in Manufacturing

In a typical manufacturing environment, a detailed planning process is adopted in order to ensure the best utilization of resources and maximize a firm's profitability. This is done in a hierarchical fashion due to differences in time-scales and the impact of decisions constituting the planning process. The decisions are broadly classified into three categories.

Strategic planning

At the strategic manufacturing planning level, the firm addresses issues that bear a long term impact. Such issues comprise of the total planned production capacity levels for the next two, three, or more years, the number of facilities it plans to operate, their locations, acquisition of manufacturing and storage capacities and procurement of resources etc. Decisions made
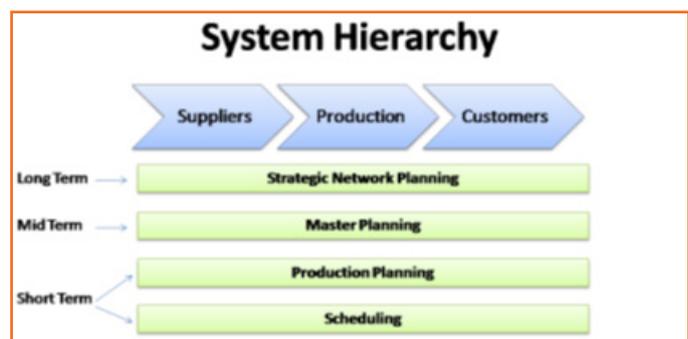
at the strategic production planning level place constraints on the next level of decision making, i.e., tactical planning level.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 40-41 and explain the entire concept in detail to the learners.

2.2.3 Resource Degradation and Related Decision-Making

Although resource is a general term, it is used in this work to specifically refer to a machine, equipment or tool group that facilitates lab work. In general, all laboratories equipment is prone to degradation with time. The features listed below determine their impact on decisions related to manufacturing.

Type of degradation

The wear and tear associated with the usage of resource affects its performance. The degradation is generally reflected in falling product yields in flow type equipment, poor characterization of the sample, low yield in the purification process etc. A complete failure or shutdown of the resource may also occur, leading to a halt in production. Yet another form of degradation is contamination of the resource to render it useless or even harmful for use. In general, the degradation is caused by numerous factors including usage, age, type of operation, environmental conditions etc.

Following are the types of degradation:

- Corrective or preventive action

- Time scales

- Degradation dynamics

- Upstream and downstream processes

- Possibility of detection

Corrective or preventive action: In view of the above mentioned deterioration, a preventive maintenance action needs to be taken to ensure equipment health. The frequency of the preventive action is largely dependent on the time scales associated with the degradation and trade-offs between the cost of maintenance and that of faulty products. Corrective action in the form of inspection and repair is required on the faulty outcomes. When the equipment breaks completely, it needs to be replaced or repaired. The downtime may encourage keeping spare equipment/resources. The choice of preventive and corrective actions is governed by industry, manufacturing process and costs involved with maintenance, repair and replacement.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 42-43 andexplain the entire concept in detail to the learners.

2.2.4 Uncertainty and Observability

At different levels of the decision-making hierarchy, uncertainties present themselves in various forms. The presence of uncertainty results in several possible outcomes and future system states, often having far-reaching effects. Depending on the level and form of the uncertainty, it becomes imperative to factor it into the decision-making. This is because extreme realizations of uncertainty may result in great loss of performance, operational infeasibility or both. Uncertainty in the realm of planning problems may be classified as below:

Parametric uncertainty

When the problem parameters have randomness associated with them, the uncertainty is external to the system. The exogenous information about the parameters becomes available after the relevant decisions have been made.

Decision Uncertainty

Often the outcome of a decision cannot be known with complete certainty because of the uncertainties associated with the process.

State uncertainty

When the elements of the state of the system are not known with complete certainty, a probability distribution is maintained over the state. In control applications, state uncertainty is generally attributed to measurement noise and an estimate of the state is maintained. In planning frameworks, the presence of this type of uncertainty is referred to as partial observability.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 43-51 and explain the entire concept in detail to the learners.

Exercise

1. What is a job card is used for?

2. What is a step-by-step instruction to achieve a predictable, standardized and desired result?

    a. Memo

    b. SOP

    c. Job Card

    d. Route Card

3. Write an SOP for boiling water, in not more than 4 steps:

    a. Step 1

    b. Step 2

    c. Step 3

    d. Step 5

4. State the records required to be maintained by Lab Technician.

UNIT 2.3: Washing, Processing and Drying of the Glassware and Plastic ware

Unit Objectives

At the end of this unit, you will be able to make the learners understand:

1. Learn to perform cleaning of laboratory glassware.
2. Learn to prepare and dilute base baths.
3. Carry out cleaning procedures.
4. Learn about Neutralization and disposal.

Ask

Ask the learners to share:

- Views on what they think should be done before starting the laboratory glassware cleaning.
- Views on what they think should be done before dilute base baths.
- Idea of how important it is to follow cleaning procedures.

Say

- State the process for laboratory glassware cleaning.
- State the process for base bath preparation.

Explain

- Neutralization and Disposal
- Dilute acid bath preparation

Activity

- Select students randomly after the training session and ask them to extempore the Neutralization and disposal in the class.

Elaborate

2.3.1 Laboratory Glassware Cleaning

For Laboratory glassware inertness, durability, transparency and simple, clean surface is critical for using them in Pharma and Bio pharma processes. Hence it is necessary that the lab glassware is cleaned appropriately so that there is no residual contaminants which could affect experimental results.

Any Solid deposits or residual layers of small ions, (like chloride ion), lime scales, solid organic material on glassware can be the most difficult to remove. So to clean the glassware, stronger methods are needed with a good solvent or surfactant for the material to be dissolved in.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 53-55 and explain the entire concept in detail to the learners.

2.3.2 Neutralization and Disposal

Neutralization of these aggressive chemical cleaning solutions is equally important as the amount of usage in the sector is very large. One is required to follow the Laboratory Safety/ Material Safety Guide provided in the Labs which enlists the methods of neutralization to be followed for each chemical cleaning solutions.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 56 and explain the entire concept in detail to the learners.

2.3.3 Base Bath Preparation

Initial Preparation:

- Suit up with appropriate protective equipment (lab coat, gloves, eye protection).
- Fill the bottom of a large, sturdy container with a thin layer of ice.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 56 and explain the entire concept in detail to the learners.

2.3.4 Dilute Acid Bath Preparation

Initial Preparation:

- Suit up with appropriate protective equipment (lab coat, gloves, eye protection).

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 57 and explain the entire concept in detail to the learners.

2.3.5 Cleaning Procedures

Cleaning

Wash laboratory glassware as soon as possible after the experimental use. If, on immediate basis, a full washing is not possible, soak the glassware. For the new glassware which are to be used in precision testing/ research, up on receiving them, soak them in a 1% HCL or HNO_3 solution before wash and then rinse in DI water and then dry in hot air oven. Ensure to use the soft brushes with a wooden or soft plastic handle. This will avoid abrasion.

Glassware Cleaners: For cleaning of the glassware lab technicians can use soap, detergent, or cleaning powder (with or without an abrasive). There are few specific glassware cleaners like Alconox®, Dural®,M&H®, Lux®, Tide® and Fab®. While applying these cleaners, use the hot water. The cleaning powder with a chemical property of mild abrasive action is more effective, where glassware is exceptionally dirty. During the cleaning to ensure that all parts of the glassware are well scrubbed lab technicians must have full set of brushes to fit various sizes of glassware.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 57-60 and explain the entire concept in detail to the learners.*

UNIT 2.4: Ensuring Safety Checks, Troubleshooting and Accuracy of Equipment

Unit Objectives 🎯

At the end of this unit you will be able to make the learners understand:

1. Various work specifications
2. Types of faults in the machinery
3. How to respond on emergency calls
4. How to identify leakage in the machineries and containers
5. Preventive methods to avoid leakage
6. Corrective actions to be taken against faults
7. How to identify faults & their recovery

Ask

Ask the learners to share:

- Their views on troubleshooting.
- Basic knowledge that they already know about Accuracy, work specification.

Say

- Discuss Troubleshooting: what is the source of the problem?
- Discuss about Accuracy

Explain

- Work specification
- Equipment Failure

Activity

- Ask the students to write their name on a slip.

- Collect the slips from the students fold them and put them on the table/box/bowl.

- Randomly pick two slips and announce the name of students (the first student will ask question from the second student related to unit 2.4 and the second student will answer).

- Evaluate and explain the concept as per the students' performance.

Elaborate

2.4.1 Introduction

Ensure that safety guards or safety devices on machines, equipment, etc., are not removed or modified in any way. At all times when using the machinery, equipment, etc., follow the manufacturer's recommended guidelines/procedures, or safety standards. Disabling a safety device is strictly prohibited. Unsafe conditions include slip, trip and fall hazards, electrical hazards, or any condition that can cause injury.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 61 and explain the entire concept in detail to the learners.

2.4.2 Troubleshooting: What is the Source of the Problem?

Troubleshooting is a form of problem solving, often applied to repair failed products or processes. It is a logical, systematic search for the source of a problem in order to solve it and make the product or process operational again. Troubleshooting is needed to identify the symptoms. Determining the foremost possible cause is a method of elimination—eliminating potential causes of a haul.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 62 and explain the entire concept in detail to the learners.

2.4.3 Accuracy

Accuracy refers to the deviation of a measurement from a standard or true value of the quantity being measured. We can talk about the accuracy of a single measurement. For example, if a pipette is set to dispense 100 micro liters but actually delivers 99 micro liters, the accuracy of that particular dispense is off (or the pipette is inaccurate) by -1 micro liter. Notice that in this case we know what happened during that last dispense (it was 1 micro liter too low), but we don't have much knowledge about what is likely to happen the next time this pipette is used.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 62 and explain the entire concept in detail to the learners.

2.4.4 Work Specification

Any work performed in the Life Sciences Sector is well structured and is SOP driven. These SOP defines every step which needs to be taken to complete the process/ machine operations. For every process to be completed the input and output both are well defined and pre-specified in the instructions, given at the time of assignment of the work.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 63 and explain the entire concept in detail to the learners.

2.4.5 Equipment Failure

"Equipment failure refers to any event in which any equipment cannot accomplish its intended purpose or task". It may also mean that the equipment stopped working, is not performing as desired, or is not meeting target expectations.

Examples of equipment failure include: engine failure or misfire, brake failure or stop controlling device failure, suspension of operation due to heat or other environmental conditions, failure due to defect in the electronics or circuits, power failure or fuel supply failure, etc.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 63-64 and explain the entire concept in detail to the learners.

2.4.6 The Need for Calibration

Measurement is vital in science, industry and commerce. Measurement is also performed extensively in our daily life. The following are some examples:

• Measurements for health care, such as measuring body temperature with a clinical thermometer, checking blood pressure and many other tests.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 64-65 and explain the entire concept in detail to the learners.

2.4.7 How to Check Accuracy of Equipment?

Any measurements taken by lab technicians are not completely accurate. Each measurement will have some number of significant figures and should also have some indication as to how much we can "trust" it/ or how much errored measure is this. To reliably interpret the test/experimental data, lab technicians need to have some understanding of the type of the "errors" associated with the taken measurements.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 65-66 and explain the entire concept in detail to the learners.

Exercise

1. What is troubleshooting?

2. Precision tells us how .... a group of measurements are to one another:

   a. Distant

   b. Close

   c. Equal

   d. None of these

3. State any two leak test methods.

4. Mention any two types of Equipment failures.

5. What are the two types of errors?

UNIT 2.5: Waste Disposal and Scrap Management

Unit Objectives 🎯

At the end of this unit you will be able to make the learners understand:

1. Methods of disposal of waste material.
2. Identify hazardous waste material.
3. How to handle, storage, transportation of all hazardous material properly.
4. How to identify chemical symbols and their meaning.
5. How to handle damaged and expired labels.
6. Waste management, reusing of non-conforming products.
7. Disposal of chemical, their reactions.

Ask 💬

Ask the learners few questions:

• What is waste disposal.

• What is Pharmaceutical waste management.

Say 💬

• Discuss waste disposal, listed wastes, and characteristics waste.

• Discuss Pharmaceutical Waste Management.

Explain

• Pharmaceutical Waste Treatment & Disposal.

Activity

- Ask students to write an article (150-200 words) on Waste Disposal and Scrap Management.

- Provide them instruction that the article should cover characteristic wastes and listed wastes.

- Grade the students as per their performance and if required explain, in detail the concept.

Elaborate

2.5.1 Waste Disposal

Hazardous wastes are divided into two categories:

1. Listed Wastes

2. Characteristic Wastes

Listed wastes appear on one of four lists of hazardous waste (F, K, P and U). Pharmaceuticals are found on two of these lists, the P and U lists which both contain commercial chemical products. Characteristic wastes are regulated because they exhibit certain hazardous properties – ignitability, corrosivity, reactivity and toxicity.

2.5.1.1 Listed Wastes

P- Listed Wastes

Pharmaceuticals are primarily chemicals and then therapeutic agents.P-listed wastes are commercial chemical merchandise that is categorized as acutely hazardous underneath Resource Conservation and Recovery Act in US Federal law, a binding for a lot of pharma manufactures producing for US market. One of the first criteria for as well as a drug on the P-list as acutely risky is an oral dose of 50 mg/kg (LD50) or less. LD50 is the quantity of a material, given all quickly, that causes the death of 50 of a group of test animals. Eight chemicals on the P-list are used as the pharmaceutical material.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 68-71 and explain the entire concept in detail to the learners.*

Exercise

1. What are the two kinds of hazardous wastes?

2. Name any two characteristics of hazardous waste?

3. Reactive wastes are unstable under "normal" conditions.

    a. True

    b. False

3. Help the Lab/QC Chemists/ Research Associates

Unit 3.1 - Basics of Pharmaceutical Science and Chemistry

Unit 3.2 - Sample Preparation, Preservation and Storage

Unit 3.3 - Knowledge about Analytical Equipment and Machinery

LFS/N0530

Key Learning Outcomes

At the end of the unit, you will be able to:

1. Follow basics of pharmaceutical science and chemistry.

2. Identify various chemical compounds.

3. Follow and understand IUPAC nomenclature of compounds.

4. Work in many different fields of science and medicine and work to detect, diagnose and treat issues and problems in experiments and manage scientific issue.

5. Operate, maintain, and install laboratory instruments as well as monitor experiments as they are performed within labs and Help in set up of the experiment.

6. Assist in recording observation and then calculating results before developing conclusions, and keep accurate and detailed logs of all of their work to ensure adherence to protocol and procedures.

7. Ensure the reagents, glassware, equipment is available at the right time.

8. Assist in laboratory tests in order to produce reliable and precise data to support scientific investigations.

9. Set up and operate standard laboratory equipment, for example centrifuges, titrators, pipetting machines and pH meters.

10. Maintain and repair equipment and laboratory apparatus as a part of routine activities.

11. Coordinate work in the laboratory to ensure efficient use is made of expensive pieces of equipment.

12. Carry out inspection and maintenance of equipment and materials and ensure the laboratory is wellstocked and resourced.

13. Follow the Material disposal procedure, understand importance of appropriate disposal of material and implications of not following the material disposal procedure.

14. Describe importance of identifying nonconforming products and storage of the same and follow the guidelines of GLP.

15. Evaluate Risk and impact of not following defined.

UNIT 3.1: Basics of Pharmaceutical Science and Chemistry

Unit Objectives 🎯

At the end of this unit you will be able to make the learners understand:

1. Basics of pharmaceutical science and chemistry
2. Various chemical compound
3. IUPAC nomenclature of compounds
4. Reagents, indicators and solutions

Ask

Ask the learners to share:

• Their knowledge about basics of pharmaceutical science and chemistry
• Their knowledge about IUPAC

Say

• Discuss Analytical Chemistry & its role.
• State IUPAC rules for Naming of Organic Compounds.

Demonstrate
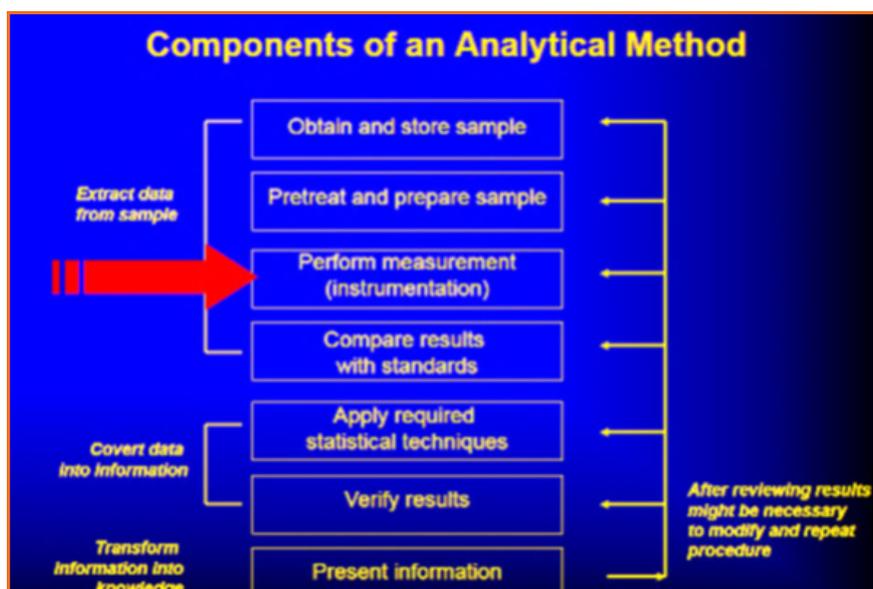
Elaborate

3.1.1 Introduction

Analytical chemistry cross sections all areas of chemistry. Analytical chemistry majorly includes the development of tools/ techniques and methods to measure the characteristic/chemical properties of substances/ molecules/ assays; and application of thus developed methods to identify the presence of the substance/ molecule (qualitative analysis) as well as the extent of presence (quantitative analysis) of biological species/ chemical molecules in a given condition.

Qualitative: provides information about the identity of an atomic, molecular or biomolecular species – Eg. Is there any lead in this sample?

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 75-78 and explain the entire concept in detail to the learners.

3.1.2 IUPAC Rules for Naming of Organic Compounds

Few basic names should be memorized in order to name organic compounds which is listed under naming alkanes these names are listed. In general, the base part of the name reflects the number of carbons in what we have assigned to be the parent chain.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 78-81 and explain the entire concept in detail to the learners.

3.1.3 Alkyl Halides

The halogen is treated as a substituent on an alkane chain. The halosubstituent is considered of equal rank with an alkyl substituent in the numbering of the parent chain. The halogens are represented as follows:

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 82 and explain the entire concept in detail to the learners.

3.1.4 Alcohols

Alcohols are named by replacing the suffix -ane with -anol. If there is more than one hydroxyl group (-OH), the suffix is expanded to include a prefix that indicates the number of hydroxyl groups present (-anediol, -anetriol, etc.). The position of the hydroxyl group(s) on the parent chain is(are) indicated by placing the number(s) corresponding to the location(s) on the parent chain directly in front of the base name (same as alkenes).

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 82 and explain the entire concept in detail to the learners.

3.1.5 Ethers

You are only expected to know how to name ethers by their common names. The two alkyl groups attached to the oxygen are put in alphabetical order with spaces between the names and they are followed by the word ether. The prefix di- is used if both alkyl groups are the same.

$$CH_3-CH_2-O-CH_2-CH_3 \qquad CH_3-O-CH_2-CH_3$$

diethyl ether   ethyl methyl ether

Ethers

3.1.6 Aldehydes

Aldehydes are named by replacing the suffix -ane with -anal. If there is more than one -CHO group, the suffix is expanded to include a prefix that indicates the number of -CHO groups present (-anedial - there should not be more than 2 of these groups on the parent chain as they must occur at the ends). It is not necessary to indicate the position of the -CHO group because this group will be at the end of the parent chain and its carbon is automatically assigned as C-1.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 83-84 and explain the entire concept in detail to the learners.

3.1.7 Ketones

Ketones are named by replacing the suffix -ane with -anone. If there is more than one carbonyl group (C=O), the suffix is expanded to include a prefix that indicates the number of carbonyl groups present (-anedione, -anetrione, etc.). The position of the carbonyl group(s) on the parent chain is(are) indicated by placing the number(s) corresponding to the location(s) on the parent chain directly in front of the base name (same as alkenes).

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 84 and explain the entire concept in detail to the learners.

3.1.8 Carboxylic Acid

Carboxylic acids are named by counting the number of carbons in the longest continuous chain including the carboxyl group and by replacing the suffix -ane of the corresponding alkane with -anoic acid. If there are two -COOH groups, the suffix is expanded to include a prefix that indicates the number of -COOH groups present (-anedioic acid - there should not be more than 2 of these groups on the parent chain as they must occur at the ends). It is not necessary to indicate the position of the -COOH group because this group will be at the end of the parent chain and its carbon is automatically assigned as C-1.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 85 and explain the entire concept in detail to the learners.

3.1.9 Ester

Systematic names of esters are based on the name of the corresponding carboxylic acid. Remember esters look like this: The alkyl group is named like a substituent using the -yl ending. This is followed by a space. The acyl portion of the name (what is left over) is named by replacing the -ic acid suffix of the corresponding carboxylic acid with -ate.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 86 and explain the entire concept in detail to the learners.*

3.1.10 Amines

You are only expected to know how to name amines by their common names. They are named like ethers, the alkyl (R) groups attached to the nitrogen are put in alphabetical order with no spaces between the names and these are followed by the word amine. The prefixes di- and tri- are used if two or three of the alkyl groups are the same.

Note: *Some books put spaces between the parts of the name, but we will not. Follow the examples.*

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 86 and explain the entire concept in detail to the learners.*

3.1.11 Organic Reactions Mechanism

Organic chemistry is the chemistry of carbon compounds. All organic compounds contain carbon. Organic reactions are chemical reactions involving organic compounds. The basic organic chemistry reaction types are addition reactions, elimination reactions, substitution reactions, pericyclic reactions, rearrangement reactions, photochemical reactions and redox reactions.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 87-88 and explain the entire concept in detail to the learners.*

3.1.12 Radical Reactions

Not as common as polar reactions

• Radicals react to complete electron octet of valence shell

  » A radical can break a bond in another molecule and abstract a partner with an electron, giving substitution in the original molecule

  » A radical can add to an alkene to give a new radical, causing an addition reaction
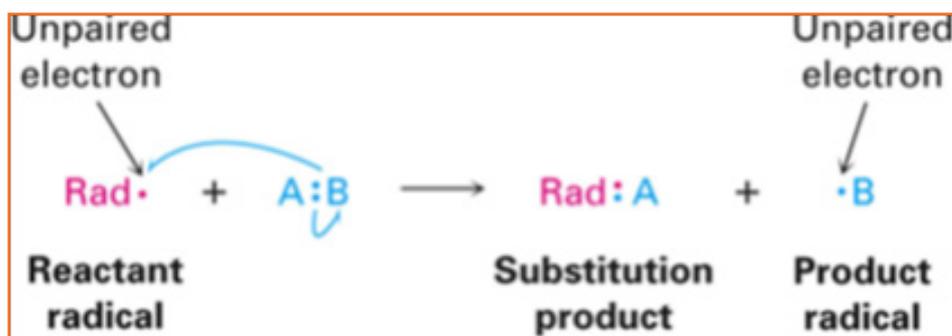
Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 88-89 and explain the entire concept in detail to the learners.

3.1.13 Polar Reactions

Polarization is a change in electron distribution as a response to change in electronic nature of the surroundings. Polarizability is the tendency to undergo polarization. Polar reactions occur between regions of high electron density and regions of low electron density.

• Molecules can contain local unsymmetrical electron distributions due to differences in electronegativities

• This causes a partial negative charge on an atom and a compensating partial positive charge on an adjacent atom

• The more electronegative atom has the greater electron density

• Elements such as O, F, N, Cl more electronegative than carbon

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 89-92 and explain the entire concept in detail to the learners.

3.1.14 Balancing Chemical Equations

A chemical equation is a written symbolic representation of a chemical reaction. The reactant chemical(s) are given on the left-hand side and the product chemical(s) on the right-hand side. The law of conservation of mass states that no atoms can be created or destroyed in a chemical reaction, so the number of atoms that are present in the reactants has to balance the number of atoms that are present in the products.

$$C_3H_8 + O \rightarrow H_2O + CO_2$$
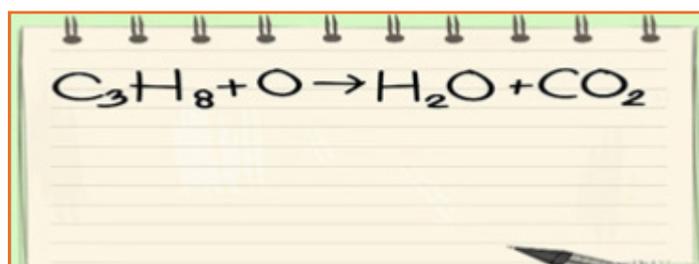
3.1.15 Balancing Chemical Equations

• Write down your given equation. For this example, you will use:

$$C_3H_8 + O_2 \rightarrow H_2O + CO_2$$

This reaction occurs when propane (C_3H_8) is burned in the presence of oxygen to produce water and carbon dioxide.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 93-94 and explain the entire concept in detail to the learners.*

3.1.16 Acid and Base Chemistry

Acids: The term acid was first used in the seventeenth century; it comes from the Latin root ac-, meaning "sharp", as in acetum, vinegar. Acids have long been recognized as a distinctive class of compounds whose aqueous solutions exhibit the following properties:

• A characteristic sour taste;

• Ability to change the color of litmus from blue to red;

• React with certain metals to produce gaseous H_2;

• React with bases to form a salt and water.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 94-97 and explain the entire concept in detail to the learners.*

3.1.17 Stoichiometric Calculations

In a balanced reaction, both sides of the equation have the same number of elements. The stoichiometric coefficient is the number written in front of atoms, ion and molecules in a chemical reaction to balance the number of each element on both the reactant and product sides of the equation. Though the stoichiometric coefficients can be fractions, whole numbers are frequently used and often preferred. This stoichiometric coefficient are useful since they establish the mole ratio between reactants and products. In the balanced equation:
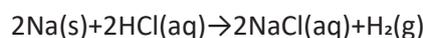
$$2Na(s)+2HCl(aq) \rightarrow 2NaCl(aq)+H_2(g)$$

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 97-101 and explain the entire concept in detail to the learners.*

UNIT 3.2: Sample Preparation, Presentation and Storage

Unit Objectives

At the end of this unit you will be able to make the learners understand:

1. Samples used in labs
2. How to prepare samples
3. How to process samples
4. Precautions while preparing samples
5. How to handle and calibrate equipment used in sampling
6. Utilize glassware appropriately

Ask

Ask the learners to share:

- Views on what they think about sampling

Say

- Describe sampling procedure
- State the process of sampling
- Discuss sampling operation and precautions

Explain

- Different class of glassware
- Explain handling and calibrating of glassware in laboratory

Activity

- Randomly pair the students.
- Ask them to identify sampling tools and two class of glassware (and its kind) by showing them one by one on the table.

Resources to be used

- Powder sampler
- Self-sealing sterile bags in case of microbiology sample
- Test tubes for Bacterial endotoxin test.
- Self-sealing sterile bags in case of microbiology sample
- Silica bags for moisture sensitive samples
- Tedlar bag for gas sampling
- Amber color screw cap bottles for liquid samples.
- Beaker
- Buchner funnel
- Burette
- Pipette
- Separating funnel
- Measuring cylinder
- Pycnometer
- Watch glass
- Gas syringe
- Petri dish
- Conical flask
- Round bottom flask
- Volumetric flask
- Desiccators

Elaborate

3.2.1 Introduction

Sampling is a process to collect a representative sample to evaluate the quality of material or product. In a life sciences facility, while working in the manufacturing/ the research laboratory, a sample of the intermediates/ finished products are received for analysis. Though in the manufacturing the sampling is done by either a manufacturing personnel or a QC personnel; in a research lab, the sampling is done by researcher him/herself or possible this task is assigned to a well-trained and skilled lab technician. Hence it is important for you to learn the sampling techniques.

Purpose of sampling

Sampling is required for various objectives to be achieved, such as characterisation, prequalification; acceptance of consignments; batch release testing; in-process control; special controls; inspection for customs clearance, deterioration or adulteration; or for obtaining a retention sample.

The tests to be applied to the sample may include:

• Verifying the identity of the sample including the substances in it

• Performing complete Pharmacopoeial or analogous testing; and

• Performing special or specific tests

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 102-103 and explain the entire concept in detail to the learners.

3.2.2 Sampling Process

Before staring the sampling, the analyst shall:

• Update the status board of sampling area to identify the raw material currently being sampled.

• Ensure the environmental conditions are within the limits and clearance of sampling area before starting of sampling activity.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 103-107 and explain the entire concept in detail to the learners.

3.2.3 Sampling Operation and Precautions

The contamination control station(CCS) employs a contamination reduction area (CRA) concept. The CRA is used to eliminate (or reduce to an acceptable level) contamination of personnel operating in the contaminated area. With the processing of personnel through the CCS, there is the possibility of a movement of contamination upwind through the CCS.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 107-108 and explain the entire concept in detail to the learners.

Demonstrate

3.2.4 Sampling Tools
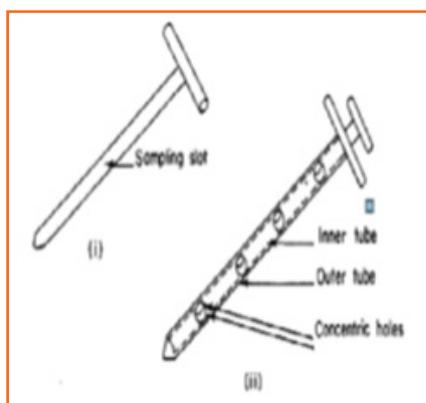
Powder sampler

Self-sealing sterile bags in case of microbiology sample

Self-sealing sterile bags in case of microbiology sample

Silica bags for moisture sensitive samples

Tedlar bag for gas sampling

Amber color screw cap bottles for liquid samples.

UNIT 3.3: Knowledge about Analytical Equipment and Machinery

Unit Objectives 🎯

At the end of this unit you will be able to make the learners understand:

1. Identification of analytical tools
2. How to perform inductively coupled plasma
3. How to perform Auto titration
4. Use of UV-Visible Spectrophotometer Detectors
5. How to handle pH meter

Ask

Ask the learners to share:

• Views on importance of FT-IR: A multipurpose analytical tool

Say

• Discuss FT-IR: A Multipurpose analytical tool
• Discuss about Inductively Coupled Plasma (ICP)

Explain

• Explain Auto-Titration
• UV-Visible Spectrophotometer Detectors
• Explain pH meter

Elaborate

3.3.1 FT-IR: A Multipurpose Analytical Tool

Molecules of a substance are always in a state of random motion. Total Internal energy of a molecule at any time is the sum of its kinetic and potential energy. Kinetic energy of a molecule is the sum of energy due to its vibrational, translational and rotational motion.

Infrared spectroscopy is basically the study of interactions between matter and electromagnetic waves in the infrared (IR) region. In this spectral region, the electromagnetic waves mainly couple with the molecular vibrations. In other words, a molecule may be excited to a higher vibrational state by absorbing IR radiation. The probability of a particular IR frequency being absorbed depends on the actual interaction between this frequency and the molecule.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 125-130 and explain the entire concept in detail to the learners.

3.3.2 Inductively Coupled Plasma (ICP)

Inductively Coupled Plasma (ICP) is an analytical technique used for the detection of the trace metals in environmental samples. The primary objective of ICP is to get elements to emit characteristic wavelength specific light which can then be measured. An ICP is a very high temperature excitation source (6000K to 10,000K) that efficiently desolvates, vaporises, exites, and ionizes atoms.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 130-134 and explain the entire concept in detail to the learners.

3.3.3 Auto-Titration

Titration is a most common and well established fundamental analytical technique which allows the quantitative determination of a specific substance (analyte) dissolved in a sample. The concentration of the analyte is determined by reacting it completely with a reagent (titrant) of known concentration. A well-known example is the titration of acetic acid (CH3COOH) in vinegar with sodium hydroxide, (NaOH). The titrant is added until the reaction is complete. In order to determine the end of the titration reaction has to be easily observable. This means that the reaction has to be monitored by appropriate techniques, e.g. potentiometry (potential measurement with a sensor) or with colour indicators. The measurement of the dispensed titrant volume allows the calculation of the analyte content based on the stoichiometry of the chemical reaction. The reaction involved in a titration must be fast, complete, unambiguous and observable. Titration has experienced a strong development from manual to semi-automation and finally complete automation. Potentiometric sensors replace the color indicators, so achieving higher preciseness and accuracy of results.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 135-147 and explain the entire concept in detail to the learners.

Activity

- Select students randomly after the training session and ask them to extempore the
  - » FT-IR: A Multipurpose Analytical Tool
  - » Inductively Coupled Plasma (ICP)
  - » Auto-Titration
  - » UV-Visible Spectrophotometer Detectors
  - » pH Meter

4. Carry out Reporting and Documentation

Key Learning Outcomes

At the end of the unit, you will be able to:

1. Read and interpret the graphs/ images of product and instructions given in tool/ equipment manual.

2. Describe basic understanding of machines control panel, material labels & safety signage.

3. Identify various coding system of the company.

4. Select documentation.

5. Record and communicate details of work done.

6. Follow daily report format and submission as per the instructions.

UNIT 4.1: Basic Communication at Workplace for Lab Assistant

Unit Objectives

At the end of this you will be able to make the learners understand:

1. How to read and interpret the graphs/images of product and instructions given in tool/equipment manual.
2. Basic understanding of machines control panel, material labels and safety signage.
3. Identification of various coding systems of the company.
4. How to select documentation.
5. How to record and communicate details of work done.
6. To follow daily report format and submission as per the instructions.

Ask

Ask the students to share their views on:

- Communication
- Types of communication

Say

- Provide knowledge on communication and types of communication.

Explain

- Explain communication and types of communication
- Discuss graph

Activity

- Conduct a group discussion in the classroom on topic "Most Effective Type of Communication"

Elaborate

4.1.1 Communication

"Communication is not a mysterious process. It takes place when the ideas from your mind are transferred to another's and arrive intact, complete, and coherent" The average employee receives about 190 communications a day by paper, voice mail, email, phone, etc.

4.1.1.2 Types of Communication

- Face to Face
- Meetings
- Written
- Electronic (Email)
- Verbal Communication

Face-to-Face Communication

Most people prefer to get information face-to-face, especially from their immediate supervisor. It Opens two-way communication and allows for immediate response to questions, misinterpretations, feedback, etc. It takes advantage of voice and body language. Use in-person communication when you have to share information that will affect the audience. It is used for performance evaluations & feedback and also used when the information being communicated needs immediate attention. Both parties should be prepared to answer questions directly and immediately.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 151-154 and explain the entire concept in detail to the learners.*

4.1.1.3 Graph

Graph can be defined as Two-dimensional drawing showing a relationship (usually between two set of numbers) by means of a line, curve, a series of bars, or other symbols.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 154-155 and explain the entire concept in detail to the learners.

4.1.1.4 Image

A digital image is a numeric representation (normally binary) of a two-dimensional image. Depending on whether the image resolution is fixed, it may be of vector or raster type. By itself, the term "digital image" usually refers to raster images or bitmap images.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 155-156 and explain the entire concept in detail to the learners.

4.1.2 Control Panel

It is a flat, often vertical, area where control or monitoring instruments are displayed. The control panels are now a common component to all the laboratory equipment. Equipment with older technology have control panels mostly equipped with push buttons and analog instruments, whereas the new technology instruments have touch screen panels used for monitoring and control purposes.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 156-157 and explain the entire concept in detail to the learners.

4.1.3 Hazardous Materials & Wastes

Knowledge of the proper procedures in the special handling, use, storage, and disposal of hazardous materials (hazmats) and waste is compulsory step at workplaces.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 158-163 and explain the entire concept in detail to the learners.

Exercise

1. Mention any two types of communication:

2. In communications and information processing, ………………….. is a system of rules to convert information—such as a letter, word, sound, image, or gesture—into another form or representation, sometimes shortened or secret, for communication through a channel or storage in a medium.

   a. Image

   b. Code

   c. Transponder

   d. Receiver

3. State 4 types of codes:

4. State 4 basic rules of record keeping:

UNIT 4.2: Recording, Reporting and Communication

Unit Objectives ⊚

At the end of this you will be able to make the learners understand:

1. SOP guidelines.

2. Understand about timely reporting and time management.

3. Understand about accident reporting policy.

4. Understand about impact of wrong practices and informing to supervisor.

5. How to identify and report incidents where SOP are not followed.

6. To report to supervisor for finding solutions.

7. Understand escalation matrix for decision making that is not defined in SOP.

8. How to read and write memos, job cards, reports etc. in pre decided format both Offline and online as per SOP.

9. How to record & communicate the work done in local language and English.

10. To take inputs from team and making proper report of that input.

11. To follow efficient and clear communication methods for reporting the incidents and communication with team.

Ask 🗨

Ask students to share their views on

- SOP guidelines
- Timely reporting and importance of time management

Say 💬

- Discuss accident reporting policy
- Discuss duties of the manager/supervisor
- Discuss duties of the safety officer
- Discuss time management

Explain

- State time management tips.
- Explain impact of wrong practices and informing to supervisor.
- Explain job hazard analysis.
- Explain about observation- Continual Surveillance.
- Explain about Adverse Event (AE), Incident.
- Explain reporting to supervisor for finding solutions.
- Explain reporting of workplace conflict to the supervisor.
- Escalation Matrix for Decision Making.
- Explain Memorandum, communication.
- State Efficient and Clear Communication Methods.

Activity

- Select students randomly after the training session and ask them to extempore on the importance of Timely Reporting and Time Management

Elaborate

4.2.1 Standard Operating Procedure (SOP) Guidelines

Standard operating procedure (SOP) guidelines an SOP is a procedure specific to your operation that describes the activities necessary to finish tasks in accordance with industry laws, provincial laws or maybe simply your own standards for running your business. Any document that is a "how to" falls into the class of procedures. during producing environment, the foremost obvious example of an SOP is that the step by step production line procedures used to create product as well train workers. An SOP, in fact, defines expected practices altogether businesses wherever quality standards exist. SOPs play a very important role in your small business. SOPs are policies, procedures and standards you need within the operations, marketing and administration disciplines inside your business to confirm success. These will create:

- Efficiencies, and thus profitableness.
- Consistency and liableness in production and service.
- Fewer errors in all areas.
- the simplest way to resolve conflicts between partners.
- A healthy and safe setting.
- Protection of employers in areas of potential liability and personnel matters.
- A roadmap for a way to resolve problems – and also the removal of feeling from troubleshooting allowing needed focus on finding the matter.

- a primary line of defense in any inspection, whether or not it be by a regulative body, a partner or potential partner, a client, or a firm conducting due diligence for a possible purchase value added to your business should you ever want to sell it.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 165-179 and explain the entire concept in detail to the learners.*

Exercise

1. Any incident must be:

   a. Immediately reported

   b. Not reported

   c. Reported after 1 week

   d. None of the above

2. What are the four categories in which tasks can be categorized?

3. Which of these is not a type of incident:

   a. Catastrophic

   b. Major

   c. Lukewarm

   d. Minor

4. State any two structured communication techniques.

UNIT 4.3: Introduction to Computer

Unit Objectives 🎯

At the end of this unit you will be able to make the learners understand:

1. Know what a computer is.
2. Recognise its various parts.
3. Understand the advantages of computer

Resources to be Used ⚙️

- Participant Manual
- Computer Lab

Do ✓

- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Acknowledge their responses and clear their doubts if any.
- Tell them they will learn about introduction to computer in this unit.

Say 💬

- Tell participants about the computer. Computer plays a very important role in our personal and professional lives. It has become an integral part of our lives.
- Tell them about important characteristics and application of a computer.

Notes for Facilitation 📝

- Summaries the main points of the unit.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ask them to answer the questions at the end of unit given in the participant's manual.
- Ensure that every participant answer all questions.

Activity

- Tell participants to demonstrate the parts of computer.

- Give them 15 minutes to prepare.

- Tell them each participant will be given 10 minute to demonstrate the same.

- Once presentations are complete appreciate the efforts made by the group and summarize the highlights of the activity.

Skill Practice	Time	Resources
1. Demonstration of Computer Computer Lab	4 Hours	• Participant Manual • Computer Lab

Elaborate

4.3.1 What are Computers

Computer is the greatest technology of all times. An innovative electronic device that takes raw data as input from the user and processes these data under the control of set of instructions which is called program, to give the result the output. The first fully electronic computers, announced in the 1940s, were huge machines. The computer of today's time is thousands of times faster and in any size you want. They can fit on your desk, on your lap, or even in your pocket. Computers work through an interface of hardware and software.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 181 and explain the entire concept in detail to the learners.

Exercise

1. When was the first fully electronic computer introduced?

    a. 1930s

    b. 1940s

    c. 1950s

    d. None of these

2. Give 3 examples of the hardware components of computers.

3. What is an Operating System (OS)?

4. Mention 3 advantages of computers.

UNIT 4.4: Basic Computer Knowledge

Unit Objectives ⊚

At the end of this unit you will be able to make the learners understand:

1. Know what is a computer.
2. Understand the web, e-mail and media.

Resources to be Used ⚙

- Participant Manual
- Computer Lab

Do ✓

- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Acknowledge their responses and clear their doubts if any.
- Tell them they will learn about the introduction to a computer in this unit.

Say 💬

Tell participants about the application of the computer in daily life. In the workplace, many people use computers to keep records, analyze data, do research, and manage projects. At home, you can use computers to find information, store pictures and music, track finances, play games, and communicate with others— and those are just a few of the possibilities. Tell them about important characteristics and application of a computer.

Now explain the concept of the web. The World Wide Web is an enormous warehouse of information. The web is the most prevalent part of the Internet, partly because it exhibits most information in a visually pleasing format.

Tell them about the application part of the web and introduce them to the use of different applications as email, instant messaging, picture music and movies with them.

Notes for Facilitation

- Summarise the main points of the unit.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ask them to answer the questions at the end of unit given in the participant's manual.
- Ensure that every participant answer all questions.

Suggestive questions to ask students:

- Ask students to explain the concept of Web.

Activity

- Tell participants to prepare an online report using web.
- Tell them they can choose any topic of their interest. Give them one hour to prepare.
- Tell them each participant will be given 10 minute to present their report to the class.
- Once presentations are complete appreciate the efforts made by the group and summarise the highlights of the activity.

Skill Practice	Time	Resources
1. Prepare Online report	4 Hours	• Participant Manual • Computer Lab with internet

Elaborate

4.4.1 The Web

The World Wide Web is an enormous warehouse of information. The web is the most prevalent part of the Internet, partly because it exhibits most information in a visually pleasing format. Headlines, text, and images can be combined on a single webpage—along with sounds and animation. A website is a collection of interconnected webpages. The web contains millions of websites and billions of webpages.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 183-184 and explain the entire concept in detail to the learners.

Exercise

1. Give 3 examples of how you can use computers?

2. All participants have to be on-line and in front of the computers for instant messaging to work?

   a. True

   b. False

UNIT 4.5: Components of Computer

Unit Objectives

At the end of this unit you will be able to make the learners understand:

1. Know what is pre housekeeping activities
2. Know the reasons for doing cleaning
3. Understand the principles of cleaning
4. Clean material, cleaning equipment and its maintenance

Resources to be Used

- Participant Manual
- Personal Protective Equipment (PPE)

Do

- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Acknowledge their responses and clear their doubts if any.
- Tell them they will learn about the components of the computer in this unit.

Say

- Tell them about different parts of the computer.
- Explain-them about different parts of motherboard in detail.

Notes for Facilitation

- Summarise the main points of the unit.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ask them to answer the questions at the end of unit given in the participant's manual.
- Ensure that every participant answer all questions.

Suggestive questions to ask students:

- Ask students to explain the concept of Web.

Activity

- Tell participants to prepare an online report using web.
- Tell them they can choose any topic of their interest. Give them one hour to prepare.
- Tell them each participant will be given 10 minute to present their report to the class.
- Once presentations are complete appreciate the efforts made by the group and summarise the highlights of the activity.

Skill Practice	Time	Resources
1. Prepare Online report	4 Hours	• Participant Manual • Computer Lab with internet

Elaborate

4.5.1 Motherboard

The motherboard is the main element inside the case. It is a large rectangular board with combined circuitry this connects the several parts of the computer as the CPU, RAM, Disk drives (CD, DVD, Hard disk or any others) as well as any other peripherals linked via the ports or the expansion slots. Components directly attached to the motherboard include the following.

The central processing unit (CPU)

The central processing unit (CPU) performs most of the calculations that allow a computer to function and is sometimes referred to as the "brain" of the computer. It is usually cooled by a heat sink and fan.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 186 and explain the entire concept in detail to the learners.

Exercise

1. What is the full form of CPU?
2. What does the Chip Set do?
3. What is the full form of BIOS?

Unit 4.6: Concept of Operating System

Unit Objectives

At the end of this unit you will be able to make the learners understand:

1. Understand the concept and good knowledge of the operating system.

Resources to be Used

- Participant Manual
- Computer System

Do

- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Acknowledge their responses and clear their doubts if any.
- Tell them they will learn about the introduction to a computer in this unit.

Say

- Tell them about windows XP. And explain that Windows XP lets you use different types of applications or software on the operating system.
- Familiarize them with the latest versions of Windows.

Demonstrate

- Explain tools and parts of an operating system with the participants.
- Show them all these parts practically on the computer system.
- Then explain add or delete the desktop shortcut from the desktop.
- Also, explain how to create a new folder.
- Tell all participants to create a folder on the computer.
- Then explain how to work on multiple windows.
- Now demonstrate the keyboard to the participants and tell them the correct way to use the keyboard.

Notes for Facilitation 📋

- Summarize the main points of the unit.

- Ask participants if they have any doubts. Encourage them to ask questions.

- Answer their queries satisfactorily.

- Ask them to answer the questions at the end of unit given in the participant's manual.

- Ensure that every participant answers all questions.

Suggestive questions to ask students:

- Ask students to define CPU.

- Ask students to explain tools & parts of an Operating system.

Activity ⚙️

- Give one newspaper cutting to each student and tell them they need to type the same.

- Tell them they have to use correct fingers on keyboard and make sure work is free from errors.

- Give them one hour for typing practice and ensure that each participant is typing.

- Finally, share some tips for correct typing and summarise the highlights of the activity.

Skill Practice	Time	Resources
1. Typing Practice	2 Hours	• News paper • Computer Systems

Elaborate ⚙️

4.6.1 Windows XP

Windows XP is a personal computer operating system created by Microsoft as part of the Windows NT family of operating systems. Basically it lets you use different types of applications or software on the operating system For example; it allows you to use a word processing application to write a letter and a spread-sheet application to track your financial information. Windows XP is a graphical user interface (GUI).

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 188-195 and explain the entire concept in detail to the learners.

Exercise

1. Where is the taskbar located on your screen?

2. System Tray is an area where you can access programs that are running in the background?

   a. True

   b. False

3. To view sound settings, right click on the sound icon in task bar and left click on open volume control or double click on the sound icon.

   a. True

   b. False

Unit 4.7: MS Word

Unit Objectives

At the end of this unit you will be able to make the learners understand:

1. Learn the concept and practice MS-Word.

Resources to be Used

- Participant Manual
- Computer System with MS Word

Do

- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Acknowledge their responses and clear their doubts if any.
- Tell them they will learn about the introduction to a computer in this unit.

Say

- Most people who use a computer daily use word processing skills. Word processing skills enable us to prepare text documents like letters, memos, and different correspondence.

Demonstrate

- Tell them to open MS Word in their respective systems.
- Show them how to create a word document in MS word software.
- Practically demonstrate how to perform different operations on MS Word document as:
  - » Saving a Document
  - » Change Font Type and Size
  - » Create Headers and Footers by Inserting Texts
  - » Indents and Spacing

- » Modifying Margins
- » Lists
- » Bulleted and Numbered Lists
- » Formatting Lists
- » Spelling and Grammar
- » Word Count
- » Different Editing Modes in Word
- » Inserting an Image and Table

Notes for Facilitation

- • Summarize the main points of the unit.
- • Ask participants if they have any doubts. Encourage them to ask questions.
- • Answer their queries satisfactorily.
- • Ask them to answer the questions at the end of unit given in the participant's manual.
- • Ensure that every participant answers all questions.

Trainers Note: As per student give the practical question of your choice to understand the student's outcome.

Activity

- • Give one news paper cutting to each student and tell them they need to type this in MS Word and perform different operations like saving documents, Saving a Document, Change Font Type and Size, Create Headers and Footers by Inserting Texts, Indents and Spacing.
- • Tell them they have to use correct fingers on key board and make sure work is free from errors.
- • Give them one hour for typing practice and ensure that each participant is typing.
- • Finally, share some tips for correct typing and summarize the highlights of the activity

Skill Practice	Time	Resources
1. Typing and Formatting – MS Word	3 Hours	• News paper • Computer Systems

Elaborate

4.7.1 Creating a Word Document

Once the document that has opened, type a short paragraph of why you are taking this mini- session. for example, are you new to Microsoft Word 2007 or are you up your software your skills? keep in mind to purposely misspell some words. Later in the session you'll use this paragraph to learn the way to spell check and use basic Word 2007 functions.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 197-205 and explain the entire concept in detail to the learners.*

Exercise

1. What are things that MS word helps us with?

2. Give any two features to proof read a document?

3. You can insert a page break anywhere in the document, or you can specify where Microsoft Word positions automatic page breaks.

    a. True

    b. False

Unit 4.8: MS PowerPoint

Unit Objectives

At the end of this unit you will be able to make the learners understand:

1. Practice and understand MS-PowerPoint.

Resources to be Used

- Participant Manual
- Computer System with MS Office

Do

- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Acknowledge their responses and clear their doubts if any.
- Tell them they will learn about introduction to computer in this unit.

Say

Tell them about the power point. PowerPoint is the presentation graphics software in the Microsoft Office suite. PowerPoint has predefined layouts, themes, and templates to create dynamic and professional presentations.

Demonstrate

- Tell them to open MS power-point in their respective systems.
- Show them how to create a power point in MS Power-point software.
- Practically demonstrate how to perform different operations on MS Power-point presentation as:
  - » Saving a PowerPoint
  - » Working with slides
  - » View tabs
  - » Animating text and Images

> » Removing Animations
>
> » Working with Charts

Notes for Facilitation 📋

- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ask them to answer the questions at the end of unit given in the participant's manual.
- Ensure that every participant answer all questions.

Suggestive Note: *As per student give practical question of your choice to understand the student's outcome.*

Activity ⚙️

- Tell participants they have to prepare a power-point presentation on MS PowerPoint Software.
- Tell them they need to perform following operations while working on this software, saving a PowerPoint, View tabs, animating text and Images and inserting Charts.
- Give them one and half hour to prepare the same.
- Finally share some tips for correct typing and summaries the highlights of the activity.

Skill Practice	Time	Resources
1. Presentation on MS PowerPoint	4 Hours	• Participant Manual • Computer Lab

Elaborate ⚙️

4.8.1 Opening PowerPoint

To open PowerPoint in Windows, click on the:

Step 1: Start button --> Programs --> Microsoft PowerPoint. OR

Step 2: Double-click on the PowerPoint icon on the desktop.

When PowerPoint is opened, by default a blank Title slide appears as the first slide in your new presentation. However, to change the layout of an open slide, click on the Layout button in the Home tab.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 207-214 and explain the entire concept in detail to the learners.*

Exercise

1. What does the office button in Power Point contain?

2. What is the Notes Panel?

    a. It's a new slide

    b. It's where you can enter notes on the slide

3. What are the three kinds of 'view buttons'?

    a. True

    b. False

UNIT 4.9: MS Excel

Unit Objectives ⊚

At the end of this unit you will be able to make the learners understand:

1. Practice MS-Excel.

Resources to be Used ⚙

*   Participant Manual
*   Computer System

Do ✓

*   Greet and welcome the participants to the next session of the program.
*   Before starting the session ask them do they have any doubts pertaining to the previous unit.
*   Acknowledge their responses and clear their doubts if any.
*   Tell them they will learn about the introduction to a computer in this unit.

Say 💬

*   MS surpass stands for - Microsoft Excel is one of the foremost common electronic spreadsheet applications supported by both "mac" and computer platforms. as with a paper spreadsheet, you'll be able to use excel to prepare your data into rows and columns and to perform mathematical calculations.
*   Discuss the application of Excel with the participants.

Demonstrate ⚜

*   Tell them to open MS Excel in their respective systems.
*   Show them how to create a spreadsheet in MS Excel software.
*   Practically demonstrate how to perform different operations on MS Excel as:
    *   » Zoom in and Zoom Out
    *   » Page Views
    *   » Change the default excel options
    *   » Add Command to the quick access tool bar

» Change the default excel options

» Cell Addresses

» Move Across a worksheet using key board

» Formatting

» Calculation and Analysis

» Change page orientation

» Aligning Text

Notes for Facilitation

- Summarise the main points of the unit.
- Ask participants if they have any doubts. Encourage them to ask questions.
- Answer their queries satisfactorily.
- Ask them to answer the questions at the end of unit given in the participant's manual.
- Ensure that every participant answers all questions.

Suggestive Note: *As per student give the practical question of your choice to understand the student's outcome.*

Activity

- Tell participants they have to prepare a spreadsheet on MS Excel Software.
- Share data of a class with the participants in which participants name, height, weight and age is given.
- Tell them they need to perform following operations while working on, Add Command to the quick access tool bar, Change the default excel options, Cell Addresses, Move Across a worksheet using key board, Formatting, Calculation and Analysis, Change page orientation
- Give them one and half hour to prepare the same.
- Finally share some tips for correct data typing and summarise the highlights of the activity

Skill Practice	Time	Resources
1. Preparing Spread Sheet on MS Excel	4 Hours	• Participant Manual • Computer Lab with MS Office Software

Elaborate

4.9.1 Exploring the Excel Environment

The tabbed Ribbon menu system is however you navigate through excel and access the assorted excel commands. If you have used previous versions of excel, the Ribbon system replaces the traditional menus. on top of the Ribbon in the upper-left corner is the Microsoft office Button. From here, you'll access important options like New, Save, Save As, and Print. By default, the short Access Toolbar is pinned next to the Microsoft office Button and includes commands like Undo and Redo.

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 216-231 and explain the entire concept in detail to the learners.*

Exercise

1. What are the things that MS Excel helps in?

2. How does one Zoom out in MS Excel?

3. The Save, Undo, and Redo commands appear by default in the Quick Access toolbar.

    a. True

    b. False

UNIT 4.10: Internet Concepts

Unit Objectives ⊙

At the end of this unit you will be able to make the learners understand:

1. Understand the internet concepts.

Resources to be Used ⚙

- Participant Manual
- Computer with Internet

Do ✓

- Greet and welcome the participants to the next session of the program.
- Before starting the session ask them do they have any doubts pertaining to the previous unit.
- Acknowledge their responses and clear their doubts if any.
- Tell them they will learn about the introduction to a computer in this unit.

Say 💬

- Tell them about the internet and its uses.
- Explain the concept of URL. The full form of URL is Uniform Resource Locator. It is the worldwide address of documents and other resources on the World Wide Web. The URL is divided into two different elements. The primary part of the URL is called a protocol identifier as it helps us distinguishing what protocol to use.
- Now tell them about different types of URLs.

Demonstrate ⚙

- Tell them now they will learn how to open an email account in outlook.
- Demonstrate the entire process to the participants. Make sure every student should open an e-mail account.
- Now tell them how to create and send an e-mail. Explain the entire steps in detail.
- Now show them how to read an email and reply email.
- Then explain attachment. The process of attaching a file or document.

Notes for Facilitation 📋

- Summarize the main points of the unit.

- Ask participants if they have any doubts. Encourage them to ask questions.

- Answer their queries satisfactorily.

- Ask them to answer the questions at the end of unit given in the participant's manual.

- Ensure that every participant answers all questions.

Suggestive Note:

- Ask students to explain what is Internet & what are its uses.

- Ask students to explain the concept of URL.

Activity ⚙️

- Tell participants they have sent emails to other participants with an attachment.

- Tell them first they need to create a word, excel or powerpoint. They can choose between any three of the formats.

- Give 2 hours for each participant for this entire activity.

- Once the activity is complete share some tips of e-mail etiquette with them and summarises the highlights of the activity.

Skill Practice	Time	Resources
1. Send e-mail with attachment	2 Hours	• Computers with Internet

Elaborate ☸️

4.10.1 URL Concepts

The full form of URL is Uniform Resource Locator. It is the worldwide address of documents and other resources on the World Wide Web. The URL is divided into two different elements. The primary part of the URL is called a protocol identifier as it helps us distinguishing what protocol to use. The second part of the URL is called a resource name and it indicates the IP address or the domain name where the resource is located.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 232-239 and explain the entire concept in detail to the learners.

Exercise

1. What is the full form of URL?

2. The second part of the URL is called a resource name and it indicates the IP address or the domain name where the resource is located.

   a. True

   b. False

3. Choose a URL example from the below list

   a. Messy

   b. Straight

   c. Constant

5. Maintain a Healthy, Safe and Secure Working Environment

LFS/N0101

Key Learning Outcomes

At the end of the unit, you will be able to:

1. Gain knowledge about safety including hazards, accidents, safety signs and signals.

2. Understand the Heinrich Pyramid.

3. Orient with Water Systems at Plant, Engineering related tools and techniques to operate the machine safely.

4. Understand the clean room classifications and requirements.

5. Relate with the clean room behaviour practices.

6. Use Material Data Safety Sheet and Process of Safety Analysis.

7. Orient with Fire Safety concepts, PPEs action to be taken in case of fire emergency at shop floor.

8. Perform Job Safety Analysis for various production machines/ equipment and provide the critical information to concerned team members.

9. Manage emergency procedures and apply first aid.

10. Learn about basic professional and communication skills necessary to perform work successfully.

UNIT 5.1: Safety including Hazards, Accidents, Safety Signs and Signals and Heinrich Pyramid

Unit Objectives 🎯

At the end of this unit you will be able to make the learners understand:

1. The Heinrich Pyramid.

2. Understand safety including hazards, accidents, safety signs and signals.

3. How to orient with Water Systems at Plant, Engineering related tools and techniques to operate the machine safely.

4. Understand the clean room classifications and requirements.

5. How to relate to the clean room behaviour practices.

6. The usage of Material Data Safety Sheet and Process of Safety Analysis.

7. Orient with Fire Safety concepts, PPEs action to be taken in case of fire emergency at shop floor.

8. How to perform Job Safety Analysis for various production machines/ equipment and provide the critical information to concerned team members.

9. How to manage emergency procedures and apply first aid.

10. Understand about basic professional and communication skills necessary to perform work successfully.

Ask 💬

Ask the listeners to share their views on:

• Views on the importance of safety, safety signs and Heinrich pyramid

• Probable hazards and accidents

Say 💬

• Discuss accident

• Describe accident prevention and the Domino theory

• Discuss Heinrich's Loss Control Triangle

• Discuss accident prevention and control

• Describe safety signs

Explain

- Explain Acoustic signals
- Explain usage of Hand signals
- Explain usage of verbal signals

Activity

- Ask the students to create a poster on various Safety signs.
- Each student should at least mention three safety signs.

Demonstrate

Safety Sign

	Prohibition signs	Mandatory signs	Warning signs	Information or safe condition signs
Shape:	Circular	Circular	Triangular	Square or rectangular
Colour:	Red borders and cross bar. Black symbols on white background	White symbol on blue background	Yellow background with black border and symbol	White symbols on green background
Meaning:	Shows what must NOT be done	Shows what must be done	Warns of hazard or danger	Indicates or gives information on safety provision
Example:	No smoking	Wear eye protection	Danger electric shock risk	First-aid facilities

Various signboards

Below warning signs are used to identify different types of harmful substances:

Symbol	Meaning	Symbol	Meaning
	E Explosive		O Oxidising
	F Highly flammable		T Toxic
	Xn Harmful		Xi Irritating
	C Corrosive		N Harmful for the environment

warning signs of harmful substances

Prohibition Signs

No access for unauthorised persons	Smoking and naked flames forbidden	No smoking
No access for pedestrians	Not drinkable	Do not extinguish with water
No access for industrial vehicles	Do not touch	

Prohibition Signs

Warning signs – General
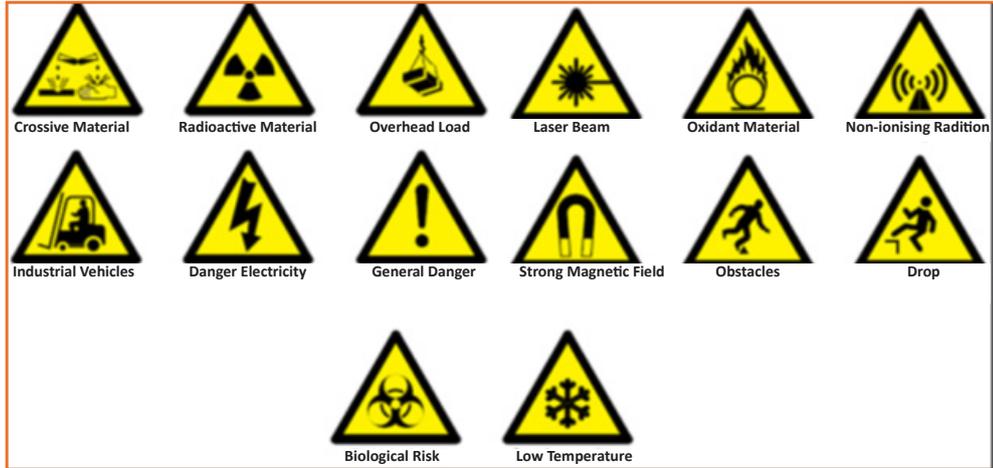
Warning signs -General

Mandatory Signs

Mandatory signs

Emergency Escape and First-Aid Signs
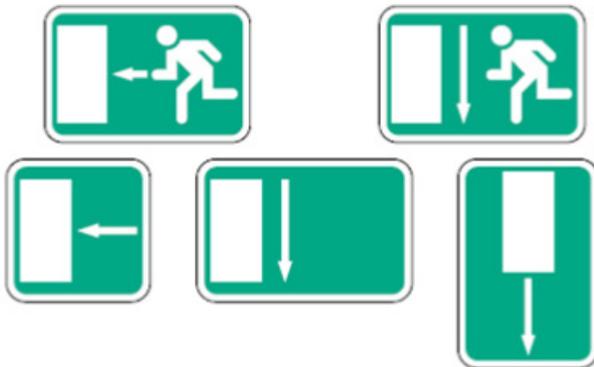
Emergency escape and first-aid signs

Tips

Share tips on:

- Using acoustic signals, hand signals, verbal signals.

Elaborate

5.1.1 What is an Accident?

The accident is defined as "An unplanned/undesired event giving rise to death, ill health, injury, damage or other losses to personnel or property".

5.1.2 Accident Prevention and the Domino Theory

The absence of an understanding of the causes of accidents makes it difficult to prevent accidents. Since a long time various attempts were made to populate a prediction theory of accident causation, but so far none has been accepted universally. Researchers from different fields of science and engineering have been trying to develop a theory of accident causation to help in identifying, isolate and ultimately remove the factors that contribute to or cause accidents.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 243-244 and explain the entire concept in detail to the learners.

5.1.3 Heinrich's Loss Control Triangle

Heinrich collected the data about workplace injuries from insurance claims as well as from workplaces (usually Supervisors). From analysis of the data, Heinrich proposed that for every major injury there are 29 minor injuries and 300 no-injury accidents. Most people working in health and safety would have seen some variation of this formula in presentations containing triangles with different coloured horizontal bands representing the different severity of injuries and the ratios between them.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 245-250 and explain the entire concept in detail to the learners.

Exercise

1. Which theory states that accidents result from a chain of sequential events, metaphorically like a line of dominoes falling over.

   a. Heinruch's Dominee Theory

   b. Hanrich's Domino Theory

   c. Heinrich's Domino Theory

   d. Patrich's Domino Theory

2. Heinrich's loss control triangle does not have following element

   a. Major Injury

   b. Minor Injuries

   c. Near Misses

   d. Traumatic Injuries

UNIT 5.2: Water Systems at Laboratory

Unit Objectives

At the end of this unit you will be able to make the learners understand:

1. Water system at plant
2. Contamination of water
3. Understand about Minerals

Ask

Ask the students to share their views on:

- Natural water
- Contamination of water

Say

- Provide information about minerals, micro-organisms.
- Discuss physical and chemical contaminants.
- State types of water used in Pharmaceutical process.

Explain

- Explain about water for Pharmaceutical use

Activity

- Divide students into two groups.
- Ask each group to create multiple choice question.
- The groups will ask questions to each other.
- Evaluate and explain the concept as per performance.

Elaborate

5.2.1 Natural Water

Water is available on earth at the various source. Water has unique chemical properties, which makes it a "universal solvent", there is no pure water in nature. A wide variety of organic compounds, minerals, metals may be present dissolved in water.

Raw water that is available in nature contains impurities:

- There is no pure water in nature, as it can contain up to 90% possible unacceptable contaminants.
- Contaminant groups include:
  - » Inorganic compounds
  - » Organic compounds
  - » Solids
  - » Gases
  - » Micro-organisms

5.2.2 Contaminants of Water

There a number of water contaminants. Some of the common contaminants are:

- Minerals
- Microbes
- Physical and chemical contaminants

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 252-255 and explain the entire concept in detail to the learners.

Exercise

1. What makes Water a universal solvent?
2. Name two types of Water used in Pharmaceutical Processes?

UNIT 5.3: Clean Room: Classifications, Requirements and Behaviour Practices

Unit Objectives 🎯

At the end of this unit you will be able to make the learners understand:

1. Understand clean room and its classifications.
2. How to identify the personal behaviour of persons working in clean room.

Ask

Ask the students to share their views on:

- Clean room
- Classification of Clean Room

Say

- Discuss contamination transfer in clean rooms.
- Discuss clean room air filtration.

Explain

- Explain the selection criteria for cleanroom staff.
- Explain personal behaviour of persons working in clean room.
- List do's and don'ts.

Elaborate ⚙

5.3.1 Classification of Clean Room

A cleanroom is an environment, typically used in manufacturing or scientific research in an organization. It is maintained to have a low level of environmental pollutants such as dust, airborne microbes, aerosol particles, and chemical vapours and control other environmental parameters such as temperature, humidity and pressure. Clean room is equipped with a High Efficiency Particulate Air (HEPA) filter that is used to trap particles that are 0.3 micron and larger in size. All of the air delivered to a cleanroom passes through HEPA filters, and in some cases where stringent cleanliness performance is necessary, Ultra Low Particulate Air (ULPA) filters are used.

Cleanrooms are classified according to the number and size of particles permitted per volume of air

As per ISO — the International Standards Organization, the cleanrooms are ranked between ISO Class 1 (the cleanest) through ISO Class 9. The lower the ISO rating, the cleaner the environment. Measurement of contamination is done in "parts- per-cubic -meter." An ISO Class 6 cleanroom, for example, is rated at 35,200 parts per cubic meter.

Cleanroom

Class	maximum particles/m3						FED STD 209E equivalent
	>=0.1 µm	>=0.2 µm	>=0.3 µm	>=0.5 µm	>=1 µm	>=5 µm	
ISO 1	10	2					
ISO 2	100	24	10	4			
ISO 3	1,000	237	102	35	8		Class 1
ISO 4	10,000	2,370	1,020	352	83		Class 10
ISO 5	100,000	23,700	10,200	3,520	832	29	Class 100
ISO 6	1,000,000	237,000	102,000	35,200	8,320	293	Class 1,000
ISO 7				352,000	83,200	2,930	Class 10,000
ISO 8				3,520,000	832,000	29,300	Class 100,000
ISO 9				35,200,000	8,320,000	293,000	Room Air

Table: Clean Room Specifications

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 258-260 and explain the entire concept in detail to the learners.*

Exercise

1. What is the full form of HEPA?
2. Name any two contamination carriers in Clean Rooms?
3. Name any two selection criteria for clean room?
4. Name any one Do or Don'ts

UNIT 5.4: Process of Safety Analysis

Unit Objectives

At the end of this unit you will be able to make the learners understand:

1. Process of safety analysis
2. How to prepare material safety data sheet

Ask

Ask the students to share their views on:

- Material safety data sheet
- Process safety analysis

Say

- Describe material safety data sheet.
- Discuss process safety analysis.
- Explain fire safety and emergency preparedness.
- List classes of fire.

Explain

- Fire extinguishers
- Fire prevention
- List firefighting rules
- Personal protective equipment (PPE's)

Demonstrate
The Fire Triangle

Fire cannot occur without an ignition source, fuel and an oxidizing atmosphere (usually air), the three elements that comprise what is called the "fire triangle".
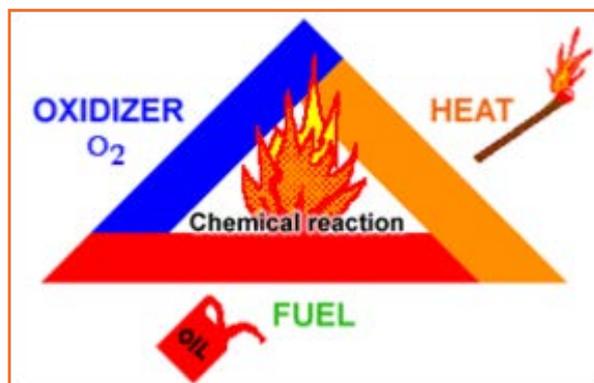
The Fire Triangle

Elaborate

5.4.1 Material Safety Data Sheet

Material Safety Data Sheet (MSDS) is a document that provides detailed hazard, precautionary and emergency information of the product. Chemical manufacturers provide the MSDS to purchasing parties. Unless it is written on the purchase order, the MSDS is sent to the concerned user.

MSDS provides a variety of information to the chemical user. The American National Standards Institute (ANSI) recommends that MSDS have 16 sections. A description of each of these sections is outlined below.

Section 1 – Chemical Product and Company Identification

Section 1 identifies the product and its synonyms. Chemical and MSDS supplier name is also mentioned. It may also give the chemical abstracts service-identifying number. The manufacturer's name is required to be listed on the MSDS by OSHA.

Section 2 – Composition or Ingredients

It lists hazardous components as specified by the Occupational Safety and Health Act (OSHA) in their relative concentrations. Often significant non-hazardous components are listed. It may also include other information related to the chemicals such as personal exposure limits and time-weighted averages.

Section 3 - Hazards Identification and Emergency Procedures Overview

It gives an overview of emergency procedures and lists information on the potential adverse human health effects and symptoms that may result from exposure to the material.

Section 4 - First Aid Measures

It provides instructions to be taken if accidental exposure requires immediate treatment. It may also include instructions to medical professionals. Always provides an MSDS to the emergency medical care provider.

Section 5 - Fire fighting measures

It provides basic fire fighting guidance, including appropriate extinguishing media. It describes other fire and explosive properties useful for avoiding and fighting fires involving the material, such as flash point or explosive limits.

Section 6 - Accidental release measures

It describes actions to be taken to minimize the adverse effects of an accidental spill, leak or release of the material.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 261-263 and explain the entire concept in detail to the learners.

5.4.2 Process Safety Analysis

Process Safety Analysis or Process Hazard Analysis is a systematic analysis of a specific job in a specific location to identify the potential hazards and determine the controls. This is a written document containing the potential hazards, consequences and their control. After completing this, the process/task can be planned in such a way to prevent the potential incident or to reduce the impact of hazard.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 263-268 and explain the entire concept in detail to the learners.

Exercise

1. What is the full form of MSDS?

2. The manufacturer's name is required to be listed on the MSDS by OSHA.

   a. True

   b. False

3. What is the full form of OSHA?

UNIT 5.5: Job Safety Analysis (JSA)

Unit Objectives 🎯

At the end of this unit you will be able to make the learners understand:

1. Job safety analysis
2. Hazard types
3. How to conduct the analysis

Ask

Ask the students to share their views on:

- Job safety analysis

Say

- Describe job safety analysis
- Discuss hazard types

Explain

- Explain how to conduct the analysis

Elaborate

5.5.1 Job Safety Analysis (JSA)

A job safety analysis (JSA) is a procedure to identify the potential hazards in each step of jab and to recommend a written safest way to do that job.

Job Safety Analysis (JSA) is a procedure to make a job safe by:

- Identifying the hazards or potential accidents associated with each step of the job.
- Developing a solution for each hazard that will eliminate, reduce or control the exposure.
- Provide a step-by-step, written procedure for jobs.

JSA

Trainers note: *These are the supporting content to the participant manual, please adhere to the participant manual, page no. 270-271 and explain the entire concept in detail to the learners.*

Exercise

1. What is the full form JSA?
2. Name anyone hazard to be considered when completing a JSA?

UNIT 5.6: Managing Emergency Procedures and First Aid

Unit Objectives ⊚

At the end of this unit you will be able to make the learners understand:

1. How to identify types of emergencies?
2. To follow the emergency procedures and perform first aid.

Ask

Ask the students to share their views on:

• On managing various Emergencies

Say

• Describe emergency response in case of fire.
• Discuss emergency response in case of major Gas Leakage.

Explain

• Explain emergency response in case of chemical spill.
• Explain response in case of Tremor/Earthquake.
• State procedure to be followed in case of Riot, Bomb threat.
• Explain weather alerts.
• First aid and first aid boxes.

Activity

Team Activity

The trainer can conduct a Quiz to test the understanding of the learners as well as revise the main points of the course.

• Divide the learners into 3 teams
• Ask each team to formulate at least 10 questions from the complete introductory module including

Conduct a QUIZ contest between the 3 teams, where one team asks ques on they made to the second team. The second team can earn a mutually agreed score if they get the answer correct. Then the second team asks ques on from the third team and then the third team will ask question from the first.

- They can have 5-7 rounds
- Any question that is not correctly answered will pass on to the next team
- All questions and answers will be approved by the trainer
- The trainer can also throw questions to the teams that are important but not covered by any of the teams
- The trainer can ask one student to keep the score on the board

The winning team would get a standing ovation.

Elaborate

"Emergency" means a situation leading to circumstances or set of circumstances in which there is a danger to the life of persons or which could result in major fire or explosion or any major environmental releases causing pollution to the works and outside environment. To mitigate and control such situation, Emergency Preparedness and Response Plan is formulated in industries considering all the possible hazards in the Premises.

The emergency procedures outlined are appropriate for round the clock coverage including holidays. The plan is designed in such a manner that it would avoid any confusion, panic among the lab personnel in case of emergency.

Emergency situation can arise due to the following:

- Fire
- Explosion
- Major gas leakage from cylinders / pipelines
- Major HSD / Solvent / Chemical spill
- Earthquake
- Riots
- Bomb threats
- Fatal /Major accident

5.6.1 Emergency Response in Case of Fire

In the event of a fire, immediate evacuation is essential. Everyone must be aware about the emergency exits and routes. On the way out of the building remember these safety precautions:

- Never enter a room containing a fire.
- Never enter a room that is smoke filled.
- Never enter a room in which the top half of the door is hot to the touch.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 272-277 and explain the entire concept in detail to the learners.

Exercise

1. Name any two reasons why an emergency can arise?

2. Emergency response in case of fire

    a. Enter a room filled with smoke

    b. Never enter a room that is smoke-filled

3. Do not apply any ointments, salves, or sprays on Thermal burns

    a. True

    b. False

6. Pre-Housekeeping Activities for Lab Assistant

Unit 6.1 - Material, Chemicals and Equipment and Cleaning Procedures

Unit 6.2 - Methodology for Storage Area Inspection

Unit 6.3 - Post Housekeeping Activities for a Lab Assistant

Key Learning Outcomes

At the end of the unit, you will be able to:

1. Importance of housekeeping/ hygiene maintenance / Cleanliness at workplace.
2. Learning of level of hygiene.
3. Identification of dirty areas to be cleaned.
4. Material required for cleaning.
5. Efficient cleaning taking into account of risk, time.
6. Types of stains / soiling and their solutions.
7. Maintenance of cleaning equipment and supplies.
8. Planning the sequence for cleaning the area to avoid re-soiling clean areas.
9. Various signs used in while cleaning the area of cleanliness.
10. Various coding system in organization used during housekeeping.
11. Methodology for storage area inspection.
12. Optimum utilization of time & resources.

UNIT 6.1: Material, Chemical and Equipment and Cleaning Procedures

Unit Objectives

At the end of this unit you will be able to make the learners understand:

1. How to identify different material, chemicals and equipment and their cleaning procedure.

Ask

Ask the students to share views on:

- Housekeeping activities
- Managing emergency procedures

Say

- Provide knowledge of different materials and chemicals.
- Provide knowledge of equipment maintenance and their cleaning procedure.

Explain

- Explain the 5S System

Activity

- Randomly select students and ask them to ask a question to his/her partner regarding housekeeping activities and managing emergency procedure.

Elaborate

6.1.1 Introduction

What does it mean to be clean?

Insufficient or inadequate cleaning can have various consequences. From a health point of view, an absence of good cleaning can lead to contaminated drugs with a risk for patients, but also for the workers within the pharmaceutical company due to a lack of correct protection. The ecological problems can be summarized in pollution risks. The regulatory issues are linked with warnings from agencies up to possible authorization withdrawn. Economic problems start with a diminution of production and stock shortage which imply increased internal costs and financial loss. In addition, image problems for a company exist when patients must return medications to the pharmacy as in the case of batch recall. Agencies can increase inspections due to a lack in confidence, and financial institutions could rate a company as a higher risk due to profit diminution and poor predictability of the potential benefits.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 281 and explain the entire concept in detail to the learners.

6.1.2 Housekeeping Activities & Managing Emergency Procedures

An important factor of quality assurance is good housekeeping. Manufacturing and other operational areas need regular cleaning and disinfection, in order to remove spillage powders, dust and dirt. Cleaning ensures avoidance of cross contamination and to maintain working environment tidy and safe. The main objectives of housekeeping activities are:

* To facilitate smooth movement of goods and personnel.

* To prevent contamination of stored material.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 281-291 and explain the entire concept in detail to the learners.

Exercise

1. Corrosive substance is a substance that causes visible destruction or permanent changes in human skin tissue at the site of contact.

    a. True

    b. False

2. Mention any two things that maintenance records should include.

3. What is Caliper?

UNIT 6.2: Methodology for Storage Area Inspection

Unit Objectives 🎯

At the end of this unit you will be able to make the learners understand:

1. Methodology for storage area inspection

Ask

Ask the students to share their view on:

• Storage area inspection

Say

• Storage area guidelines
• Methods required to clean surfaces

Explain

• Materials required to clean the equipment
• Validation of cleaning
• Waste disposal

Activity

• Select students randomly after the training session and ask them to extempore on storage area guidelines.

Elaborate

6.2.1 Storage Area Guidelines

The Lab technicians are responsible to store the chemicals, reagents and spares in the laboratory store, a defined place for storing the supplies as well as storing the laboratory waste in the waste storage area from where the waste treatment units take the waste for recycling or safe disposal. As per the Good Laboratory Practices and Good Storage Practices, following guidelines are important to be fulfilled for maintain a storage area.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 293-302 and explain the entire concept in detail to the learners.

Exercise

1. There should be at least 15 m distance between the storage sheds.

    a. True

    b. False

2. In case of spills / leaks - dry adsorbents or cotton should be used for cleaning instead of water.

    a. True

    b. False

3. What are the two Analytical Techniques?

UNIT 6.3: Post Housekeeping Activities for a Lab Assistant

Unit Objectives 🎯

At the end of this unit you will be able to make the learners understand:

1. Inspect cleaned area
2. Inspect the oily substances at the floor.
3. Check the treated surface after cleaning.
4. Explain procedure of submission of daily reports to the appropriate authority.
5. Store PPE after use properly.
6. Maintain a record of housekeeping Weekly.
7. Follow the methods to improve current activities based on their experience.

Ask

Ask the students to share their views on:

- Importance of housekeeping practices
- Importance of reducing risks of poor housekeeping

Say 💬

- Discuss housekeeping practices
- Describe identification of slip and trip hazards
- Discuss how to select control measures
- Discuss how to control the risks of slipping

Explain

- Explain how to control risks of tripping
- Explain the responsibilities of Lab Assistant

Elaborate

6.3.1 Poor Housekeeping Practices

Poor housekeeping practices such as keeping lab untidy, unorganized, inadequate cleaning of laboratory/store and uncleaned equipment lead to chemical hazards and microbiological growth that could contaminate either the sample or the raw material. Poor housekeeping is also against the fundamental of healthy and safe working environment. Hence to ensure safe, healthy and quality work environment and to secure the sample/ products from contamination it is MUST to follow the Good Housekeeping Practices (GHP). The GHP also reflect good management practices and makes staff feel proud in the workplace, as the organization cares about safety. Poor housekeeping practices may cause accidents in the lab area.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 303 and explain the entire concept in detail to the learners.

Elaborate

6.3.1.1 Reducing Risks of Poor Housekeeping

Good housekeeping practices are critical to achieve the workplace safety. The strong supervision is equally important here. This includes following a systematic approach to recognize all the risks associated with poor housekeeping and implement the control measures to eliminate/ reduce those risks. This includes:

Identifying cleaning and maintenance requirements in all areas of the workplace:

• Assessing the risks associated with each situation reasoned by poor housekeeping

• Identifying and implementing control measures for each negative factor, to reduce the risks to the lowest.

Trainers note: These are the supporting content to the participant manual, please adhere to the participant manual, page no. 304-308 and explain the entire concept in detail to the learners.

Exercise

1. Good housekeeping practices and supervision are crucial to basic workplace safety.

    a. True

    b. False

2. Name any two common trip hazards

7. Employability & Entrepreneurship Skills

Introduction: Employability and Entrepreneurship Skills

This Facilitator's guide includes various activities which will help you as a facilitator to make the sessions participative and interactive.

Ice breaker

• You can begin the module with the following ice breaker:

Five of Anything Ice Breaker Steps:

• Divide the participants into groups of four or five by having them number off. (You do this because people generally begin a meeting by sitting with the people they already know best.)

• Tell the newly formed groups that their assignment is to share their five favourite movies of all time, their five favourite novels or their five least liked films. The topic can be five of anything - most liked or disliked.

• This ice breaker helps the group explore shared interests more broadly and sparks lots of discussion about why each person likes or dislikes their selected five.

• Tell the groups that one person must take notes and be ready to share the highlights of their group discussion with the class upon completion of the assignment.

Expectation Mapping

1. During the first session and after ice breaker session, ask the participants to answer the following question: "What do I expect to learn from this training?"

2. Have one of the participants write their contributions on a flip chart sheet.

3. Write down your own list of covered material in the training on another flip chart sheet.

4. Compare the two sheets, commenting on what will and what will not be covered during the training.

5. Set some ground rules for the training sessions. Ask the participants to put these rules on a flipchart and display it in the class.

6. You may get back to those sheets once again at the end of the last session of the training.

7. Benefits of doing this activity:

   • Participants feel better as their opinions are heard.

   • Participants get to know what they should expect from the training.

   • The facilitator gets to know which points to emphasize, which to leave out, and which to add during the training.

8. Expectations from the participants:

   • Must sign the attendance sheet when they arrive for class.

   • Conduct themselves in a positive manner

   • Be punctual, attentive, and participative

9. Explain the contents that are going to get covered one by one and connect it with the expectation mapping done earlier.

10. By the end of this exercise, the participants should have a clear understanding of what to expect from the session and what are the areas that will not get covered.

Defining Objectives

1. Defining the objectives in the beginning of the units sets the mood for the unit.

2. To begin with the end in mind sets the expectations of the participants as what could be the important takeaways from the session.

3. It is also a way of making participants take responsibility of their own learning process.

4. For the facilitator, the objectives decide a designed path to progress on so that the learning stays aligned and on track.

5. Read the objectives slowly, one by one, and ask the participants to explain what they think it means.

6. At the end of the session, you could again revisit the objectives to find out from the participants about how many objectives have been achieved.

In order to effectively facilitate this workshop:

1. You must have thorough knowledge of the material in the Participant Handbook, and be prepared to answer questions about it.

2. You may also wish to read other material to enhance your knowledge of the subject.

3. There may be issues raised with which you are not able to deal, either because of lack of time or knowledge. You can either state that you will obtain answers and get back to the participants with the information. Incase the query can be turned to an assignment to the class, do so. You can work with the the participants on the assignement.

4. You must have a very clear understanding of what the participants want to accomplish by the end of the workshop and the means to guide the participants.

5. As the facilitator, it is your responsibility to make sure that all logistical arrangements are made for the workshop. This may involve doing it yourself or confirming that someone else has made all necessary arrangements associated with the workshop. Assume nothing and check everything before the workshop begins.

6. To break the monotony and boredom during sessions, introduce mini breaks in the form of stretching exercises, jokes, some group songs or games.

7. Invite discussion from the participants.

8. Probe the participants further and lead them to come to affirmative conclusions.

9. Let the participants answer. No answer is incorrect.

10. Ask one participant to write all the points on the whiteboard.

11. Build the sessions from the answers provided by the class.

12. Prepare for the sessions in advance so that the resources like flipcharts, handouts, blank sheets of paper, marker pens, etc. can be kept ready.

13. Ensure that resources like board, markers, duster etc. is available before your session starts.

General instructions for role playing:

1. You are not being asked to be an actor or to entertain. The purpose of the role play is to provide a situation in which you can practice certain skills.

2. When you read the brief, try to imagine yourself in the situation described and behave in a way you feel to be natural – but be conscious of the fact that your role may require a different approach from that which you might normally use.

3. You (and others) may benefit from the change in approach and behaviour. Therefore, try to use the approach you feel to be most appropriate for the circumstances described in your brief.

4. The brief is just the starting point. It simply sets the scene and the tone of session or activity. Try not to keep referring to the brief as this will affect the spontaneity of the meeting. Allow the role play to develop as you think it might in real life and change your reactions in line with the behaviour and responses of others involved.

5. If you find that you have too little information to answer questions or to describe what has happened in the situation, do feel free to add your own thoughts and ideas. Try to keep these within the framework of the role you are taking and try to make your improvisations as realistic as possible.

UNIT 7.1: Personal Strengths & Value Systems

Key Learning Outcomes

At the end of this unit, participants will be able to:

1. Explain the meaning of health
2. List common health issues
3. Discuss tips to prevent common health issues
4. Explain the meaning of hygiene
5. Discuss the purpose of Swacch Bharat Abhiyan
6. Explain the meaning of habit
7. Discuss ways to set up a safe work environment
8. Discuss critical safety habits to be followed by employees
9. Explain the importance of self-analysis
10. Discuss motivation with the help of Maslow's Hierarchy of Needs
11. Discuss the meaning of achievement motivation
12. List the characteristics of entrepreneurs with achievement motivation
13. List the different factors that motivate you
14. Discuss the role of attitude in self-analysis
15. Discuss how to maintain a positive attitude
16. List your strengths and weaknesses
17. Discuss the qualities of honest people
18. Describe the importance of honesty in entrepreneurs
19. Discuss the elements of a strong work ethic
20. Discuss how to foster a good work ethic
21. List the characteristics of highly creative people
22. List the characteristics of highly innovative people
23. Discuss the benefits of time management
24. List the traits of effective time managers
25. Describe effective time management technique
26. Discuss the importance of anger management
27. Describe anger management strategies
28. Discuss tips for anger management
29. Discuss the causes of stress
30. Discuss the symptoms of stress
31. Discuss tips for stress management

UNIT 7.1.1: Health, Habits, Hygiene: What is Health?

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Explain the meaning of health
- List common health issues
- Discuss tips to prevent common health issues
- Explain the meaning of hygiene
- Discuss the purpose of Swachh Bharat Abhiyan
- Explain the meaning of habit

Resources to be Used ⚙️

- Participant Handbook

Ask 💬

- What do you understand by the term "Health?"
- According to you, who is a healthy person?

Say 💬

- Discuss the meaning of health and a healthy person as given in the Participant Handbook.

Ask 💬

- When did you visit the doctor last? Was it for you or for a family member?

Say 💬

- Discuss the common health issues like common cold, allergies etc. Refer to the Participant Handbook.
- Let us do a small activity. I will need some volunteers.

Role Play 🎭

- Conduct a small skit with volunteers from the class. Consider one of the villagers has been appointed as a health representative of the village, what measures will you as a health representative suggest to the common villagers to prevent common health issues discussed.
- You will need at least 4 volunteers (Narrator, Health Representative, Head of the Village, Doctor).
- Explain the health concerns of the village to the Narrator. The Narrator will brief the class about the skit.
- Give the group of volunteers, 5 minutes to do discuss.
- At the end of 5 minutes, ask the group to present the skit to the class assuming them as the villagers.
- The class can ask questions to the group as a common villager.

Summarize 🔍

- Through this activity we got some tips on how can we prevent these common health issues.

Say

- Let us now see how many of these health standards we follow in our daily life.

Activity

- Health Standard Checklist from the Participant Handbook.

Ask

- How many of you think that you are healthy? How many of you follow healthy habits?

Say

- Let's do an exercise to find out how healthy you are.
- Open your Participant Handbook section 'Health, Habits, Hygiene: What is Health?', and read through the health standards given.
- Tick the points which you think are true for you.
- Try to be as honest as possible as this test is for your own learning.

Do

- Ensure that all the participants have opened the right page in the Participant Handbook.
- Read aloud the points for the participants and explain if required.
- Give them 5 minutes to do the exercise.
- At the end of 5 minutes, ask the participants to check how many ticks have they got.

Summarize

- Tell them that they need to follow all the tips given in this checklist regularly in order to remain healthy and fit.

Ask

Discuss:

- Is it necessary to practice personal hygiene every day? Why?
- How does a person feel when they do not practice good personal hygiene? Why?
- Can good personal hygiene help a person feel good about his/her self? How?

Say

- Discuss the meaning of hygiene as given in the Participant Handbook.

Activity

- Health Standard Checklist: Hygiene

Say

- Let's do an exercise to find out if we maintain good hygiene habits or not.
- Open the Participant Handbook and read through the Health Standard checklist given.
- Tick the points which you think are true for you.
- Try to be as honest as possible as this test is for your own learning.

Do

- Ensure that all the participants have opened the right page in the Participant Handbook.
- Read aloud the points for the participants and explain if required.
- Give them 5 minutes to do the exercise.
- At the end of 5 minutes, ask the participants to check how many ticks have they got.
- Ask them to calculate their score.
- Tell them what each score indicates by reading aloud what has been mentioned in the Participant Handbook.

Ask

- How many of you have heard about "Swachh Bharat Abhiyan"?
- Can you tell the class what it is about?

Summarize

- Tell them about Swachh Bharat Abhiyan as given in the Participant Handbook and request them to take a pledge to keep our country clean.

Ask

- What is a habit?

Say

- Discuss some good habits which can become a way of life.

Summarize

- Tell them about good and bad habits and the reasons to make good habits a way of life.

UNIT 7.1.2: Safety

Unit Objectives ⌖

At the end of this unit, participants will be able to:

- Discuss ways to set up a safe work environment.
- Discuss critical safety habits to be followed by employees.

Resources to be Used ⚙

- Participant Handbook
- Safety signs and symbols
- Safety equipments
- Blank papers
- Pens

Say 💬

- There are many common safety hazards present in most workplaces at one time or another. They include unsafe conditions that can cause injury, illness and death.
- Safety Hazards include:
  - Spills on floors or tripping hazards, such as blocked aisles or cords running across the floor.
  - Working from heights, including ladders, scaffolds, roofs, or any raised work area.
  - Unguarded machinery and moving machinery parts; guards removed or moving parts that a worker can accidentally touch.
  - Electrical hazards like cords, missing ground pins, improper wiring.
  - Machinery-related hazards (lockout/tag out, boiler safety, forklifts, etc.)

Team Activity 👥

Safety Hazards

- There are two parts to this activity.
- First part will cover the potential safety hazards at work place.
- Second part will cover a few safety signs, symbols and equipments at work place.
- Use this format for the first part of the activity.

PART 1		
Hazard	**What could happen?**	**How could it be corrected?**

Ask 🗨

- How could you or your employees get hurt at work?

Say

- Let's understand it better with the help of an activity. You will be given a handout within your groups. You have to think about the possible hazards of your workplace, what damage these hazards could cause and about the corrective action.

Do

- Divide the class into five to six groups of four participants each.
- Put the format on the board for the activity.
- Give blank papers and pens to each group.
- The group is expected to think and discuss the potential safety hazards in the workplace.
- Ask the group to discuss and fill the format using the blank sheet.
- Give the groups 5 minutes for the activity.
- For the second part of the activity, show the class some pictures of safety signs, symbols and equipments.
- Now they will put down a few safety symbols, signs or equipment against the safety hazards identified.
- Give them 5 to 10 minutes to discuss and draw/note it.
- At the end of 10 minutes the groups will present their answers to the class.

Say

- Now, let's discuss the answers with the class.
- All the groups will briefly present their answers.

Do

- Ask the audience to applaud for the group presentation.
- Ask de-brief questions to cull out the information from each group.
- Keep a check on time.
- Tell the group to wind up the discussion quickly if they go beyond the given time limit.

Ask

De-briefing

- What did you learn from the exercise?
- As an entrepreneur, is it important to ensure the safety of your employees from possible hazards? Why?

Summarize

- Ask the participants what they have learnt so far.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the tips to design a safe workplace and non-negotiable employee safety habits.

UNIT 7.1.3: Self Analysis- Attitude, Achievement Motivation: What is Self Analysis?

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Explain the importance of self- analysis.
- Discuss motivation with the help of Maslow's Hierarchy of Needs.
- Discuss the meaning of achievement motivation.
- List the characteristics of entrepreneurs with achievement motivation.
- List the different factors that motivate you.
- Discuss the role of attitude in self- analysis.
- Discuss how to maintain a positive attitude.
- List your strengths and weaknesses.

Resources to be Used ⚙️

- Participant Handbook
- Old newspapers
- Blank papers
- Pencils/ pens

Activity 🛠️

- This is a paper pencil activity.

What are the three sentences that describe you the best?
What do you need to live happily?
What are your strengths and weaknesses?

Do ✓

- Write the three questions on the board/ flipchart before the session begins.
- Give plain papers and pencils/ pens to each participant.
- Tell participants to write the answer for the three questions on the paper.
- Tell them the purpose of this activity is not to judge anyone but to understand more about self.

Say 💬

- Discuss the concept of Self Analysis and motivation with reference to Maslow's Hierarchy of Needs as discussed in the Participant Handbook.

Team Activity 👥

Tower building

- Each group which will create tower using the old newspapers.

Do ✓

- Divide the class into groups.
- Give them some old newspapers.
- The task is to create a tower out of the newspapers.
- The group which will create the highest tower standing on its own will be considered the winning group.
- Groups can use as many newspapers as they want to and in any way they want.

Ask (ask)

- What did the winning group do differently?
- If you were given a chance, how would you have made the tower differently?
- How did you feel while making the tower?
- Did you feel motivated?

Say 💬

- Discuss the concept of achievement motivation and characteristics of entrepreneurs with achievement motivation as discussed in the Participant Handbook.

Ask (ask)

- Is your attitude positive or negative?

Say 💬

- Let me tell you a story :

It's Little Things that Make a Big Difference.

There was a man taking a morning walk at the beach. He saw that along with the morning tide came hundreds of starfish and when the tide receded, they were left behind and with the morning sun rays, they would die. The tide was fresh and the starfish were alive. The man took a few steps, picked one and threw it into the water. He did that repeatedly. Right behind him there was another person who couldn't understand what this man was doing. He caught up with him and asked, "What are you doing? There are hundreds of starfish. How many can you help? What difference does it make?" This man did not reply, took two more steps, picked up another one, threw it into the water, and said, "It makes a difference to this one." What difference are we making? Big or small, it does not matter. If everyone made a small difference, we'd end up with a big difference, wouldn't we?

Ask (ask)

- What did you learn from this story?

Activity ⚙️

What Motivates You?

- This is an individual activity.
- It is an exercise given in the Participant Handbook.

Do ✓

- Ask the class to open their Participant Handbook and complete the exercise given in the section What Motivates You?
- Ensure that the participants have opened the correct page for the activity.
- Give the class 5 minutes to complete the activity.

Say 💬

- Discuss the concept of attitude and how to cultivate a positive attitude as discussed in the Participant Handbook.

Summarize

- Close the discussion by summarizing how self-analysis, knowledge about what motivates you and your positive attitude can help in your business as well in life.

UNIT 7.1.4: Honesty & Work Ethics

Unit Objectives 🎯

At the end of this unit, participants will be able to:

• Discuss the qualities of honest people.

• Describe the importance of honesty in entrepreneurs.

• Discuss the elements of a strong work ethic.

• Discuss how to foster a good work ethic.

Resources to be Used ⚙

• Participant Handbook

Ask (ask)

• What do you understand by honesty?

• Why is it important for entrepreneurs to be honest?

• Do you remember any incident where your honesty helped you in gaining confidence?

• Do you remember any incident where someone lost business due to dishonesty?

Say 💬

• Talk about honesty, qualities of an honest person, and the importance of honesty in entrepreneurs as discussed in the Participant Handbook.

• "Let's understand it better with the help of some case scenarios. You will be given some cases within your groups. You have to analyse the case scenario that has been given to you and then find an appropriate solution to the problem.

• Keep your discussion focussed around the following:

    • What went wrong?

    • Who was at fault?

    • Whom did it impact- the customer or the businessman?

    • How would it impact the business immediately? What would be the long term impact?

    • What could be done?

    • What did you learn from the exercise?

Do ✓

• Divide the class into four groups of maximum six participants depending on the batch size.

• Give one case study to each group.

• Instruct them to read the case carefully.

• Put down the de-brief questions on the board and ask the groups to focus their discussion around these questions.

• The group is expected to analyse and discuss the case amongst them and find a solution to the given problem. Give the class 5-10 minutes to discuss the case and note down their solutions.

• At the end of 10 minutes the team should present their case solution to the class. The presentation can be a narration or a role play.

• Ask the group to select a group leader for their group. The group leader to discuss and assign roles to the group members for the presentation.

Team Activity

Case Study Analysis

Scenario 1

Aakash has a small mobile retail sales and repair shop in Allahabad. He has one of the most popular outlets and has great rapport with his customers.

It's around 11 AM when a customer barges in to the shop and starts shouting at Aakash for giving her a faulty instrument. The screen of her mobile is cracked from one side. Aakash remembered thoroughly checking the handset before handing it over to the customer. The customer threatens to sue him and to go to Consumer Court for cheating her. Now, the problem occurred somewhere outside the shop but as other customers were listening to the conversation, it might impact his business. The situation needs to be managed very sensitively. What would you do if you were in Aakash's place?

Scenario 2

Rajni does beautiful Phulkari embroidery on suits and sarees. She has a small home-based business. She has a huge list of customers on Facebook and WhatsApp who give her orders regularly. Smita is one of her old and regular customers. As her sister-in-law's wedding was around the corner, Smita wanted to buy few handcrafted Phulkari duppatta. She placed an order for three duppattas via WhatsApp and requested Rajni to send them as soon as possible. When the parcel reached Smita through courier she found that out of the three duppatas, only one was hand embroidered and the other two had machine embroidery on them. Even the length and the quality of the material was not as desired. Smita was heartbroken. It was a complete waste of money and moreover she couldn't wear what she had planned to during the wedding functions. She sent a message to Rajni on WhatsApp, expressing her anger and disappointment.

Smita has also sent a feedback and expressed her disappointment on the social media… this will directly affect Rajni's business. What would you do if you were in Rajni's place?

Scenario 3

Shankar is a tattoo artist who has a small tattoo showroom in a big, reputed mall in New Delhi. Mr Saksham had an appointment for today, at 11:00 am but he reached at 11:50 am. Meanwhile, Shankar had to reschedule his next appointment. After availing Shankar's services, Mr Saksham started yelling in an abusive language, refusing to pay the requisite amount, and finding faults in the services provided by him. Who was at fault in this case? What should Shankar do? Should he confront Saksham or give in to the demands of the client?

Scenario 4

Shailender is an online cloth reseller who does business through social networking sites such as Facebook and WhatsApp. Priyanka made online payment for a dress to Shailander. But she did not receive the dress for a month. When she asked for a cancellation, Shailander started misleading her. For almost 45 days, he kept promising her that he will pay the amount today, tomorrow, day after etc. Even after repeated calls and messages when she did not receive the payment or the dress, she decided to write a post against him on a popular social media platform. As a result, Shailender lost lots of customers and his flourishing business faced a major crisis. How could this situation have been managed?

Say

- Now, let's discuss the problem and solution with the larger group.
- The group will first briefly describe the case to the class.
- Then discuss the issue identified and the proposed solution.
- Once the presentation is over, the class can ask their questions.

Do

- Congratulate each group for the group presentation.
- Ask the audience to applaud for them.
- Ask de-brief questions to cull out the information from each group.
- Keep a check on time. Tell the group to wind up the discussion quickly if they go beyond the given time limit.

Summarize

- Ask the participants what they have learnt from the exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of honesty and work ethics for entrepreneurs.

UNIT 7.1.5: Creativity and Innovation

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- List the characteristics of highly creative people.
- List the characteristics of highly innovative people.

Resources to be Used ⚙️

- Participant Handbook
- Chart papers
- Marker pens

Ask 💬

- You must be aware of the term 'Rags to riches' and heard stories related to the term.
- What do these stories tell us?
- What was so special about these people?

Say 💬

- Let's have a look at these stories.
- There are some inspiring stories about people which I would like to share with you.
- Narrate these stories to the class.

A.P.J. Abdul Kalam

Who has not heard of A.P.J. Abdul Kalam: Avul Pakir Jainulabdeen Abdul Kalam hailed from a very humble background. His father was a boat owner. To help his family, Kalam would work as a newspaper vendor. With limited resources, he graduated in Physics and studied aerospace engineering. He was instrumental in India's step towards nuclear energy. In 2002, he became the 11th President of India.

Water filter/purifier at source

Two young boys studying in classes 4 and 5, from Lingzya Junior High School, Sikkim designed a simple innovative low cost water purifier.

Inspiration behind the idea: Most people today prefer to use a water filter/purifier at their home.

Both the children have given idea to have filter/purifier at the source of water so that everyone has access to clean water without having to make an investment in purchasing a filter/purifier.

Soring's idea is to have a centralised purification system at the point of distribution like water tank while Subash's idea is to have such purifiers attached to public taps.

Source: http://www.rediff.com/getahead/report/achievers-top-31-amazing-innovations-from-young-indians/20151208.htm

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Solar seeder

This is a story of a innovative solar seeder and developed by Subash Chandra Bose, a class 8, student from St Sebasthiyar Matriculation School, Pudukkottai, Tamil Nadu. Subash has developed a solar powered seed drill, which can undertake plantation for different size of seeds at variable depth and space between two seeds.

Source: http://www.rediff.com/getahead/report/achievers-top-31-amazing-innovations-from-young-indians/20151208.htm

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Looms for physically challenged

Now this is really inspiring of two sisters, Elakkiya a Class 6 student and Pavithra a Class 9 student of SRC Memorial Matriculation, Erode, Tamil Nadu.

The two sisters have come up with loom for lower limbed physically challenged. In their loom they have replaced the pedal operated system with a motor and a gearbox attached to a pulley mechanism.

Source: http://www.rediff.com/getahead/report/achievers-top-31-amazing-innovations-from-young-indians/20151208.htm

Ask

- If they can, why can't you?
- Discuss concepts related to 'Creativity and Innovation' with the participants as given in the Participant Handbook.

Say

- Recall the stories on motivation.
- What is the inner drive that motivates people to succeed?
- Let's learn more about such creative and innovative entrepreneurs with the help of an activity.

Team Activity

- This is a group activity.

• Think of any one famous entrepreneur and write a few lines about him or her.
Activity De-brief

- Why did you choose this particular entrepreneur?
- What is his/her brand name?
- What creativity does he/she possess?
- What was innovative about their ideas?

Do

- Instruct the participants that this is group work.
- Divide the class into small groups of 4 or 6 depending on the batch size.
- Give each group a chart paper.
- Tell the participants they have to write a few lines about any one famous entrepreneur.
- Give the participants 10 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.
- Ask each group to read out what they have written.
- Ask the de-brief questions.

Summarize

- Summarize the unit by asking participants if they know of some people who are highly creative and innovative in their approach.
- Ask them to share some experiences about these people with the class.

Notes for Facilitation

- Source for stories on innovations:

http://www.rediff.com/getahead/report/achievers-top-31-amazing-innovations-from-young-indians/20151208.htm

UNIT 7.1.6: Time Management

Unit Objectives 🎯

At the end of this unit, participants will be able to:

• Discuss the benefits of time management.

• List the traits of effective time managers.

• Describe effective time management techniques.

Resources to be Used ⚙️

• Participant Handbook

Ask 💬

Does this sound like you?

• I can never get enough time to finish what I am doing in a day.

• I have so many things to do that I get confused.

• I want to go for a walk and exercise, but I just do not have the time.

• I had so much to do, so I could not deliver that order on time.

• I would love to start my dream business; but, I just do not have the time.

Example 📍

• Let's look at these two examples:

Example 1:

Ankita works from home as a freelance writer. She says she can easily put in 8 hours of dedicated work in a day. Because she works from home, she saves money on travel and has a comfortable work routine. But there is a challenge and it is distraction. As she works from home, she can easily just get up and sit down on the sofa to watch TV, wasting valuable time. She may have chores to do, errands to run and bills to pay. She ends up working only two to three hours a day and the result is, her work gets piled up. She is unable to take on more work due to this. Even though her quality of work is appreciated her clients are not very happy about the delay in submission.

Example 2:

Javed has started a successful online selling company from home and makes a good living from his sales. He has set up a small office space in his living room. As both his parents are working full-time, he also has the role of taking care of his two younger siblings. He almost spends half of his day with the younger kids. He does not mind it but it means taking time away from the work. He is still able to manage his online business with these commitments. He wants to spend some more dedicated hours so as to increase his profits. He also wants to look into new business avenues. What should he be doing.

Ask 💬

• Does this happen with you too?

• Do you find it difficult to prioritize your work?

• Are you able to manage your time effectively?

Activity

- Conduct a group discussion based on the above examples.
- Direct the discussion on how to prioritize work and manage time effectively.

Say

- Time management is not only about how hard you work but also about how smart you work.
- Discuss "What is Time Management" with the participants as given in the Participant Handbook.

Ask

- Why is it important to manage time? How does it help?
- What happens when you don't manage your time effectively?
- Do you find it difficult to prioritize your work?

Say

- Discuss the benefits of time management given in the Participant Handbook.
- Let's learn effective time management with the help of an activity.

Activity

Effective Time Management

- This activity has two parts:

PART 1

TO-DO LIST

- You have to make a to-do list.
- List all of the activities/ tasks that you have to do.
- Try to include everything that takes up your time, however unimportant it may be.
- If they are large tasks, break them into action steps, and write this down with the larger task.
- You can make one list for all your tasks or have separate to-do lists for personal and professional tasks.

PART 2

URGENT-IMPORTANT GRID

- You have to make a grid as shown on the board here. .
- This grid has four boxes. As you can see, each box has a different heading.
- At the heart of the urgent-important grid, are these two questions:
  - Is this task important?
  - Is this task urgent?
- Now, you have to think about each activity that you have written in your to-do list and put it into one of the four categories.
- **What do these categories depict?**
- **Category 1: Urgent/Important**
  - This category is for the highest priority tasks. They need to get done now.

- **Category 2: Not Urgent/Important**
    - This is where you want to spend most of your time.
    - This category allows you to work on something important and have the time to do it properly.
    - This will help you produce high quality work in an efficient manner.
    - The tasks in this category are probably the most neglected ones, but also the most crucial ones for success.
    - The tasks in this category can include strategic thinking, deciding on goals or general direction and planning – all vital parts of running a successful business.
- **Category 3: Urgent/Not Important**
    - This is where you are busy but not productive. These tasks are often mistaken to be important, when they're most often busywork.
    - Urgent but not important tasks are things that prevent you from achieving your goals.
    - However, some may be activities that other people want you to do.
- **Category 4: Not Important and Not Urgent**
    - This category doesn't really include tasks, but rather habits that provide comfort, and a refuge from being disciplined and rigorous with your time management.
    - Some may be activities that other people want you to do.
    - These might include unplanned leisure activities as well.

TO- DO list format

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	

URGENT-IMPORTANT GRID

URGENT/ IMPORTANT

- Meetings
- Last minute demands
- Project deadlines
- Crisis

NOT URGENT/ IMPORTANT

- Planning
- Working towards goals
- Building relationship
- Personal commitments

1	2
3	4

- Interruptions
- Phone calls/ E-mails
- Other people's minor demands

URGENT/ NOT IMPORTANT

- Internet surfing
- Social media
- Watching TV

NOT URGENT/ NOT IMPORTANT

URGENT/ IMPORTANT GRID format

URGENT/ IMPORTANT

NOT URGENT/ IMPORTANT

1	2
3	4

URGENT/ NOT IMPORTANT

NOT URGENT/ NOT IMPORTANT

Do ☑

- Put down the formats for the to-do list and the urgent/ important grid on the board.
- Instruct the participants to prepare their to-do list first.
- Give the participants 10 minutes to prepare the list.
- Once done, instruct them to divide the tasks in to-do list into the four categories.
- Explain the four categories to the participants giving examples specific to their context.
- As you explain the categories fill the grid with the type of tasks.
- Give the participants 40 minutes to fill the grid.
- Then explain how to balance the tasks between the four categories.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Say 💬

Activity De-brief:

How can we balance tasks between the four categories?

How to manage time through this grid?

- **Category 1: Urgent/Important**
  - Try to keep as few tasks as possible here, with the aim to eliminate.
  - If you spend too much of your time in this category, you are working solely as a trouble shooter, and never finding time to work on longer-term plans.
- **Category 2: Not Urgent/Important**
  - Plan these tasks carefully and efficiently as they are most crucial ones for success.
  - If necessary, also plan where you will do these tasks, so that you're free from interruptions.
  - Include strategic thinking, deciding on goals or general direction and planning in your planning process.
- **Category 3: Urgent/Not Important**
  - Ask yourself whether you can reschedule or delegate them.
  - A common source of such activities is other people. Sometimes it's appropriate to say "no" to people politely, or to encourage them to solve the problem themselves.
- **Category 4: Not Important and Not Urgent**
  - You also want to minimize the tasks that you have in this category.
  - These activities are just a distraction – avoid them if possible.
  - You can simply ignore or cancel many of them.
  - Politely say "no" to work assigned by others, if you can, and explain why you cannot do it.
  - Schedule your leisure activities carefully so that they don't have an impact on other important tasks.
- Discuss the traits of effective time managers and effective time management techniques as given in the Participant Handbook.

Summarize 🔍

- Discuss the traits of effective time managers and effective time management techniques as given in the Participant Handbook.

Notes for Facilitation

- Here is a short story. You can conclude the session narrating the story. To make it more interesting you can perform the demonstration described and discuss the short story.

  - One day an expert in time management was speaking to a group of students. As he stood in front of the group, he pulled out a large wide-mouthed glass jar and set it on the table in front of him. Then he took out a bag of about a dozen rocks and placed them, one at a time, into the jar. When the jar was filled to the top and no more rocks would fit inside, he asked, "Is this jar full?" Everyone in the class said, "Yes." Then he said, "Really?"

  - He reached under the table and pulled out a bucket of gravel (small stones). He dumped some gravel in and shook the jar causing pieces of gravel to work themselves down into the space between the rocks. Then he asked the group once more, "Is the jar full?" By this time, the class began to understand. "Probably not," one of them answered. "Good!" he replied.

  - He reached under the table and brought out a bucket of sand. He started dumping the sand in the jar and it went into all of the spaces left between the rocks and the gravel. Once more he asked the question, "Is this jar full?" No!" the class shouted. Once again he said, "Good." Then he grabbed a jug of water and began to pour it in until the jar was filled to the brim. Then he looked at the class and asked, "What is the point of this illustration? "One student raised his hand and said, "No matter how full your schedule is, if you try really hard you can always fit some more things in it!" "No," the speaker replied, "that's not the point. The truth this illustration teaches us is: If you don't put the big rocks in first, you'll never get them in at all." What are the 'big rocks' in your life? Your children; your loved ones; your education; your dreams; a worthy cause; teaching or mentoring others; doing things that you love; time for yourself; your health; your mate (or significant other). Remember to put these BIG ROCKS in first or you'll never get them in at all. If you sweat about the little stuff (the gravel, sand, and water) then you'll fill your life with little things you worry about that don't really matter, and you'll never have the time you need to spend on the big, important stuff (the big rocks).

- End the story with these lines…

  So, tonight, or in the morning tomorrow, when you are reflecting on this short story, ask yourself this question: What are the 'big rocks' in my life? Then, put those in your jar first

UNIT 7.1.7: Anger Management

Unit Objectives 🎯

At the end of this unit, participants will be able to:

• Discuss the importance of anger management.

• Describe anger management strategies.

• Discuss tips for anger management.

Resources to be Used ⚙️

• Participant Handbook

Ask 💬

• What is anger? Is anger good or bad?

• Is anger normal or an abnormal behaviour? How can anger harm you?

• Why is it important for entrepreneurs to manage their anger?

Say 💬

• Talk about anger and the importance of anger management in entrepreneurs as discussed in the Participant Handbook.

• Let us do a small activity. This is an individual activity.

• Think of the incidents and situations that angered you and hurt you.

Do ✓

• Instruct them to note down these situations under different categories (as given in the Activity).

• Give the class 3-5 minutes to think and note down their answers.

• At the end of 5 minutes, ask some participants to volunteer and present their answers.

• They can also share these situations with their fellow participants if they do not wish to share it with the entire class.

Activity ⚙️

• Do you remember any incident which has hurt

  ‣ you physically

  ‣ you mentally

  ‣ your career

  ‣ your relationships

Ask 💬

• Do you ever get angry?

• What are the things that make you angry?

• Do you remember any incident where your anger management helped you in maintaining healthy relationship?

• Do you remember any incident where someone lost business/ friend/ relationship due to temper (anger)?

Say 💬

- There are a few strategies which can help in controlling your anger. Let's do an activity to understand the anger management process better.
- This is an individual activity.
- Think of the incidents/ situations which trigger your anger (the cause).
- Then think what happened as a result of your anger (the effect).
- You need to come up with some techniques to manage your anger.

Do ✓

- Give the class the anger triggers (the cause) as listed in the activity.
- Put down the activity format (Anger Triggers, Result of your Anger, Anger Management Techniques) on the board and instruct the class to write the answers under different categories.
- Give the class 3-5 minutes to think and note down their answers.
- At the end of 5 minutes, ask the participants who wish to volunteer and present their answers.

Activity ⚙

Trigger points and Anger Management Techniques Activity

Anger Triggers

List of triggers that make you angry:
Someone says you did something wrong.
You want something you can't have now.
You get caught doing something you shouldn't have been doing.
You are accused of doing something you didn't do.
You are told that you can't do something.
Someone doesn't agree with you.
Someone doesn't do what you tell him to do.
Someone unexpected happens that messes up your schedule.

Result of your anger:

Write the techniques that you use to manage your anger:
Anger Management Techniques

Say

- Now, let's discuss the problems and solution with all.
- The individual will first briefly describe trigger points to the class.
- Then discuss the result of the anger. Other participants are requested to remain quiet while one is making the presentation.
- Post presentation, other participants may ask questions.

Do

- Congratulate each individual for sharing their points.
- Ask the audience to applaud for them.
- Ask de-brief questions after the presentation to the class.
- Keep a check on the time. Ask the participants to wind up the activity quickly if they go beyond the given time limit.

Ask

De-brief questions:

- In the situation described by the presenter, who was at fault?
- How could you have handled this situation alternatively?

Summarize

- Close the discussion by summarizing the strategies and tips of anger management for entrepreneurs.
- Ask the participants what have they learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.

Notes for Facilitation

- Encourage the participants to share information about them while presenting the situations to the class.
- Keep the format of the Activity prepared in a chart paper so that it can be displayed during the session.

UNIT 7.1.8: Stress Management: What is stress?

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Discuss the causes of stress
- Discuss the symptoms of stress
- Discuss tips for stress management

Resources to be Used ⚙️

- Participant Handbook

Ask 🗨️

- You are waiting in the reception for an interview or a very important meeting, suddenly your legs are shaky, your hands are cold, you are feeling nervous. Have you ever been in this kind of situation?
- Have you had days when you had trouble sleeping?
- Have you ever been so worried about something that you ended up with a terrible headache?

Say 💬

- You've probably heard people say, I'm really stressed out" or "This is making me totally stressed."

Ask 🗨️

- What do you understand by stress?
- What gives you stress?
- How do you feel when you are stressed or what are the symptoms of stress?
- How can stress harm you?
- Why is it important for entrepreneurs to manage stress?

Say 💬

- When we feel overloaded or unsure of our ability to deal with certain challenges, we feel stressed.
- Discuss about stress, causes of stress, and symptoms of stress as discussed in the Participant Handbook.
- Let's understand the causes of stress and how to deal with them with the help of some case scenarios.
- You will be given some cases.
- You have to analyse the case scenario and then find an appropriate solution to the problem.
- This will be a group activity.

Do ✓

- Divide the class into four groups of 5- 6 participants (depending on the batch size).
- Assign one case scenario to each group.
- Instruct them to read the case carefully.
- The group is expected to analyse and discuss the case amongst them and find a solution to the given problem.
- Explain their discussion should result in getting answers for the following questions:

- ◆ What was/ were the cause(s) of stress?
- ◆ Was the stress avoidable or manageable under the given circumstances?
- ◆ If yes, how do you think that the stress could be avoided (managed)?
- ◆ If no, then why not?

- Give the class 10-12 minutes to discuss the case and note down their solutions.
- At the end of 12 minutes, the team should present their case solution to the larger group.
- Ask the group to select a group leader for their group.
- The group leader to discuss and assign roles to the group members for the presentation.

Team Activity

Case Study Analysis

Scenario 1

Akash's alarm doesn't go off and he gets late getting out of the house. He hits traffic and ends up 15 minutes late to work, which his boss notices. He gets to his desk and finds he has to complete 2 reports in next one hour. Just when he is about to begin work, a message pops up "Telecon with the client begins in 10 minutes. Please be in the conference room in 5 minutes."

His is not prepared for the call. He is stressed. He does not want to speak to his boss about this. He is stressed, feeling uncomfortable and sick. Not in a position to attend the call or finish the reports on time.

Scenario 2

While paying his overdue bills, Rahul realised that it's the middle of the month and he has only Rs 500 left in his account. He has already asked all of his friends, and family for loans, which he hasn't paid back yet. He is still contemplating over the issue when his phone rings. His sister's birthday is due next week and she has seen a beautiful dress which she wants to buy but cannot tell the parents as it is a bit expensive. She wishes if Rahul could buy the dress for her. Rahul has promised to buy her the dress for her birthday.

Rahul is stressed, does not understand what to do. He is unable to concentrate on his work and unable to complete the tasks assigned. His team leader has already warned him of the delay.

Scenario 3

Sheela calls the cable company as she has unknown charges on her bill. She has to go through the automated voice mail menu three times and still can't get through to a customer care executive. After 15 minutes of repeated efforts, her call is answered. She explains the entire issue to the customer care executive but before the person could suggest a way out, the call drops.

Now Sheela has to call back and repeat the whole process all over again with a new customer care executive. She is very angry and calls again but cannot connect this time.

She has to leave to office so she decides to call from office and check. When she connects this time she is angry and argues with the executive on the call. All her co-workers around are looking at her as her volume has suddenly increased. She bangs the phone and ends the call.

Her co-worker Neelam enquires what has happened to her. She ignores her and just walks off. She has become irritable and her behaviour and tone with other co-workers is not acceptable.

Scenario 4

Arpit is a young entrepreneur who started doing business through Facebook few weeks back. He had always been into a job. Although Arpit has very few financial liabilities, it wasn't an easy decision to leave a comfortable job at once and look for newer pastures. Arpit's boss warned him of the consequences and the challenges of starting a business when nobody ever in his family had been in business.

He has not been able to get a good deal till now. This is an important life shift for him which comes with unknown variables. Arpit is nervous and is wondering if he has what it takes to fulfill the requirement of his new role, or the new experiences he's likely to face.

Ask

De-brief questions:

- What was/ were the cause(s) of stress?
- Was the stress avoidable or manageable under the given circumstances?
- If yes, how do you think that the stress could be avoided (managed)?
- If no, then why not?

Say

- Now, let's discuss the problem and solution with the larger group.
- The group will first briefly describe the case to the class.
- Then discuss the issue identified and the proposed solution.
- Post presentation, the other groups may ask questions to the group that has presented.

Do

- Congratulate each group for sharing their points.
- Ask the audience to applaud for them.
- Ask de-brief questions to cull out the information from each group.
- Keep a check on time. Tell participants to wind up the discussion quickly if they go beyond the given time limit.

Say

- While it is common and normal to feel some tension. This feeling nervous and tensed can interfere with your thinking process and can have a negative impact on your performance.
- Stress can deplete the most vibrant of souls. It can have a negative effect on every aspect of a person's life including their health, emotional well-being, relationships, and career. However, one needs to understand the causes and types of stress before looking for ways to manage it.

De-brief:

Scenario 1

The cause of stress was lack of time management and the habit of procrastinating. If Akash would have managed his time well, planned alternate ways to get up on time, finished prior tasks on time and planned for client meetings in advance then he wouldn't have faced stress.

Scenario 2

The cause of stress was lack of financial planning. Rahul should have planned his financial resources well in advance and saved some money for the rainy day. Also, differentiating between needs and wants and keeping a check on non-essential expenditure would have saved Rahul from this situation.

Scenario 3

Sometimes, stress is caused due to external factors instead of internal ones. In this case, the stress was unavoidable because we have no control over this customer care system. Every time, you will get in touch with a new executive and will have to explain all over again. This might cause stress but despite being frustrated and angry there is little that we can do about it. All Sheela could do was to find ways to calm herself down through some breathing exercises and meditation, reading some good book or listening to music and then start afresh.

Scenario 4

A positive, major life change can be a source of good stress. Regardless of how good the change is, it can be stressful. Stress caused by a positive and major life change can be beneficial because it causes a person to step out of their comfort zone and learn new skills. Here, Arpit may become a successful entrepreneur or learn new ways to do things differently.

Now let us see this scenario, can I have a volunteer to read out this case to the class.

Do ☑

- Ask one of the participant who can volunteer and read out this scenario to the class.

Scenario 5

Rakesh lives in Kathmandu with his wife and two beautiful daughters Sarah and Sanya. Nepal was hit by a massive earthquake and Rakesh's building collapsed during the earthquake. During evacuation, Rakesh realised that though his wife and Sarah were fine and suffered only minor bruises, Sanya was nowhere in the scene. Panic stricken, he started calling her name and searching her frantically. A little later, he heard a meek voice from beneath the debris. He quickly removed the rubble to find a huge bed. Rakesh was pretty sure that Sanya was trapped underneath. Though he was badly bruised, he gathered all his courage and with all his might, he lifted the several-ton bed to save Sanya's life. Everyone was relieved to see Sanya alive and also extremely surprised to see this father's ability to access superhuman strength.

- Ask the audience to applaud for the participant after the scenario is read completely.
- Discuss the scenario, ask de-brief questions:
  - What kind of stress was Rakesh undergoing in this case?
  - Was the stress avoidable or manageable under the given circumstances?
  - What was the result of the stress?

Say 💬

De-brief:

- Not all stress is harmful; good stress is actually energizing. This was a case of lifesaving stress, or hero stress, which is an important example of good stress. You may have heard stories in which a person performs an impossible feat of physical strength in order to save their life or the life of someone they love. This type of stress causing a surge of adrenaline is good for us.

Summarize

- Close the discussion by summarizing the tips to manage stress as given in the Participant Handbook.
- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.

Notes for Facilitation

- Keep printed copies of the activities/ scenarios ready for the session.
- Put down the de-brief questions on a flip chart so that it can be displayed in the class during the activity.
- Encourage participation and make the discussions interative.

UNIT 7.2: Digital Literacy: A Recap

Key Learning Outcomes

At the end of this unit, participants will be able to:

1. Identify the basic parts of a computer
2. Identify the basic parts of a keyboard
3. Recall basic computer terminology
4. Recall the functions of basic computer keys
5. Discuss the main applications of MS Office
6. Discuss the benefits of Microsoft Outlook
7. Identify different types of e-commerce
8. List the benefits of e-commerce for retailers and customers
9. Discuss Digital India campaign will help boost e-commerce in India
10. Describe how you will sell a product or service on an e-commerce platform

UNIT 7.2.1: Computer and Internet Basics: Basic Parts of a Computer

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Identify the basic parts of a computer
- Identify the basic parts of a keyboard
- Recall basic computer terminology
- Recall the functions of basic computer keys

Resources to be Used ⚙️

- Participant Handbook
- Computer Systems with the required applications

Say 💬

- Let's take a quick recap of the basic computer parts.
- Discuss 'Basic Parts of Computer' and 'Basic Parts of a Keyboard' with the class as given in the Participant Handbook.

Explain

- Explain all the parts of the computer and the keyboard by demonstrating on the real system.

Ask 🆎

- Do you know about internet?
- Have you ever used internet?
- Why do you think internet is useful?
- What was the last task you performed on internet?

Say 💬

- Let's look at some basic internet terms.
- Discuss 'Basic Internet Terms' with the participants as given in the Participant Handbook.

Summarize

- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of computer and internet for entrepreneurs.

Practical 🛠

- Conduct a practical session.
- Ask the participants to assemble in the computer lab.
- Give some hands on practice exercises.

Do ✓

- Group the participants for the activity depending on the batch size and the number of computer systems available in the lab.
- Explain the purpose and duration of the activity.
- Ensure the participants complete the practical exercises assigned.

UNIT 7.2.2: MS Office and Email: About MS Office

Unit Objectives ⊚

At the end of this unit, participants will be able to:

- Discuss the main applications of MS Office
- Discuss the benefits of Microsoft Outlook

Resources to be Used ⚙

- Participant Handbook
- Computer Systems with MS Office

Ask (ask)

- What is the most frequent activity that you do on the computer?
- Do you know how to make presentations on the computer?

Say 💬

- Give a brief introduction of MS Office as given in the Participant Handbook.
- Discuss the most popular office products. Explain in brief their application, benefits and working.
- **Microsoft Word** is a word processing program that allows for the creation of documents. The program is equipped with templates for quick formatting. There are also features that allow you to add graphics, tables, etc.
- **Microsoft Excel** is a tool for accounting and managing large sets of data. It can also simplify analysing data. It is also used to create charts based from data, and perform complex calculations. A Cell is an individual data box which will have a corresponding Column and Row heading. This gives the cell a name, referred to as the Cell Reference. There can be multiple pages in each workbook. Each page, or sheet, is called a Worksheet. When you open a new Excel file, it automatically starts you with three worksheets, but you can add more.

Explain ⚘

- Explain the working and frequently used features of Office on a real system.

Ask (ask)

- What do you know about e-mails?
- Do you have an email id?
- How often do you check your e-mails?

Say 💬

- Communication is vital for every business. The fastest and the safest way to communicate these days are through emails. MS Outlook helps to manage your emails in a better way and also offers a host of other benefits.
- Discuss "Why Choose Microsoft Outlook?" with the participants as given in the Participant Handbook.

Do

- Ask the participants to assemble in the computer lab.
- Explain the working of Outlook on a real system..

Demonstrate

- Demonstrate how to create email id.
- Demonstrate how to write new mails, send mails.
- Demonstrate how to use MS Office application to create a letter and send it as attachment in an email.
- Demonstrate how to use other MS Office applications.

Practical

- Give some hands on practice exercises
- Group the participants for the activity depending on the batch size and the number of computer systems available in the lab.
- Explain the purpose and duration of the activity.

Summarize

- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.

UNIT 7.2.3: E-Commerce

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Identify different types of e-commerce
- List the benefits of e-commerce for retailers and customers
- Discuss Digital India campaign will help boost e-commerce in India
- Describe how you will sell a product or service on an e-commerce platform

Resources to be Used ⚙️

- Computer System with internet connection
- Participant Handbook

Ask 💬

- How many of you have done shopping online?
- Can you name at least five shopping websites?
- What is the product that you most frequently buy online?
- Why do you do shopping online instead of going to the market?

Say 💬

- Give a brief introduction of "What is E-commerce". Refer to the Participant Handbook.
- E- commerce emerged in the early 1990s, and its use has increased at a rapid rate. Today, many companies sell their products online. Everything from food, clothes, entertainment, furnitureand many other items can be purchased online.

Ask 💬

- What other types of transactions have you performed on the internet other than buying products?

Say 💬

- Give examples of e-commerce activities from Participant Handbook.

Team Activity 👥

E-commerce examples

- Instruct the participants to list some of the payment gateways that they have used for e-commerce activities.
- Give them 5 minutes to make this list.
- Discuss payment gateways and transaction through payment gateways.
- Conclude the discussion by mentioning how important e-commerce has become in our day to day transactions.

Say 💬

- E-commerce activities can be classified based on the types of participants in the transaction.
- Discuss "Types of E-commerce" from the Participant Handbook.

Do ✓

- Discuss all types of E-commerce by giving examples and names of some popular websites which use them.
- Make the discussion interactive by asking the class to share some popular e-commerce sites of each type.

Say 💬

- E-commerce activities bring a host of benefits for both, retailers and customers.
- Discuss benefits of E-commerce from the Participant Handbook.

Explain 🗂

- The majority of the population that uses E-commerce activities lives in tier-1 and tier-2 cities. To encourage the use of digital money in tier-3 and 4 areas, PM Mr. Modi launched the "Digital India Campaign".
- Discuss "Digital India Campaign" from the Participant Handbook.
- By Digital India project the government will deliver services via mobile connectivity and in doing so, is expected to bring the internet and broadband to remote corners of the country. This connectivity will in turn enhance e-commerce activities also. Furthermore, the Indian Government is also modernizing India Post and aims to develop it as a distribution channel for e-commerce related services.

Say 💬

- Now let us discuss how to sell a product using E-commerce.
- Every product has to be sold on a platform on the internet. Think of it as a shop that you have to sell your product. Now this shop can be your own or shared or rented. If the shop is your own or rented there will be only your products in that shop. If the shop is shared, there will be products of multiple sellers in that shop. A common example is a departmental store which has products from multiple brands in the shop.
- Similarly, in E-commerce the shop is the website where your products are displayed. If it is your own website it will exclusively showcase your products. In this case the cost that you will incur will be:
  - Developing the website
  - Hosting the website
  - Maintenance of the website
- If you rent a website it will also showcase your own products but the development, hosting and maintenance parts goes to the owner. This saves time and the cost to manage these activities.
- Smaller companies usually go for renting a website and the bigger ones develop their own website.
- The concept of shared platforms has become very popular in recent times. In this platform the sellers have to register and then they can sell their goods on a common platform. Among the most popular of these are Amazon, Myntra, Flipkart, etc.

Role Play 🎭

- Tell the participants to choose a product or service that they want to sell online.
- Tell them to write a brief note explaining how they will use existing e-commerce platforms, or create a new e-commerce platform to sell their product or service.

Ask

- How much money are you carrying in your wallet?
- Do you have a credit/debit card?
- How do you make payments while doing online shopping?

Say

- Demonetization has made carrying cash in the wallet very difficult. People either shop through cards or some other form of digital money.
- So what do you think is digital money?
- In this form the money is both paid and received digitally. There is no hard cash involved. It is an instant and convenient way to make payments.
- There are various types of digital payments. Let us discuss some of them in brief here.
- The first one is the most commonly used system i.e. the cards. Debit card, credit card, prepaid card, all fall under this category.
- Then is the e-wallet or the mobile wallet. This has become the most used form of digital money after demonetization. Examples are Paytm, state bank buddy, Freecharge, etc.
- Many other forms of digital money are also coming up in market like mobile apps, Aadhar card based payment, etc.

Do

- Demonstrate how to make and receive payments through digital models like Paytm and state bank buddy.

Ask

- Why do you think people have started using digital money instead of hard cash? Is demonetization the only reason?

Say

- Digital money gives a lot of advantages over the conventional hard cash. Some of them are:
  - Digital payments are easy and convenient. You do not need to take loads of cash with you, a mobile phone or a card will suffice.
  - With digital payment modes, you can pay from anywhere anytime.
  - Digital payments have less risk.

Summarize

- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of e-commerce and digital money.

UNIT 7.3: Money Matters

Key Learning Outcomes

At the end of this unit, participants will be able to:

1. Discuss the importance of saving money
2. Discuss the benefits of saving money
3. Discuss the main types of bank accounts
4. Describe the process of opening a bank account
5. Differentiate between fixed and variable costs
6. Describe the main types of investment options
7. Describe the different types of insurance products
8. Describe the different types of taxes
9. Discuss the uses of online banking
10. Discuss the main types of electronic funds transfer

UNIT 7.3.1: Personal Finance – Why to Save?

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Discuss the importance of saving money
- Discuss the benefits of saving money

Resources to be Used ⚙️

- Participant Handbook

Ask 💬

- How many of you save money?
- Why do you feel the need to save it?
- Do you plan your savings?
- Where do you keep the money you save?
- How do you use the money that you have saved?

Example 📍

- Let's look at these two examples:

> **Example 1:**
>
> Suhani works in a good company and earns Rs.30, 000 month. She always saves 5000 per month and keeps it aside as a personal saving. She keeps the money at home and has saved quite a lot. One day her mother has a medical emergency and has to be taken to the hospital. Her family is worried about the amount they have to spend for the treatment. It will cost them atleast 40,000.
>
> Suhani says tells her family not to worry and that she has about 50,000, which she has saved over the months.

> **Example 2:**
>
> Jasmeet works in the same company and earns the same as Suhani. She is very fond of shopping and spends most of her money on buying new clothes. At the end of the month, she is always asking her father for money as her pay is finished.

Ask 💬

- Who do you identify with –Suhani or Jasmeet ?
- How do you think Suhani manages to save money which Jasmeet is unable to do?

Say 💬

- We should always set aside some and save some money from our monthly pay. The future is unpredictable. Saving money not only gives you a sense of financial security but it can be used in case of emergencies.
- Discuss "Importance of Saving" with the participants as given in the Participant Handbook.

Ask 💬

- What are the benefits of saving money?
- What does being financially independent mean to you?

Say

- Discuss "Benefits of Saving" with the participants as given in the Participant Handbook.

- Now let us continue with Suhani's story. Suhani has told her family not to worry and that she has about 50,000, which she has saved over the months. The family is happy about Suhani's decision of saving money, which will be of great help for them now.

  Suhani is going to the hospital today to pay the first instalment for the treatment. Suddenly finds only 35,000 in her cash box when she counts and does not remember using it. She has not kept any record and now she is upset.

Ask

- Was it a good decision by Suhani to save a part of her earnings every month?

- Was it a wise decision to keep all her savings as cash in a cash box?

- Could she have managed to save money in a better and more effective manner?

- Do you want to learn how to save money and use it effectively?

Say

- Let's learn personal saving with the help of a group activity.

Team Activity

Personal Finance- Why to save

- This activity has two parts:

> ### PART 1
> ### WAYS TO SAVE MONEY
> - You are earning 30,000/- per month. You have recently changed your job and have to move to a metropolitan city. You are now living as a paying guest paying 10,000/- per month. Your other estimated expenditures like travel, food, recreation would be around Rs. 17, 000 per month.
> - Make a list of different ways to save money.

> ### PART 2
> ### HOW WILL YOU USE THE MONEY
> - After a year how much have you been able to save?
> - How will you use the money that you have saved?

Do

- Divide the class into groups of four.
- Instruct the participants to think and prepare a list of the various ways they can save money.
- Give the participants 10 minutes to prepare the list.
- Once done, instruct them to think of how they could use the money they have saved.
- Give the participants 10 minutes to prepare the list.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

> **Activity De-brief**
> - What were the different ways you could save money?
> - How much money were you able to save?
> - How will you use the money you have saved in one year?

Say

- Discuss the importance of personal finance and why it is important to save money.

Summarize

You can summarize the session by discussing:

- The importance of saving money.
- Ways to save money.
- How the money saved can be used for different purposes.

UNIT 7.3.2: Types of Bank Accounts, Opening a Bank Account

Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the main types of bank accounts
- Describe the process of opening a bank account

Resources to be Used

- Account opening sample forms
- Participant Handbook

Ask

- How many of you save money?
- Where do you keep the money you save?
- How many of you have a bank account?
- What type of account do you have?

Example

- Let's look at the given example:

> Reena is in the third year of college but in the evening she gives tuitions for children living in her colony. She earns 15,000/- per month. As her students stay in different parts of the city, she has to walk a lot.
>
> To save time, she decides to buy a second hand scooter for herself. But she has to save money for it. Her class mate advises her to open a recurring deposit account in the bank.
>
> She goes to the bank close to her home. The personal manager gives her some forms to fill. She is confused as she has never done this before. Her elder sister has an account in the same bank. She asks for help from her sister. She goes to the bank the next day with her sister. The personal banker gives her a list of documents that she will need to submit with the form for opening an account. The banker advises her to open a 6 months recurring deposit.

Ask

- Do you try to save money monthly but have to spend it on unforeseen expenditure?
- Have you ever thought of depositing your savings in a bank?

Say

- Before opening a bank account, you need to know the types of accounts we have in India.
- Discuss "Types of Bank Accounts" with the participants as given in the Participant Handbook.

Ask

- Can someone say what are the different types of bank accounts?

Say 💬

- Let's learn about the different types of bank accounts through an activity.

Team Activity 👥

- Divide the class in four groups.
- Label the groups as savings account, current account, recurring account and fixed deposit.
- On a chart paper, ask them to write the key points of their account.

Activity De-brief

- Ask each group to present the key points of their account.

Say 💬

- Now that you know about the four different types of accounts, let's learn how to open a bank account.
- Discuss "Opening a Bank Account" with the participants as given in the Participant Handbook.
- Discuss "Tips" that the participants should keep in mind while opening a bank account as given in the Participant Handbook.

Ask ⟨ask⟩

- What are the main documents required for opening a bank account?
- What are some important points to ask the bank personnel while opening an account?

Say 💬

- Mention officially valid KYC documents (refer to the Participant Handbook)
- Now, let's understand the procedure of opening a bank account through an activity.

Team Activity 👥

Opening a Bank Account

- This activity is done in groups.
- Divide the class in groups of four or six.

PART 1

FILLING A BANK ACCOUNT OPENING FORM

- You have to fill a bank opening form.
- You can refer to the section "Opening a Bank Account" of your Handbook for reference.
- List all the steps that you will be required to fill in the form.
- List the documents that you needs for filling the form.
- Now fill in the form.

Activity De-brief

How did you design the form?

- What all details did you fill in the form?
- What were your KYC documents?
- How would this activity help you in future?

Do ✓

- Instruct the participants to read the section "Opening a Bank Account' of the Participant Handbook.
- Give each group one sample account opening form.
- Give the participants 5 minutes to read the form.
- Give them 15 minutes to fill it.
- Assist them by explaining each category and how to fill it.
- Keep a check on time.
- Tell the group to wind up quickly if they go beyond the given time limit.

Summarize

Note:

- You can summarize the unit through a role play.
  - ◆ A person wanting to open an account in the bank.
  - ◆ What is the procedure that he will go through?
  - ◆ Discuss the key points of different types of bank accounts.
  - ◆ How to select the type of account
  - ◆ How to fill the account opening form.
- A sample account opening form is given in the following page for reference. Use it for the activity in the class.

Sample Bank Account Opening form.

Photograph

XXX Bank

SAVING BANK ACCOUNT OPENING FORM

Account No.: _____   Date: _____

Name of the Branch		
Village/Town		
Sub District / Block Name		
District		
State		
SSA Code / Ward No.		
Village Code / Town Code	Name of Village / Town	

Applicant Details:

Full Name	Mr./Mrs./Ms.	First	Middle	Last Name
Marital Status				
Name of Spouse/Father				
Name of Mother				
Address				
Pin Code				
Tel No. Mobile			Date of Birth	
Aadhaar No.			Pan No.	
MNREGA Job Card No.				
Occupation/Profession				
Annual Income				
No. of Dependents				

Detail of Assets	Owning House : Y/N Owning Farm : Y/N No. of Animals : Any other :
Existing Bank A/c. of family members / household	Y / N If yes, No. of A/cs. _____
Kisan Credit Card	Whether Eligible Y / N

I request you to issue me a **Rupay Card**.

I also understand that I am eligible for an Overdraft after satisfactory operation of my account after 6 months of opening my account for meeting my emergency/ family needs subject to the condition that only one member from the household will be eligible for overdraft facility. I shall abide by the terms and conditions stipulated by the Bank in this regard.

Declaration:
I hereby apply for opening of a Bank Account. I declare that the information provided by me in this application form is true and correct. The terms and conditions applicable have been read over and explained to me and have understood the same. I shall abide by all the terms and conditions as may be in force from time to time. I declare that I have not availed any Overdraft or Credit facility from any other bank.

Place:
Date: **Signature / LTI of Applicant**

Nomination:

I want to nominate as under				
Name of Nominee	Relationship	Age	Date of Birth in case of minor	Person authorised in case to receive the amount of deposit on behalf of the nominee in the event of my /minor(s) death.

Place:

Date: **Signature / LTI of Applicant**

Witness(es)*

1. _____

2. _____

*Witness is requires only for thumb impression and not for signature

UNIT 7.3.3: Costs: Fixed vs. Variables: What are Fixed and Variable Costs?

Unit Objectives

At the end of this unit, participants will be able to:

- Differentiate between fixed and variable costs

Resources to be Used

- Participant Handbook
- Blank sheets of paper
- Pens

Ask

- What is cost?
- Will a telephone bill fall under the category of a fixed or variable cost?

Say

- Discuss: Fixed and Variable cost with examples.Let us do a small activity.

Team Activity

Identify the type of cost

1. Rent
2. Telephone bill
3. Electricity bill
4. Machinery
5. Insurance
6. Office supplies/ Raw materials
7. Employee salaries
8. Commision percentage given to sales person for every unit sold
9. Credit card fees
10. Vendor bills

Do

- Divide the class into two groups. Read out the list of costs given in the activity.
- Read out each item from the cost list and ask the groups in turns to identify whether it is a fixed or variable cost.

Say

- We saw that your utility bills like rent, electricity, telephone etc. are all fixed costs because you have to pay it every month.
- Variable costs is an expense which varies with production output or volume. For example commission, raw material etc.
- Discuss "Cost: Fixed vs. variables" with the participants as given in the Participant Handbook.
- Illustrate the relation between the costs with a graph.
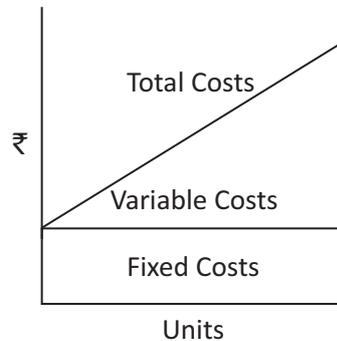
- Let's learn the difference between fixed and variable cost with the help of an activity.

Team Activity

Fixed vs. Variable Costs

- This is a group activity.

- You want to start your own entrepreneur business.
- State the type of business you want to start.
- List down all the cost or requirements for your business.
- How will you differentiate between the fixed and variable cost.

Activity De-brief
- What is the total cost of your business?
- What are the fixed costs?
- What are the variable costs?
- How did you differentiate between the fixed and variable costs?

Do

- Instruct the participants that this is group work.
- Divide the class into small groups of 4 or 6.
- Give each group a sheet of paper.
- Tell the participants that they have to start their own entrepreneur business.
- Ask them the type of business they want to start.
- Instruct them to differentiate between the fixed and the variable costs of the business they want to start.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Summarize

- Note: You can summarize the unit either by having a role play between a consultant and a budding entrepreneur explaining the differences between fixed and variable costs or by discussing the key points of the unit.

Notes for Facilitation

- Answers for the activity - Identify the type of cost

1.	Rent	(Fixed)
2.	Telephone bill	(Fixed)
3.	Electricity bill	(Fixed)
4.	Machinery	(Fixed)
5.	Insurance	(Fixed)
6.	Office supplies/ Raw materials	(Variable)
7.	Employee salaries	(Fixed)
8.	Commision percentage given to sales person for every unit sold	(Variable)
9.	Credit card fees	(Variable)
10.	Vendor bills	(Variable)

UNIT 7.3.4: Investments, Insurance and Taxes

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Describe the main types of investment options
- Describe the different types of insurance products
- Describe the different types of taxes

Resources to be Used ⚙️

- Participant Handbook

Ask 🗨

- Ask the participants- "What do you see first thing in when you get your mobile bill? Apart from the amount and due date do you have a look at the taxes you are being billed for?
- Why do you think people get their cars insured or have a medical insurance?
- You have saved money and want to invest it, how would you decide what is the best investment for your money?

Example 📍

- Let's have a look at a few scenarios.

> Ranbir has sold his house and deposited the money in his bank. His Chartered Accountant tells him that he will have to re-invest the money otherwise he will have to pay capital tax. What is capital tax and how is it different from income tax?

> Jasmeet and Anup are blessed with a baby girl. They decide to have an insurance policy that will mature when their daughter is ready to higher education.

> Shivani is working in a corporate office and getting good pay. She will have to pay income tax so she decides to invest her money in tax saving schemes. She goes to the bank manager to discuss the best products in which she can invest.

Say 💬

- Discuss the Investment, Insurance and Taxes as given in the Participant Handbook.

Ask 🗨

- How do investments, insurances and taxes differ from each other?

Say 💬

- Let's learn the differences between the three by having an activity.

Say 💬

- We will have a quiz today.

Team Activity

- The activity is a quiz.

Do

- Divide the class into groups of three and give a name to each group
- Explain the rules of the quiz. For each correct answer the group gets 1 mark. If the group is unable to answer the question is rolled over to the next group.
- Explain the purpose and duration of the activity.
- On the blackboard write the names of the groups.
- Ask the questions of the quiz.
- Keep a score for the groups.
- Set guidelines pertaining to discipline and expected tasks.

Summarize

- Summarize the unit by discussing the key points and answering question

Notes for Facilitation

Questions for the quiz

1. What are bonds?

   Bonds are instruments used by public and private companies to raise large sums of money.

2. Who issues the bonds?

   Private and public companies issue the bonds.

3. Why are bonds issued?

   To raise large amount of money as it cannot be burrowed from the bank.

4. Who is the buyer of stocks and equities?

   The general public is the buyer.

5. What types of scheme is the Sukanya Samriddhi Scheme?

   Small Saving Scheme

6. What is the difference between mutual and hedge funds?

   Mutual funds are professionally managed financial instruments that invest the money in different securities on behalf of investors. Hedge funds invest in both financial derivatives and/or publicly traded securities.

7. Why is a loan taken from the bank to purchase real estate?

   To lease or sell to make profit on appreciated property price.

8. Name the two types of insurances?

   Life Insurance and Non-life or general insurance

9. Which insurance product offers financial protection for 15-20 years?

   Term Insurance

10. What is the benefit of taking an endowment policy?

    It offers the dual benefit of investment and insurance.

11. Mr. Das gets monthly return on one of his insurance policies. Name the policy?

    Money Back Life Insurance

12. What are the two benefits of a Whole Life Insurance?

    It offers the dual benefit of investment and insurance

13. Which policy covers loss or damage of goods during transit?

    Marine Insurance

14. After what duration is the income tax levied?

    One financial year

15. What is long term capital gain tax?

    It is the tax payable for investments held for more than 36 months.

16. Name the tax that is added while buying shares?

    Securities Transaction Tax

17. What is the source of corporate tax?

    The revenue earned by a company.

18. Name the tax whose amount is decided by the state?

    VAT or Value Added Tax

19. You have bought a T.V. What tax will you pay?

    Sales Tax

20. What is the difference between custom duty and OCTROI?

    Custom duty is the charges payable when importing or purchasing goods from another country. OCTROI is levied on goods that cross borders within India.

UNIT 7.3.5: Online Banking, NEFT, RTGS, etc.

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Discuss the uses of online banking
- Discuss the main types of electronic funds transfer

Resources to be Used ⚙️

- Participant Handbook
- Computer System with internet connection
- Debit card

Ask 💬

- When was the last time you visited a bank?
- How do you pay your bill for electricity and telephone?
- Have you ever tried to transfer money from one bank account to another bank account using the online banking facility?

Say 💬

- Most of us lead a busy life. Time has become more important than money. In this busy schedule no one has time to stand in bank queues. That's where Online Banking comes in. Online banking or internet banking means accessing your bank account and carrying out financial transactions through the internet.
- Discuss "What is online banking?" from the Participant Handbook.
- There are various advantages of online banking:
  - It saves time, as you need to visit the branch. .
  - You can conduct your banking transactions safely and securely without leaving the comfort of your home.
  - Online Banking also gives you round the clock access.
  - Online Banking makes it possible for you to pay your bills electronically.

Do ✓

- Show them how they can use the internet banking.
- Use the computer system and show the demo videos on how to use internet banking provided on most banking sites. the computer system.
- Tell the class the various features of online banking:
  - Through their website set-up your online account.
  - Choose a secure username and password.
  - Set-up your contact information.
  - Once your information is verified, you are good to go.
  - Once you enter the portal explore all the features and learn your way through the portal.
- Discuss about maintaining the security of the online account.

Say

- One of the biggest advantage that online banking offers, as discussed earlier, is transferring money from one account to another. This transaction is called electronic funds transfer. Electronic transfers are processed immediately with the transferred amount being deducted from one account and credited to the other in real time, thus saving time andeffort involved in physically transferring a sum of money.
- Discuss "Electronic Funds Transfer" from the Participant Handbook.

Do

- Discuss how to transfer money from one account to another using online banking (NEFT/ RTGS, etc.).
- Illustrate with an example.

Summarize

- Close the discussion by summarizing the about online banking.
- Ask the participants if they have any questions related to what they have talked about so far.

UNIT 7.4: Preparing for Employment & Self Employment

Key Learning Outcomes

At the end of this unit, participants will be able to:

1. Discuss the steps to follow to prepare for an interview
2. Discuss the steps to create an effective Resume
3. Discuss the most frequently asked interview questions
4. Discuss how to answer the most frequently asked interview questions
5. Identify basic workplace terminology

UNIT 7.4.1: Interview Preparation: How to Prepare for an Interview?

Unit Objectives ◎

At the end of this unit, participants will be able to:

• Discuss the steps to follow to prepare for an interview

Resources to be Used ⚙

• Participant Handbook

Ask 💬

• Have you ever attended an interview?
• How did you prepare before going for an interview?

Say 💬

• An interview is a conversation between two or more people (the interviewer(s) and interviewee) where questions are asked by the interviewer to obtain information from the interviewee.
• It provides the employer with an opportunity to gather sufficient information about a candidate and help them select the ideal candidate.
• It also provides the interviewee with an opportunity to present their true potential to the employer, build confidence and help make a decision about the job by asking questions regarding designation, salary, perks, benefits, promotions, transfers, etc.
• Let's do an activity to understand how to prepare for interviews better.

Activity 1 ⚙

• Introducing Yourself

Do ✓

• Select a participant and ask him/her to answer the following questions: "What can you tell me about yourself."
• Give the participant at least one minute to speak.
• Once he/she is done, ask the rest of the participant what they gathered about the participant who was providing information.
• Now repeat the exercise with five other participants.

Ask 💬

• What information you should include when you are describing or introducing yourself in an interview?
• What information you should not include when you are describing or introducing yourself in an interview?

Say 💬

- Tell the participants that when an interviewer asks you to say something about yourself, he/she is not asking you to present your life history.
- Introduction should be short and crisp, and should present you in a positive light. It should include the following points:
  - Any work experience that you might have
  - A brief summary of your educational qualifications
  - Your strengths and achievements
  - Any special projects that you might have been part of
- The following topics should be avoided during an introduction:
  - Detailed description of your family (unless you are specifically asked to do so)
  - Too much information about your weaknesses
  - Information that is not true

Do ✓

- Congratulate each participant for sharing their points.
- Ask the audience to applaud for them.
- Ask de-brief questions to cull out the information from each group.
- Keep a check on time.

Activity 2 ⚙

- Planning the right attire

Do ✓

- Describe 2 individuals to the participants. One is wearing a casual t-shirt, jeans, and slippers. He has not combed his hair and neither has he trimmed or shaved his beard. The other individual is dressed formally with a shirt and pant, and is well-groomed. He has also worn formal shoes and a belt. Ask the participants which person would they prefer to hire in their organization and why?

Summarize 🔍

- Close the discussion by discussing 'how to prepare for an interview' as discussed in the Participant Handbook.
- You can add the following points to it:
  - Tell the participants to create a positive and good impression in an interview. It is important for them to prepare for an interview beforehand.
  - The interviewer analyses not only your technical knowledge in relation to the job, but also whether or not you are a fit for the organization.
  - Every employer looks at the whole package and not just one or two things in isolation. Therefore, the way you dress and the way you present yourself is also important along with your skills and talents.
  - The participants will get only one chance to create a good first impression.

UNIT 7.4.2: Preparing an Effective Resume: How to Create an Effective Resume?

Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the steps to create an effective Resume

Resources to be Used

- Participant Handbook
- Blank papers
- Pens

Ask

- When preparing for an interview, what are the most important things that you need to do?
- What documents do you carry with you, when you go for an interview?
- What is a resume?
- Why do you need a resume?

Say

- Resume is not just a sheet of paper with your qualifications printed on it.
- It is a selling tool that will help the employer to see how and what you can contribute for company.
- Talk about the steps involved in creating an effective/attractive resumes discussed in the Participant Handbook.
- Now let's prepare a resume to understand the process in a better way.

Do

- This is an individual activity.
- Give the details of the activity.
- Instruct them to read the activity carefully.
- The participant is expected to make an attractive resume based on the information provided.
- Give the class 25-30 minutes to study the case and create a resume.
- At the end of 30 minutes, the participants should exchange the resume with the person sitting next to him or her.
- Every participant will evaluate the resume prepared with their fellow participants.

Say

- Do you think the candidate should apply for the job posting described in the advertisement?
- We have already discussed the steps involved in creating an effective/attractive resumes.
- Now let's prepare a resume for the candidate details given in the activity.

Activity

Case Study Analysis

- In the first section of the activity, you are being given the information about a candidate who is applying for a particular job.
- In the second section, you are being given the detailed description of the job posting. Create a resume for the candidate to apply for the job posting.
- Use the information that has been provided about the candidate to create this resume.

Candidate Details

Nipesh Singla was born on 20th April, 1988 in Chandigarh, India. He currently resides at 1XX7, Sector XX D, Chandigarh –160018. His mobile number is 988XXXXX01, and e-mail address is nxxxxxxxxxla@gmail.com. Nipesh attended middle and senior school at Government Boys Senior Secondary School, Sector 15, Chandigarh. He has been a very talented boy since school. He was fond of painting and watching old Hindi movies. As part of a school charity program, he volunteered at the children's hospital during his senior years.

In July 2007, he joined Westwood School of Hotel Management, Zirakpur to pursue a diploma course in Hotel Management and Catering. After completing this course, he joined XYZ Group of Hotels as a Housekeeping intern in June 2010 for six months. In this role, he was responsible for cleanliness and maintenance of one floor in the hotel. Taking advantage of his strong interpersonal skills, he also got opportunities to make housekeeping arrangements for corporate meetings. While pursuing education, he gained working knowledge of Microsoft Word, Excel, Access and PowerPoint.

Nipesh is detail-oriented, flexible and adaptable. He has successfully worked with a diverse work force. He gelled well with his peers, both in college and during his internship. After completing the internship, his objective has been to find a job opportunity where he can use his skills and experience. Backed by experience, he is confident about his skills as housekeeping assistant.

Job Posting

* Do you see yourself as a HOUSEKEEPING SUPERVISOR?

What's your passion? Whether you're into cricket, reading or hiking, at IHG we are interested in YOU. At IHG, we employ people who apply the same amount of care and passion to their jobs as they do in their hobbies - people who put our guests at the heart of everything they do. And we're looking for more people like this to join our friendly and professional team.

THE LOCATION:

At the moment, we are looking for HOUSEKEEPING SUPERVISOR to join our youthful and dynamic team at Holiday Inn Amritsar, Ranjit Avenue in Amritsar, Punjab (India). Holiday Inn Amritsar is ideally located in Amritsar's commercial district on Ranjit Avenue with the world famous Golden Temple located only a short distance away. Sparkling chandeliers mark an incomparable arrival experience as you escape to the welcoming environment that is, Holiday Inn Amritsar. The fresh international brand to celebrate and explore Amritsar.

Salary: Negotiable

Industry: Travel / Hotels / Restaurants / Airlines / Railways

Functional Area: Hotels , Restaurants

Role Category: Housekeeping

Role: Housekeeping Executive/Assistant.

Desired Candidate Profile

Friendly, pleasant personality, Service - oriented.

You should ideally be Graduate/ Diploma holder in HM and at least 2 years of experience as a supervisor in good brand with good communication skills, English is a must.

In return we'll give you a competitive financial and benefits package. Hotel discounts worldwide are available as well as access to wide variety of discount schemes and the chance to work with a great team of people. Most importantly, we'll give you the room to be yourself.

*Please get in touch and tell us how you could bring your individual skills to IHG.

Education-

UG: Any Graduate/ Diploma holder

PG: Post Graduation Not Required

Say

- Now, let's share the resume with the fellow participant sitting next to you and evaluate each other's effort.

Do

- Congratulate each participant for making their first attempt towards creating an effective resume.
- As a follow up activity, you can suggest them to prepare their own resume and show it to you the next day.

Summarize

- Close the discussion by showing some effective resume samples to the candidates.
- Ask the participants what they have learnt from this activity.
- Ask if they have any questions related to what they have talked about so far.

Notes for Facilitation

- Keep printed copies of the activity ready for the session.
- Put down the suggested format of the resume on the board while explaining the steps in preparing a resume.
- Do check the participants' resume and suggest necessary changes.
- Suggested example for the case presented:

Nipesh Singla

#1XX7, Sector XX-D

Chandigarh-160018

Mobile No: 91-988XXXXX01

E-mail: nxxxxxxxxxla@gmail.com

Objective: Seeking an opportunity to use my interpersonal skills and experience to contribute to your company's growth, profitability and objectives.

Professional strengths:

- Proficient in housekeeping
- Experienced in and capable of working with a diverse work force
- Team player and friendly in nature
- Successful working in a multi-cultural environment

- Detail oriented, flexible, and adaptable
- Knowledge of Microsoft Word, Excel, Access and PowerPoint

Educational background:

- Diploma in Hotel Management and Catering, Westwood School of Hotel Management, Zirakpur
- High School, Government Boys Senior Secondary School, Sector 15, Chandigarh

Professional internships:

- Housekeeping Intern, XYZ Group of Hotels, New Delhi (June 2010 – August 2010)
    - Responsible for cleanliness and maintenance of one floor in the hotel.
    - Got opportunities to make housekeeping arrangements for corporate meetings.

Volunteer Work:

- Student volunteer at children's hospital in Chandigarh.

Nipesh Singla

UNIT 7.4.3: Interview FAQs

Unit Objectives ⌖

At the end of this unit, participants will be able to:

• Discuss the most frequently asked interview questions
• Discuss how to answer the most frequently asked interview questions

Resources to be Used ⚙

• Participant Handbook

Say 💬

• Tell the participants you will provide them with interview situation and questions and they have to try to answer them.
• Tell them you will also explain the different ways to approach these questions.

Do ✓

• Divide the class in pairs and ask the participants to perform a role play.
• One partner will play the role of the interviewer while the other will play the role of the interviewee.
• Tell them the interviewer can start the interview by asking the interviewee to introduce himself/herself.
• Call all the pairs one by one in front of the class to enact the role play.
• Follow the same pattern for all other situations.
• Time allotted for each situation is 8-10 minutes.
• Congratulate each participant for giving their input.
• Ask the class to applaud each time a team has completed their role play.
• Keep a check on time.

Role Play 🎭

Conduct a role play for the situation given.

Situation 1

• The interviewer will start by asking the interviewee a few generic questions such as:
  ⬥ What is your name?
  ⬥ Tell me something about yourself?
  ⬥ Can you tell me something about your family?
• Then, the interviewer will bluntly ask the following questions:
  ⬥ How do you explain this huge time gap in your resume?
  ⬥ What is the reason for this?
  ⬥ Weren't you looking for a job or is it that no one selected you?

Say

De-brief:

- When you put information on your resume, you should be prepared to answer any questions about it.
- Be present and focused on the questions being asked to you.
- One way of tackling the blunt questions is to tell the interviewer you did not come across an opportunity where you were sufficiently satisfied with both the remuneration offered as well as the profile. Therefore, you waited for the right opportunity to come along while looking for an ideal job.

Role Play

Conduct a role play for the situation given.

Role Play – Situation 2

- The interviewer will start by asking the interviewee a few generic questions such as:
    - What is your name?
    - Tell me something about yourself?
    - Can you tell me something about your family?
- Then, at the end of the interview, ask the interviewee:
    - There are over 200 people who have applied for this job, some with excellent work experience. Why should I hire you?

Say

De-brief:

- There is nothing wrong with stating your strengths and achievements. However, do not come across as arrogant or too boastful.
- You need show the interviewee that you have unique skills or talents to contribute to the company. The interviewer needs to know how you stand apart from the rest of the crowd.
- Tell the interviewer you are looking forward to working with the company and that you are a hard-working individual.

Role Play

Conduct a role play for the situation given.

Role Play – Situation 3

- The interviewer will start by asking the interviewee a few generic questions such as:
    - What is your name?
    - Tell me something about yourself?
    - Can you tell me something about your family?
- Then, lean forward, clasp your hands on the table and in a soft voice ask the interviewee:
    - Did you ever experience any neglect or disregard from your previous office? In other words, did you ever suffer because your office or team displayed favouritism?

Say

De-brief:

- Keep this in mind: Do not criticize anyone during an interview.
- You are free to express your opinion, however, your language, answers, body language, and the tone of your voice should remain constructive and neutral.
- Since criticism will show you in negative light, you should keep your answers honest yet diplomatic.
- You can tackle such questions by saying, "I got along well with most of my faculty and peers."

Role Play 🎭

Conduct a role play for the situation given.

Role Play – Situation 4

- The interviewer will start by asking the interviewee a few generic questions such as:
    - What is your name?
    - Tell me something about yourself?
    - Can you tell me something about your family?
- Then very bluntly ask the interviewee:
    - How long do you plan to stay with this company if you are selected?
- After the candidate responds, ask sarcastically:
    - Do you seriously mean that?

Say 💬

De-brief:

- Don't provide unreal and idealistic answers.

- Your answers should be honest yet diplomatic. In a situation like this, the interviewer does not expect you to provide a specific timeline.

- You can say something like, "I would like to stay with the company as long as I can contribute constructively and develop as an employee, within the organization, professionally and financially."

Role Play 🎭

Conduct a role play for the situation given.

Role Play – Situation 5

- The interviewer will start by asking the interviewee a few generic questions such as:
    - What is your name?
    - Tell me something about yourself?
    - Can you tell me something about your family?
- Ask him/her how important he/she thinks it is to be punctual in the corporate world.
- After he/she answers, look up sternly at the interviewee and in a crisp voice, say:
    - You were late for this interview by 10 minutes. That surely does not seem to be in line with what you just said?

Say 💬

De-brief:

- Politely apologize for being late.

- You can add something such as, "I assure you this is not a habit". All your future actions should be in line with this statement.

- Avoid giving any excuses.

- You might feel obligated to provide a justification for your tardiness, but the interviewer is not interested in that.

- Do not over apologize. Once this response is out of the way, turn your focus back to the interview.

Role Play 🎭

Conduct a role play for the situation given.

Role Play – Situation 6

- The interviewer will start by asking the interviewee a few generic questions such as:
  - What is your name?
  - Tell me something about yourself?
  - Can you tell me something about your family?
- After asking a few academic or job-related questions, ask the interviewee:
  - If you get this job, what salary package do you expect us to give you?

Say 💬

De-brief:

- If there is no way for you to avoid this question, respond to the interviewer by providing a reasonable and well-thought out salary range.

Role Play 🎭

Conduct a role play for the situation given.

Role Play – Situation 7

- The interviewer will start by asking the interviewee a few generic questions such as:
  - What is your name?
  - Tell me something about yourself?
  - Can you tell me something about your family?
- Then, bringing the interview to a close, ask the interviewee:
  - Do you have any questions for me?

Say 💬

De-brief:

- Ask relevant questions.
- Don't bombard the interviewer with questions.
- If you have questions about the result of the interview, you can limit your questions to 1 or 2. Keep them short and relevant like:
  - When will I be informed about the results of the interview?
  - What are the working hours?
  - Will the job require me to travel?

Explain

- Tell the participants to be prepared for answering different types of questions in an interview.
- Stay calm and focused, and take a moment to think about how you should respond. Always maintain a confident tone.
- Even if you don't intend to, your body language conveys your level of discomfort with a particular question. Try to keep your actions, tone, and gestures neutral.
- Maintain your composure while answering personal question.

Do ☑

- Tell all the participants to form pairs again.
- Tell them to use the following list of frequently asked interview questions to conduct mock interviews.
- They will use all or some of these questions to conduct mock interviews with their partners.
- One partner will play the role of the interviewer while the other will play the role of the interviewee.
- After they are through asking and answering the questions, the roles will be reversed.
- The same list of questions will be used again.
- After each mock interview ask the interviewer to provide feedback and clear any doubts that may arise.
- Time allotted for each situation is 30-35 minutes.

Activity

Mock Interview Questions

Mock Interview Questions
Tell me something about your family.
What qualities would you look for in a Manager or a Supervisor?
Why did you apply for this job?
What do you know about this company?
How do you deal with criticism?
How do you plan to strike a good work-life balance?
Where do you see yourself five years from now?
Have you applied for jobs in other companies?
What kind of salary do you expect from this job?
Do you have any questions for me?

Summarize

- Close the discussion by discussing the questions in the both activities.
- Ask the participants what they have learned from this activity.
- Ask if they have any questions related to what they have talked about so far.

UNIT 7.4.4: Work Readiness – Terms and Terminology

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Identify basic workplace terminology

Resources to be Used ⚙️

- Participant Handbook
- Chart papers
- Blank sheets of paper
- Pens

Ask 💬

- What do you understand by workplace terminology?
- Are offer letter and contract of employment the same?

Say 💬

- Let's start this unit with an activity.

Team Activity 👥

Workplace terminology

- This is a group activity conducted in three parts.

Part 1

Sheila received a call from the recruiter of MND Company. Before she is recruited by the company, think of the recruitment process she will have to go through. Start from the telephone call to signing her letter of acceptance. Write down all the words that come to your mind.

Activity De-brief

- Have the participants read out the words they have written
- Encourage all the participants to participate in the activity

---

Do ✓

- Divide the class into small groups of 4 or 6.
- Instruct the participants that they will be doing a brainstorming activity.
- Give them one chart paper each. Tell them to divide the chart in two parts.
- Instruct them that they have to use one half of the chart paper now. The other half will be used later.
- The participants have to write all the words that come to their mind related to the recruitment process.
- Give them 10 minutes to do the activity.
- Tell them that there are no right or wrong answers.
- Keep a track of the time.

Say 💬

- You all know quite a few words related to the terms used in the office.
- Let us talk about some new terms that have been missed out.
- Discuss "Work Readiness – Terms and Terminology" with the participants as given in the Participant Handbook.

Ask (ask)

- Why is it important to know the workplace terms?
- How do they help?
- Can the words be categorised further?

Say 💬

- Let's now continue the activity.

Team Activity 👥

Terms and Terminology

- This is again a group activity. The members of the group remain the same as in Activity 1.

Part 2
With the help of the new terms you have learned, make a flow chart of the hiring process of MNC Company.

Activity De-brief
• Ask the groups to share the flow charts and the new terms they added while preparing the flow chart.

Do ✓

- Instruct the participants that they have to use the 2nd half of the same chart they had used before.
- Using the new terminology and the terms they had previously written on the chart, they have to make a flow chart of the hiring process of the MNC Company.
- Give them 10 minutes for this activity.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Say 💬

- Let's go ahead with the activity.

Team Activity 👥

Terms and Terminology

- The activity continues with the same group members.

Part 3
Sheila now works for the MNC Company. She is not aware of the company culture and policies. She goes to the HR Department to get her doubts clarified. Can you think of the terms for which she wants clarity? Make a list of those words.

Activity De-brief
• Ask the groups to share their list of words. Some of the words are benefits, comp. time, deduction, employee training, holidays, lay-off, leave, maternity leave, mentor, notice, paternity leave, and time sheet.

Do

- Instruct the participants to identify the key terms an employee of a company should know. They can use the same chart paper for this activity.

- Give them 5 minutes for this activity.

- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Summarize

- Note: You can either summarize the key points of the unit or have a role play where an employee has just joined a company and the HR Manager explains the terms of employment.

UNIT 7.5: Understanding Entrepreneurship

Key Learning Outcomes

At the end of this unit, participants will be able to:

1. Discuss the concept of entrepreneurship
2. Discuss the importance of entrepreneurship
3. Describe the characteristics of an entrepreneur
4. Describe the different types of enterprises
5. List the qualities of an effective leader
6. Discuss the benefits of effective leadership
7. List the traits of an effective team
8. Discuss the importance of listening effectively
9. Discuss how to listen effectively
10. Discuss the importance of speaking effectively
11. Discuss how to speak effectively
12. Discuss how to solve problems
13. List important problem solving traits
14. Discuss ways to assess problem solving skills
15. Discuss the importance of negotiation
16. Discuss how to negotiate
17. Discuss how to identify new business opportunities
18. Discuss how to identify business opportunities within your business
19. Explain the meaning of entrepreneur
20. Describe the different types of entrepreneurs
21. List the characteristics of entrepreneurs
22. Recall entrepreneur success stories
23. Discuss the entrepreneurial process
24. Describe the entrepreneurship ecosystem
25. Discuss the purpose of the Make in India campaign
26. Discuss key schemes to promote entrepreneurs
27. Discuss the relationship between entrepreneurship and risk appetite
28. Discuss the relationship between entrepreneurship and resilience
29. Describe the characteristics of a resilient entrepreneur
30. Discuss how to deal with failure

UNIT 7.5.1: Concept Introduction (Characteristic of an Entrepreneur, types of firms/ types of enterprises)

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Discuss the concept of entrepreneurship.
- Discuss the importance of entrepreneurship.
- Discuss the characteristics of an entrepreneur.
- Describe the different types of enterprises.

Resources to be Used ⚙️

- Participant Handbook

Say 💬

- Let's start this session with some interesting questions about Indian entrepreneurs.

Team Activity 👥

Quiz Questions

1. Who is the founder of Reliance Industries?

   Dhirubhai Ambani

2. Who is the Chairman of Wipro Limited?

   Azim Hashim Premji

3. Who launched e-commerce website Flipkart?

   Sachin Bansal and Binny Bansal

4. Who is the founder of Paytm?

   Vijay Shekhar Sharma

5. Who is CEO of OLA Cabs?

   Bhavish Aggarwal

6. Who is the founder of Jugnoo?

   Samar Singla (autorickshaw aggregator)

7. Who is the founder of OYO Rooms?

   Ritesh Agarwal

Do ✓

- Tell them that you will ask them few questions about a few entrepreneurs.
- Divide the class in to two groups.
- In turns ask the quiz questions to the groups.
- If the answer is incorrect pass the question to the other group.
- Share the answer if the groups are not able to answer.
- Congratulate the participants who answered correctly.

Ask

- What do you understand by entrepreneurs?
- What is the importance of entrepreneurship in today's scenario?
- What do you think are the characteristics of successful entrepreneurs?
- What are different types of enterprises that an entrepreneur in India can own and run?

Say

- Talk about entrepreneurs, importance of entrepreneurship, characteristics of successful entrepreneurs, and different types of enterprises in India as discussed in the Participant Handbook.
- Tell the participants, stories of successful Indian entrepreneurs- their struggles, the moments of heartbreak, the perseverance and triumph.
- Ask them if they know of any such entrepreneur.

Summarize

- Close the discussion by summarizing about the opportunities for entrepreneurs in India.

Notes for Facilitation

- Check out different Government schemes for small entrepreneurs. Share the information with the participants.
- You can tell them about the government websites like Start Up India, mudra.org.in etc.
- Discuss about various schemes and policies by the Government of India for entrepreneurs.

UNIT 7.5.2: Leadership and Teamwork

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- List the qualities of an effective leader
- Discuss the benefits of effective leadership
- List the traits of an effective team

Resources to be Used ⚙️

- Participant Handbook
- Blank sheets of paper
- Pens

Do ✓

- Show the picture given below to the class.
- Ask them to quickly write on a piece of paper what comes to their mind after seeing the picture.
- Now ask them, "What do you understand from this picture?"
- Encourage participants to share their thoughts.
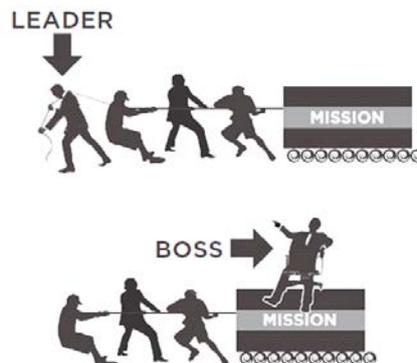
Say 💬

- This picture depicts the qualities of a leader and the difference between a leader and a boss.
- A boss focuses on structure and inspires fear whereas a leader follows vision and generates enthusiasm.
- A boss blames employees for the breakdown whereas a leader fixes breakdowns.
- A boss depends on authority whereas a leader depends on goodwill.
- A boss says "I" and a leader says "We."
- A boss drives employees whereas a leader coaches them.
- A boss takes credit whereas a leader gives credit.

Say 💬

- Talk about leadership and leadership qualities for an entrepreneur as discussed in the Participant Handbook.

Ask 💬

- Why is it important for a leader to be effective? How does it help the organization?

Say 💬

- Let us discuss benefits of effective leadership as discussed in the Participant Handbook.
- "Out-of-the-box thinking" is one of the new leadership styles. It means thinking differently and from a new perspective.

Ask 🔘

- Do you consider yourself a team player?

Team Activity 👥

Long Chain

- This is a group activity.

Do ✓

- Divide the class into 2 teams.
- Ask each team to create a chain using materials they have in class such as shoe laces, belts, paper, handkerchief, ribbons, etc.
- The team that creates the longest chain wins the game.
- Observe if the participants are interacting with their team or working in isolation.
- Share your observations with the class.

Say 💬

De-brief:

- What did the winning team do differently?
- Who was responsible for the winning team's success?
- How does this activity explain the role of teamwork in entrepreneurial success?

Say 💬

- Tell the class that both the teams performed well.
- Discuss that the objective of this activity was to open communication channels and how this has been achieved.
- The participants should aim to keep the communication channels open when interacting with their peers and team members.
- It will set the pace and enthusiasm required for all the ensuing teamwork activities.
- Talk about teamwork and importance of teamwork in entrepreneurial success as discussed in the Participant Handbook.

Summarize 🔍

- Close the discussion by summarizing about the importance of teamwork for employees.
  - Teamwork helps in reducing stress for the employees.
  - Teamwork helps employers in generating more number of solutions to a problem and developing improved communication amongst employees.
- Ask the participants what they have learned from these exercises.
- Ask if they have any questions related to what they have talked about so far.

UNIT 7.5.3: Communication Skills: Listening & Speaking: The Importance of Listening Effectively

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Discuss the importance of listening effectively
- Discuss how to listen effectively
- Discuss the importance of speaking effectively
- Discuss how to speak effectively

Resources to be Used ⚙️

- Participant Handbook

Activity 1 🛠️

Activity – Chinese Whisper

Step 1: Form a circle.
Step 2: Start a whisper chain. Any one participant will whisper a message into his/her neighbour's ear. No one else must hear the message. The message can be serious or downright silly.
Step 3: The next person who first heard the message should whisper the message very quickly to the person sitting next to them.
Step 4: The game goes on until the last person says whatever they heard out loud and the first person reveals the real message.
Compare them and have a great laugh!

Ask 💬

De-brief questions:

- Was the original message the same as the message that is communicated at the end of the game?
- Why do you think there was a difference in the messages?

Say 💬

- No, the original message was not same at the end of game.
- The barriers to communication like language, disturbance and noise, poor listening skills, boredom, poor speaking skills, etc. are the potential reasons this happens.
- There are various aspects to communication. Speaking skills and listening skills are two major components to any communication. There is always some room for improvement in the way we communicate.
- It is important to accept the reality of miscommunication and work to minimise its negative impacts.

Say

- Communication is a two-way process where people exchange information or express their thoughts and feelings
- It involves effective speaking and effective listening.
- If I go to the store to get bread, I exchange money for the bread. I give something and get something in return. Communication takes place in the same manner. You have to provide and receive information for communication to take place.

Ask

- How often do you hear these statements?
  - "You're not listening to me!"
  - "Why don't you let me finish what I'm saying?"
  - "You just don't understand!"
- What do you think the other person is trying to convey to you through these sentences?
- We will not talk about the importance of listening effectively as discussed in the Participant Handbook.

Say

- Let's play a game to understand effective listening process better.

Do

- This is a class activity.
- The participants need to answer the questions they hear.
- Instruct them to listen carefully.
- You will read it at a stretch and if need be repeat it once more.
- Tell the participants to raise their hand if they know the answer to the question asked.
- Keep a check on time.

Activity 2

Riddles:

Is there any law against a man marrying his widow's sister?
If you went to bed at eight o'clock at night and set the clock's alarm to ring at nine o'clock, how many hours of sleep would you get?
Do they have a 26th of January in England?
If you had only one match and entered a dark room that had a kerosene lamp, oil heater, and a wood stove, what would you light first?
The Delhi Daredevils and the Chennai Super Kings play five IPL matches. Each wins three matches. No match was a tie or dispute. How is this possible?
There was an airplane crash. Every single person died, but two people survived. How is this possible?
If an airplane crashes on the border of two countries, would unidentified survivors be buried in the country they were travelling to or the country they were travelling from?
A man builds an ordinary house with four sides except that each side has a southern exposure. A bear comes to the door and rings the doorbell. What is the colour of the bear?

Answers:

There's no law against a man marrying his widow's sister, but it would be the neatest trick in the book since to have a widow, the man would have to be dead.
You'd get one hour's sleep since alarm clocks do not know the difference between morning and night.
Oh, yes. They have a 26th of January in England. They also have a 27th, a 28th, and so on.
First of all, you would light the match.
Who said the Delhi Daredevils and the Chennai Super Kings were playing against each other in those games?
Every SINGLE person died, but those two were married.
You can't bury survivors under any law especially if they still have enough strength to object.
The bear that rang the doorbell would have to be a white bear. The only place you could build a house with four southern exposures is at the North Pole where every direction is in South.

Ask

De-brief question:

- What were the barriers that came into your way of listening?
- How can you overcome barriers to listening?

Say

- There is a difference between hearing and listening.
- If you don't listen properly, the message may be misunderstood.
- Be open-minded while listening to someone.
- It is important to listen effectively and carefully without making assumptions.

Activity 3

Elevator Pitch:

You are in the lift of a hotel and you bumped into your former client who is a famous businessman. He has financed a lot of small business ventures and can finance your new start-up too. After exchanging pleasantries, he asks you what your new company does. You open your mouth, and then pause. Where do you even begin?

Then, as you try to organize your thoughts, his meeting is called, and he is on his way. If you would been better prepared, you're sure that he would have stayed long enough to schedule a meeting with you too.

If you were given another chance, what would you have said to this person?

Do

- Start off the task by providing a beginning sentence to get the story started, and then go around the classroom getting each one to add a new sentence to keep the story going.
- This task should be done spontaneously allowing only a little time to think (30 seconds).
- For example: **There was once a student who was looking for a job after graduation.**

Notes for Facilitation

- Tell the participants to follow these steps to create a great pitch, but bear in mind that you'll need to vary your approach depending on what your pitch is about.

  1. **Identify Your Goal:** Start by thinking about the objective of your pitch. For instance, do you want to tell the potential clients about your organization? Do you have a great new product idea that you want to pitch to an executive or do you want a simple and engaging speech to explain what you do for a living?

  2. **Explain What You Do:** Start your pitch by describing what your organization does. Focus on the problems that you solve and how you help people. Ask yourself this question as you start writing: what do you want your audience to remember most about you? Keep in mind that your pitch should excite you first. After all, if you don't get excited about what you're saying neither will your audience. People may not remember everything that you say, but they will likely remember your enthusiasm.

  3. **Communicate Your USP:** Your elevator pitch also needs to communicate your unique selling proposition or USP. Identify what makes you, your organization or your idea unique. You'll want to communicate your USP after you've talked about what you do.

  4. **Engage with a Question:** After you communicate your USP, you need to engage your audience. To do this, prepare open-ended questions (questions that can't be answered with a "yes" or "no" answer) to involve them in the conversation. Make sure that you're able to answer any questions that he or she may have.

  5. **Put it all Together:** When you've completed each section of your pitch, put it all together. Then, read it aloud and use a stopwatch to time how long it takes. It should be no longer than 20-30 seconds. Remember, the shorter it is, the better!

Example:

Here's how your pitch could come together:

"My company deals with cloth retail online business and we use various e-commerce platforms to sell our products. This means that you can do shopping with ease and spend time on other important tasks. Unlike other similar companies, we have a strong feedback mechanism to find out exactly what people need. This means that, on average, 95 percent of our clients are happy with our products. So, how can you help us in creating our own web portal?

  6. **Practice:** Like anything else, practice makes perfect. Remember, how you say it is just as important as what you say. If you don't practice, it's likely that you'll talk too fast, sound unnatural or forget important elements of your pitch. Set a goal to practice your pitch regularly. The more you practice, the more natural your pitch will become. Practice in front of a mirror or in front of colleagues until the pitch feels natural.

Summarize

- Close the discussion by summarizing how to speak effectively as discussed in the Participant Handbook.

UNIT 7.5.4: Problem Solving & Negotiation Skills

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Discuss how to solve problems
- List the important problem solving traits
- Discuss ways to assess problem solving skills
- Discuss the importance of negotiation
- Discuss how to negotiate

Resources to be Used ⚙

- Participant Handbook

Ask 💬

- What is a 'problem'?
- What do you think are the problems you may face in the process of becoming a successful entrepreneur?

Say 💬

- Discuss the definition of problem as given in the Participant Handbook.
- In a hurdle race the hurdles are the obstacles on the way to reach your goal.
- Similarly, obstacles are the hurdles you may face while reaching your goal i.e. to set-up your own business. Your goal will be to reach the finishing line after crossing these hurdles.

Ask 💬

- What do you do when you face a problem?
- How do you resolve it? You can pick examples from the question asked previously 'the problems they are likely to face in the process of becoming a successful entrepreneur'.

Say 💬

- Discuss how to solve problems as given in the Participant Handbook.

Team Activity 🤝

- This is a group activity.
- The groups will solve the problem and come up with the best solution in each case.
1. Unable to arrange for some extra finance for setting up a beauty parlour. The loan sanctioned and disbursed is not enough. You have tried all your contacts, friends and relatives. But unable to manage the extra amount. Bank will not sanction more amount as you have used up the complete sanction limit.
2. You have rented a space for your business and all arrangements are done. You will be operating from the office space rented in two days. Now the owner comes up to you and says he wants to sell the place and wants you to vacate in 15 days.
3. You have just set up your business and need extra human resource. You have tried invieing a few also tied up with an agency for getting the right candidate. But you are unable to get the right candidate. If the candidate is good, you cannot offer the salary demanded. If the candidate agrees to the salary, he/she has other demands like working hours to be reduced, leaves etc. which may not work for your set up.

Do

- Divide the class into three groups. Give one scenario to each group.
- Explain the purpose and duration of the activity.
- Ask the groups to build on the scenario and present their solution as a role play.

Say

De-brief questions:

1. What was the problem?
2. Is there any other alternative solution?
3. Is this the best solution presented?

Ask

- Try to think of some people around you who are able to solve problems very easily. Even you or your friends might be approaching them when there is a problem. What qualities do they have? What personality traits do such people possess?

Say

- Discuss the important traits for problem- solving as given in the Participant Handbook.

Ask

- In order to build a successful organization, you need to hire people who possess good problem solving skills. How would you assess the level of problem solving skills of potential candidates before hiring them?

Say

- Discuss how to assess for problem- solving skills as given in the Participant Handbook.

Summarize

- Ask the participants the things that they have learnt so far.
- Ask if they have any questions related to what they have talked about so far.
- Summarize the discussion on problem solving.

Activity

- The activity is to organise an election event. Select three volunteers from the group. They have to give a speech on their election manifesto to the class. They have to negotiate with the fellow participants and convince them to vote for them. The best negotiator will win the election.

Do

- Ask three participants to volunteer for the activity.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Ask

- Out of the three contestants, whom would you support? Why? What did they say or do which convinced you to make your decision?
- Have you ever tried to negotiate in your personal or professional life?
- Ask the class to share some of their experiences where they have been able to strike a deal by negotiating.

Say

- Discuss "What is Negotiation?" as given in the Participant Handbook.

Ask

- Why is it important to negotiate? As an entrepreneur, where do you think that negotiation skills will be needed?

Say

- Discuss the importance of negotiation while starting a business as given in the Participant Handbook.

Say

- Discuss the important steps to negotiate as given in the Participant Handbook.

Role Play

- Conduct a role play activity.
- Ask the participants to assemble together.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.

Do

- Divide them into groups of four (4) (depending on the batch size).
- Give them the hand-outs for role play scenarios.
- Two groups to be given scenarios on problem solving.
- Other two groups to be given scenarios on negotiation.
- The groups will build on the scenarios and prepare for the role play.
- Give the groups atleast 5 mins to discuss and be ready with the role play.
- Invite each group one by one to come and present their role play.

> **Problem solving Scenario 1**
>
> Avinash has a Mobile Repair Store in Allahabad. His outlet is one of the most popular one in the vicinity and he has great rapport with his customers. He is always well-dressed, jovial and full of energy.
>
> It's around 11 AM, when a customer barges in to the shop and starts shouting at Avinash for giving her back the instrument which is still not working. The screen of her mobile is also cracked from one side. Avinash remembered thoroughly checking the handset before handing it over to the customer. The customer threatens to sue the company and to go to Consumer Court for cheating her.

Problem solving Scenario 2

You are running a successful small scale business, Shreeji Aggarbattis,. Your staff members do door to door selling and organise marketing campaigns in local markets. Your brand has established it's name in last few years.

Recently, lot of customers have been coming to you and lodging complaints that your staff members indulge in malpractices. Few of them informed you that a staff member engaged them in a friendly conversation. In the meanwhile, the other gave them lesser packets of aggarbattis than they paid for.

Another set of customers lodged complaint about the misconduct and rude behaviour of a particular staff member.

You often hear from your customers that the orders don't get delivered on time or wrong products get delivered.

You have already been struggling with shortage of staff and such complaints are a serious concern as it is hampering your brand image. What strategies will you adopt to solve this problem?

Negotiation Scenario 1

You have interviewed a prospective new employee who could be a key member of your new entrepreneurial venture. The new person is demanding a salary that is 20% higher than you thought based on your business plan. Finances are tight, yet you believe this person could make a significant impact on future profits. If you paid the required salary for the new person, then you would have to restructure your entire business plan. You've been searching for an individual with this skill level for three months. to the candidate is waiting for your response. Now you have to call him in to make the final negotiations.

Negotiation Scenario 2

You are a young entrepreneur who has just registered his start up project and applied for a bank loan accordingly. You receive a letter saying that your loan application has been rejected as your start up idea did not appeal to the bank and they think that it is not a revenue generating model. You have taken an appointment to meet the manager and show your negotiation skills to get your loan approved.

Notes for Facilitation

Facilitating Role Plays

Preparing for the activity

1. Carefully review the details of the scenario and the character descriptions.
2. Become familiar with the key issues being addressed in the scenario.
3. Study the provided material so that you are ready to address issues related to the situations depicted in the role-plays.
4. Anticipate and know how to address issues participants might raise during the activity.

Conducting the activity

1. Introduce the activity. Emphasize that role-playing provides participants with an opportunity to apply their new knowledge, skills, and tools in situations that simulate actual interactions with customers.
2. Ask participants to form pairs. Direct the members of each group to choose who will play the roles. Remind the groups that each participant should be given the opportunity to play/practice the different roles.
3. Conduct a demonstration so that participants become familiar with the expectations related to the roles and support materials.
4. Give the pairs/ groups 10 to 15 minutes to conduct the role-play (depending on the duration of the session).
5. After all the groups have finished with the role-play, conduct a debriefing session on each role-play.
6. Ask the groups to take five minutes to talk about what happened during the role-play. The groups should discuss the questions given in the debriefing for each role-play. Encourage participants to provide constructive criticism during their discussions.

Summarize

• Wrap the unit up after summarizing the key points and answering questions.

UNIT 7.5.5: Business Opportunity Identification: Entrepreneurs and Opportunities

Unit Objectives 🎯

At the end of this unit, participants will be able to:

• Discuss how to identify new business opportunities
• Discuss how to identify business opportunities within their business

Resources to be Used ⚙️

• Participant Handbook
• Blank sheets of paper
• Pens

Ask 💬

• How does an entrepreneur identify an opportunity?
• What do you think are the common queries or concerns faced by entrepreneurs?
• How can you identify new business opportunity?

Say 💬

• Let's talk about opportunity, common queries or concerns faced by entrepreneurs, idea as an opportunity, factors to consider when looking for opportunities, ways to identify new business, and opportunity analysis as discussed in Participant Handbook.
• Let's do an activity to understand ways to identify business opportunities within your business.

Do ✓

• Tell the class that this is an individual activity.
• Tell the participants to create a matrix on their notebooks.
• There will be four boxes in your matrix.
• Strength, Weakness, Opportunity and Threats will be the four headings of the matrix. This is called the SWOT matrix.
• Read out the questions to them and tell the participants they need to answer the questions asked in each matrix.
• Tell them they can also use their own understanding of themselves to fill the SWOT matrix.

Activity ⚙️

Do your SWOT analysis

Strength	Weakness
What are your strengths? What unique capabilities do you possess? What do you do better than others? What do others perceive as your strengths?	What are your weaknesses? What do your competitors do better than you?
Opportunity	**Threat**
What trends may positively impact you? What opportunities are available to you?	Do you have solid financial support? What trends may negatively impact you?

Do

- Congratulate everyone for the class activity.
- Ask the audience to applaud for themselves.
- Allot the participants sufficient time to complete this activity, but do keep a check on time.
- Ask de-brief questions to cull out information from the participants.

Ask

De-brief questions:

- What are your weaknesses according to your SWOT analysis?
- Do you think you can change your weakness into strength? How?
- Do you think you can work on your threats? How?

Summarize

- Close the discussion by summarizing ways to identify business opportunities within your business.
- Ask the participants what they have learned from this exercise.
- Ask if they have any questions related to what they have talked about so far.

UNIT 7.5.6: Entrepreneurship Support Eco-System

Unit Objectives ⊚

At the end of this unit, participants will be able to:
- Explain the meaning of entrepreneur
- Describe the different types of entrepreneurs
- List the characteristics of entrepreneurs
- Recall entrepreneur success stories
- Discuss the entrepreneurial process
- Describe the entrepreneurship ecosystem
- Discuss the purpose of the 'Make in India' campaign
- Discuss the key schemes to promote entrepreneurs

Resources to be Used ⚙

- Participant Handbook
- Chart papers
- Marker pens
- Pencils
- Colour pencils
- Scale
- Eraser
- Other requisite stationery material

Ask ask

- Do you think that entrepreneurs need support?
- What do you think is an eco-system?
- What do you think 'entrepreneurship support eco-system' means?

Say 💬

- Let's learn what entrepreneurship support eco-system means.
- Discuss 'Entrepreneurship Support Eco-System' as given in the Participant Handbook.

Ask ask

- Can you define entrepreneurship support eco-system?
- What are the key domains of the support eco-system?

Say 💬

- Let's learn more about these domains by conducting an activity.
- You have to make a poster showing the components of the six main domains of entrepreneurship support eco-system.

Team Activity 🤼

- Making a poster showing the entrepreneurship support eco-system.

Do ☑

- Divide the class into groups of four or six.
- Hand out chart paper and coloured pens.
- Explain the purpose and duration of the activity.
- Go around checking the progress of each group.
- Set guidelines pertaining to discipline and expected tasks.

Activity De-brief

Ask each group to display their poster and explain the key domains of entrepreneurship support eco-system.
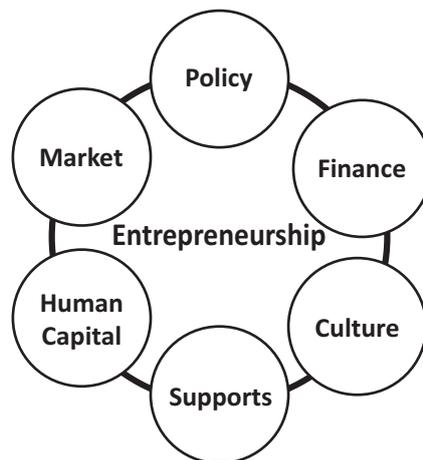
Ask ⓐsk

- What kind of government support eco-system is available for entrepreneurs in India?

Say 💬

- Discuss 'Make in India' campaign as given in the Participant Handbook.

Team Activity 👥

- Presentation on key schemes to promote entrepreneurs

Do ☑

- Divide the class into pairs.
- Number each pair from 1-15.
- Assign a scheme, same as their group number, to each group.
- Ask them to read the scheme carefully and present it to the class.
- Explain the purpose and duration of the activity.
- Go around checking the progress of each group.
- Set guidelines pertaining to discipline and expected tasks.

Activity De-brief

- Ask each group to explain the scheme offered by government to promote entrepreneurs.

Summarize 🔍

- Summarize the unit by discussing the key points and answering questions the participants may have.

UNIT 7.5.7: Risk Appetite & Resilience

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Discuss the relationship between entrepreneurship and risk appetite
- Discuss the relationship between entrepreneurship and resilience
- Describe the characteristics of a resilient entrepreneur

Resources to be Used ⚙️

- Participant Handbook
- Chart papers
- Blank sheets of paper
- Pens
- Marker pens

Ask 🗨️

- Can you define risk or explain what constitutes a risk?
- What do you people mean when they say, "This may be a risky proposition"?
- What risks are they talking about?

Example 📍

- Let's have a look at these two examples:

> Rohit and his family were travelling by car from Delhi to Nainital. It was their second trip there. Rohit was familiar with the road. His friends told him that the highway after Rampur was in a bad condition. They advised him to take a shortcut and turn left from Moradabad and take the Kaladhungi road. This road is in a better condition.
>
> Since he was going with his family, and did want take the risk of getting lost, he left early. He took the Kaladhungi road and reached Nainital well in time.

> Suresh and his family too were travelling by car from Delhi to Nainital. It was their second trip there. His friends too advised him to take a shortcut and turn left from Moradabad and take the Kaladhungi road as this road was in a better condition.
>
> Suresh too decided to take the Kaladhungi road but he left Delhi in the afternoon. It was dark by the time he reached Kaladhungi, and he was sure that he was taking the correct turn. As it was late, he could not find anyone to give him directions. He ended up being in an unknown place that was scarcely inhabited.

Say 🗨️

- Let's see what type of risks Rohit and Suresh took.
- Discuss 'Risk Appetite and Resilience' with the participants as given in the Participant Handbook.

Say 🗨️

- Let's learn more about risk appetite and resilience with the help of an activity.

Team Activity

Risk Appetite

- This is a group activity.

- In the previous unit, you read success stories of Mr Dhirubhai Ambani and Dr Karsanbhai Patel.
- Mr Ambani left his job and started his company Reliance with just Rs. 50,000/-.
- Dr Patel kept his job, went door-to-door to sell Nirma, and only when the brand started gaining popularity did he start his own company.
- What types of risk did both of them take?
- What risk factors, do you think, did they keep in mind before launching their company?
- Write the Risk Appetite Statement of both the companies.

Activity De-brief

- Who took a greater risk?
- What are the differences between the Risk Appetite Statement of both the companies?

Do

- Instruct the participants that this is group work.
- Divide the class into small groups of 4.
- Give each group a chart paper.
- Tell the participants that they have to evaluate the risks taken by Mr Dhirubhai Ambani and Dr Karsanbhai Patel.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Ask

- Do you think all entrepreneurial ventures are successful?
- What happens if the first venture is not successful?
- Should the entrepreneur stop when faced with challenges or face them?

Example

- Let's have a look at the following example:

Vijay Shekhar Sharma is the founder of Paytm, which is a giant Indian e-commerce. He was born in a middle-class family in Uttar Pradesh. He started his first job at an MNC. He quit after six months and built a company One97 with his friends. As One97 grew bigger, it needed more money because it was running more servers, bigger teams, and had to pay royalty. At that time, the tech bubble popped and technology companies were running in losses. Finally, money ran out. So One97 took loans and then more loans at higher rates of interest, as high as 24 per cent, and became caught in a vicious cycle.

In 2014, Paytm was launched with online wallet services after which, the company enabled online payment transactions. The company got licenses from RBI in 2016 to launch India's first ever payment bank. Moreover, the main motive of Paytm was to transform India into a cashless economy.

After demonetization came into effect, Vijay Shekhar Sharma started promoting online and digital transactions to deal with the cash crunch. In fact, the service of the company's mobile wallet is accepted across India. The logo of Paytm is now popular almost everywhere from tea stalls to major companies.

Say 💬

- Let's see what qualities made Vijay Shekhar Sharma a resilient entrepreneur.
- Discuss Entrepreneurship and Resilience with the participants as given in the Participant Handbook.

Say 💬

- Let's learn more about entrepreneurship and resilience with the help of an activity.

Team Activity

Entrepreneurship and Resilience
- This is a group activity.

- Think of some entrepreneurship ventures that faced challenging times, but later resulted in success stories.
- Who is the founder of that company?
- What challenging times did it face?
- How did it overcome those challenges?
- List the resilient characteristics of the entrepreneur.

Activity De-brief
- Each group to give their presentation.
- Why did you choose this company?
- What is the success story of the company?

Do ✓

- Instruct the participants that this is group work.
- Divide the class into small groups of 4.
- Give each group a chart paper.
- Tell the participants that they have to think of an entrepreneur who faced challenging times, but eventually succeeded.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Summarize

- You can summarize the key points of the unit.
- Ask the participants what they learned from the activities.
- Clarify any questions or doubts they might have.

UNIT 7.5.8: Success and Failures

Unit Objectives

At the end of this unit, participants will be able to:

• Discuss how to deal with failure

Resources to be Used

• Participant Handbook

Ask

• Have you heard the quote 'nothing is impossible'?

• What do you think it means?

• Do you think that all successful entrepreneurs became famous overnight or did they have to struggle or face failure before succeeding?

Example

• Let's have a look at this example.

> Shah Rukh Khan, also known as, SRK or King Khan is a force to reckon with. Did he achieve stardom overnight? Shah Rukh Khan, who has seen many struggles in his life – he has slept on streets, struggled to support himself and his sister at a very young age, and lost his parents very early in life, which led to his sister seeking mental health support. Amidst all the chaos and challenges, he kept pushing himself, and today he stands tall as the 'Badshah of Bollywood'. Certainly those years were not easy for him.
>
> When he was young, he stood at Marine Drive and said, "I will rule this city one day". Failure was not just his companion during or before his stardom, it is still a substantial part of his life. Success does not come easy. What made him a star was his acceptance of failure and the urge to improve.

Say

• How do you define success and failure?

• What is fear?

• Discuss "success and failure" with the participants as given in the Participant Handbook.

Ask

• Have you felt or experienced fear?

• What led you to feel that emotion?

• How did you handle it?

Say

• Let's learn the about success and failure with the help of an activity.

Team Activity

- Divide the class into groups of four.
- Instruct them to think of one scenario where they have to interview a successful entrepreneur.
- Explain the purpose and duration of the activity.
- Set guidelines pertaining to discipline and expected tasks.
- They have to choose one person from the group as the interviewee and one as the interviewer.
- Go around and make sure they have understood what is to be done and are discussing the roles properly.
- Check that everyone understands their role. Give clarifications if needed. Give the participants about 5 minutes to discuss and decide their roles.
- Ask the groups to stop the discussion as soon as the time is over.
- Invite each group one by one to come and present their interview as a role play.

Notes for Facilitation

Facilitating Role Plays

Preparing for the activity

1. Carefully review the details of the scenario and the character descriptions.
2. Become familiar with the key issues being addressed in the scenario.
3. Study the provided material so that you are ready to address issues related to the situations depicted in the role plays.
4. Anticipate potential questions that might be raised by the participants and be ready to address them.

Conducting the activity

1. Introduce the activity. Emphasize that role playing provides participants with an opportunity to apply their new knowledge, skills, and tools in situations that simulate actual interactions with customers.
2. Ask participants to form pairs. Direct the members of each group to choose who will play the roles. Remind the groups that each participant should be given the opportunity to play/practice the different roles.
3. Conduct a demonstration so that participants become familiar with the expectations related to the roles and support materials.
4. To maintain spontaneity of the interactions during the role play, ask the participants not to discuss the details of their roles prior to the role play.
5. Give the pairs 15-20 minutes to conduct the role play.
6. Circulate among the groups to answer any questions that may arise and provide guidance as needed.
7. After all the pairs have finished with the role play, conduct a de-briefing session on each role play.
8. Ask the groups to take five minutes to talk about what happened during the role play. The groups should discuss the questions given in the de-briefing for each role play. Encourage participants to provide constructive criticism during their discussions.
9. Conclude the activity by asking participants to think about whether and how they might use scripted role plays in their real life.

Summarize

- Wrap the unit up after summarizing the key points and answering questions.

UNIT 7.6: Preparing to be an Entrepreneur

Key Learning Outcomes

At the end of this unit, participants will be able to:

1. Discuss how market research is carried out
2. Describe the 4 Ps of marketing
3. Discuss the importance of idea generation
4. Recall basic business terminology
5. Discuss the need for CRM
6. Discuss the benefits of CRM
7. Discuss the need for networking
8. Discuss the benefits of networking
9. Discuss the importance of setting goals
10. Differentiate between short-term, medium-term and long-term goals
11. Discuss how to write a business plan
12. Explain the financial planning process
13. Discuss ways to manage your risk
14. Describe the procedure and formalities for applying for bank finance
15. Discuss how to manage their own enterprise
16. List the important questions that every entrepreneur should ask before starting an enterprise

UNIT 7.6.1: Market Study/ The 4Ps of Marketing/ Importance of an IDEA: Understanding Market Research

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Discuss how market research is carried out
- Describe the 4 Ps of marketing
- Discuss the importance of idea generation

Resources to be Used ⚙️

- Participant Handbook
- Chart papers
- Markers pens
- Blank sheets of paper

Ask 🗨️

- Suppose, you want to open a restaurant, what are the factors you will consider?
- How will you promote your restaurant?

Example 📍

- Let's have a look at this example.

  Arjun was an MBA working in a company. But he wanted to start a low cost budget hostel for foreign tourists coming to India. He did a lot or market research before starting the project. Based on the information he gathered, he made his business plan. His hostel is now flourishing and he is thinking of expanding to other tourist destinations.

Say 💬

- Discuss "Market Study" with the participants. Refer to the Participant Handbook.
- Let's learn about market study and research with the help of an activity.

Team Activity 👥

Market Study

- This is a group activity.
- You want to start your own tuition centre.
- What type of research will you do?

Activity De-brief

- Ask each group to come forward and give a brief presentation.
- Encourage other groups to be interactive and ask questions.
- What factors did you keep in mind while doing your research?
- Based on our research would you go ahead and open a tuition centre?

Do ☑

- Instruct the participants that this is group work.
- Divide the class into small groups of 4 or 6.
- Give each group a chart paper.
- Tell the participants that they have to start their own tuition centre.
- Give the participants 10 minutes to discuss and write the research work they need to do.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Say 💬

- By opening a tuition centre you are offering a service.

Ask (ask)

- What factors will you keep in mind before opening it?

Say 💬

- Discuss "The 4Ps of Marketing" with the participants as given in the Participant Handbook.

Say 💬

- Let's learn about the 4Ps of Marketing with the help of an activity.

Team Activity 👥

4 Ps of Marketing

- This is a group activity.
- You have to sell a pen to four different segments:
    1. Rural villagers
    2. Rural middle class
    3. Urban middle class
    4. Upper end rich people (Niche market)

Keeping the 4Ps of Marketing in mind, what marketing strategy will you design to sell the pen?

Activity De-brief

- Ask each group to to present their strategy.
- Encourage other groups to be interactive and ask questions.

Do ☑

- Instruct the participants that this is group work.
- Divide the class into four groups.
- Give each group a chart paper.
- Assign each group a target audience for selling the pens:
    1. Rural villagers
    2. Rural middle class
    3. Urban middle class

4. Upper end rich people

- Tell the participants that they have to design a marketing strategy keeping the 4Ps of Marketing in mind.

- Give the participants 20 minutes to discuss and come up with their strategy.

- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit

Activity De-brief

- Ask each group to come forward and give a brief presentation.

- Ask each group what they kept in mind while designing their marketing strategy.

- Encourage other groups to be interactive and ask questions.

Say

- Each entrepreneur has an idea of wants he wants to sell. It may be a service or a product.

- Discuss "Importance of an IDEA" as given in the Participant Handbook.

Summarize

- Summarize the key points of the unit.

- Ask the participants what they learnt from the activities.

- Encourage them to ask if they have any doubts.

UNIT 7.6.2: Business Entity Concepts

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Recall basic business terminology

Resources to be Used ⚙️

- Participant Handbook

Say 💬

- Let's recall some basic business terminology.
- Discuss the Business Entity Concepts as given in the Participant Handbook.
- Let's learn some basic business terminology by having an activity.
- We will have a quiz today.

Activity ⚙️

- The activity is a quiz.

Do ✓

- Divide the class in two groups and give a name to each group.
- Explain the rules of the quiz. For each correct answer the group gets 1 mark.
- If the group is unable to answer the question is passed to the next group.
- Explain the purpose and duration of the activity.
- Ask the questions of the quiz.
- Keep a score of the groups.
- Set guidelines pertaining to discipline and expected tasks.

Summarize 🔍

- Summarize the unit by discussing the key points.

Notes for Facilitation 📝

QUESTIONS FOR THE QUIZ

1. What does B2B mean?

    Business to business

2. What is a financial report?

    A comprehensive account of a business' transactions and expenses

3. Who is a sales prospect?

    A potential customer

4. How is working capital calculated?

    Current assets minus current liabilities

5. What is an estimation of the overall worth of a business called?

   Valuation

6. You are buying a house. What type of transaction is it?

   Complex transaction

7. How will you calculate the net income?

   Revenue minus expenses

8. How is Return on Investment expressed?

   As percentage

9. How will you calculate the cost of goods sold?

   Cost of materials minus cost of outputs

10. What is revenue?

    Total amount of income before expenses are subtracted.

11. What is a Break-Even Point?

    This is the point at which the company will not make a profit or a loss. The total cost and total revenues are equal.

12. What is the formula used to calculate simple interest?

    $A = P(1 + rt)$; $R = r * 100$

13. What are the three types of business transactions?

    Simple, Complex and Ongoing Transactions

14. The degrading value of an asset over time is known as   .

    Depreciation

15. What are the two main types of capital?

    Debt and Equity

UNIT 7.6.3: CRM & Networking

Unit Objectives 🎯

At the end of this unit, participants will be able to:

- Discuss the need for CRM
- Discuss the benefits of CRM
- Discuss the need for networking
- Discuss the benefits of networking

Resources to be Used ⚙️

- Participant Handbook

Ask 💬

- Can your business run without customers/buyers?
- Who is the most important entity in any business?

Say 💬

- The key to every success business lies on understanding the customer's expectations and providing excellent customer service.
- Discuss about CRM and its benefits. Refer to the Participant Handbook.
- Providing excellent customer service entails:
  - Treating your customers with respect.
  - Be available as per their need/ schedule.
  - Handling complaints effectively.
  - Building long lasting relationships.
  - Collecting regular feedback.
- Handle customer complaints proactively. Ask "what happened", "why it happened", "how can it be avoided next time", etc.
- Collecting feedback from the customers regularly will enable you to improve your good/service.
- "Let's understand it better with the help of some case scenarios. You will be given some cases within your groups. You have to analyse the case scenario that has been given to you and then find an appropriate solution to the problem."

Do ✓

- Divide the class into four groups of maximum six participants depending on the batch size.
- Give one case study to each group.
- Instruct them to read the case carefully.
- The group is expected to analyse and discuss the case amongst them and find a solution to the given problem.
- Put down the discussion points (de-brief questions) on the board. Give the class 5-10 minutes to discuss the case and note down their solutions.
- At the end of 10 minutes, the team should present their case solution to the class.

Team Activity

Case Study Analysis

Raju runs a business of wooden furniture. He has a huge list of customers on Facebook and WhatsApp who give him orders regularly. Ankita is one of his old and regular customers. She placed an order for a new chester and TV cabinet via WhatsApp and requested Raju to send them as soon as possible. When the parcel reached Ankita through courier she found that chester was broken and the TV unit was chipped from the bottom. Ankita was heartbroken. It was a complete waste of money. She sent a message to Raju on WhatsApp, expressing her anger and disappointment. Raju might lose an old customer forever if he doesn't satisfy the customer. What should Raju do to retain his customer?

Scenario 2

Rajni runs a boutique shop. She sells suits and sarees. She is one of the most successful designer in her city. Rajni swears that all the clothes in her boutique have unique designs. Smita has to attend her cousin's wedding; she goes to Rajni's boutique to buy a saree. Smita wanted a unique designer saree. Rajni customized a saree for her and sent it over the courier. When Smita had a look at the saree she realised her two friends had the same design sarees. She sent a message to Rajni on WhatsApp, expressing her anger and disappointment. Did Rajni make a false promise? Were her designs copied? What could happen to Rajni's image after this incident? What would you do if you were in Rajni's place?

Scenario 3

Shama is a beautician who offers parlour services to ladies by making home visits. Recently, Shama got her name registered on an e- commerce website. Two days earlier, she got a message from Mrs Sushma. The appointment was fixed for next day, 11:00 am and the remuneration for the services was decided beforehand. When Shama reached there at 10:50 am, Mrs Sushma was not at home. When Shama called her, she asked her to wait for a while. Mrs Sushma reached home at 11:45 am. Meanwhile, Shama had to reschedule her next appointment. After availing Shama's services, Mrs Sushma refused to pay the requisite amount and started finding faults in the services provided by her. Who was at fault in this scenario? What should you do in case the customer behaves unreasonably? What would you do if you were in Shama's place?

Scenario 4

Shailender is the manager of a car showroom. He proactively takes part in all the transactions that happen in his showroom. Vinita wants to buy a new car. She has chosen a car from Shailender's showroom. The salesperson has given her a very good discount and has also promised free service for one year. Vinita goes to the showroom and asks to complete all the formalities to purchase the car. When she sees the final bill she realize that she has not received the promised discount neither was there any mention of the free services. She immediately demands to see the Shailender. When Shailender's head asks how much discount Vinita was promised, he realised the discount will make the sale in loss. The car showroom owner might lose a customer and deal due to false commitments made by his manager. Besides, the customer might tell this to other people, creating a bad name and image for the showroom. If you owned that showroom, how would you have convinced your customer?

Say

- Now, let's discuss the problem and solution with the class.
- The group will first briefly describe the case to the class.
- Then discuss the issue identified and the proposed solution.
- Present the solution as a role play.
- Post presentation, the other groups may ask questions from the group that has presented.

Do ☑

- Congratulate each group for the presentation/ role play.
- Ask the audience to applaud for them.
- Keep a check on time. Tell the group to wind up the discussion quickly if they go beyond the given time limit.

Say 💬

- If your customers are happy with you they will give referrals which will help to grow your business.
- One more way of growing business is 'Networking'.
- Discuss Networking and its benefits. Refer to the Participant Handbook.

Activity ⚙

Group Discussion
- Conduct a group discussion in the class on how they can do networking for their business.

Summarize 🔍

- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of CRM and Networking for entrepreneurs.
- Close the discussion by summarizing the importance of CRM and Networking for entrepreneurs.

UNIT 7.6.4: Business Plan: Why Set Goals?

Unit Objectives

At the end of this unit, participants will be able to:

- Discuss the importance of setting goals
- Differentiate between short-term, medium-term and long-term goals
- Discuss how to write a business plan
- Explain the financial planning process
- Discuss ways to manage your risk

Resources to be Used

- Participant Handbook
- Chart papers
- Blank papers
- Marker pens
- Ruler

Ask

- Remember we had written SMART Goals in a previous session? Let's try and recall why it is important to set goals?
- While framing SMART goals, we talked about 'T' in SMART, which was 'Time Bound'? What do we mean by time bound goals?
- What time limit did you set for your goal- 3 weeks, 3 years, 10 years?

Say

- Talk about short term, long term and medium term goals, as discussed in the Participant Handbook.

Ask

- As you are planning to become an entrepreneur, you must have thought of an idea for a start-up. What is your business idea?

Do

- Ask few participants to share their business ideas.

Ask

- Have you created a business plan for your business idea?
- Do you think it is important to have a business plan in place? Why/ why not?

Say

- Talk about 'Why Create a Business Plan' as discussed in the Participant Handbook.
- Let's understand it better with the help of an activity.

Team Activity

Writing a business Plan

- This is a group activity.
- Give the groups the required resources such as chart paper and markers.
- This activity is divided into two parts:
  1. Create a business idea
  2. Develop a business plan
- The group will discuss and come up with a new business idea and present their idea to the class.
- In the second part of the activity the group will develop a business plan for the business idea.
- The business plan prepared will be presented by the groups to the class.

MY BUSINESS PLAN
Executive Summary: What is your Mission Statement?
Business Description: What is the nature of your business?
Market Analysis: What is your target market?
Organization and Management: What is your company's organizational structure?
Service or Product Line: What is the lifecycle of your product/ service?
Marketing and Sales: How will you advertise and sell your products?
Funding Request: How much fund is required and from where?

Say

- Teams will need to brainstorm for this part of the activity.
- Use the blank papers for the second part of this activity
- Make your business plan on a chart paper based on the following parameters:
  1. Executive Summary
  2. Business Description
  3. Market Analysis
  4. Organization and Management
  5. Service or Product Line
  6. Marketing and Sales
- Explain each parameter in detail as done in the Participant Handbook.
- Discuss each parameter with the business idea examples of the groups.
- Groups will discuss and develop the business plan for their business idea.

Say

- Now, let's share our plan with the class.
- Each group will briefly describe the plan to the class.
- Post presentation, the other groups may ask questions to the group who have presented their plan.

Do

- Congratulate each group for sharing their points.
- Ask the audience to applaud for them.
- Keep a check on time. Tell group to wind up the discussion quickly if they go beyond the given time limit.

Say

- Along with a business plan, you need to create a financial plan and evaluate the risk involved with your start up.
- Discuss 'Financial Planning' and 'Risk Management' in detail as given in the Participant Handbook.

Summarize

- Ask the participants what they have learnt from this exercise/ activity.
- Ask if they have any questions related to what they have talked about so far.

Notes for Facilitation

- Keep the business plan format ready in a flipchart to display it during the activity.

UNIT 7.6.5: Procedures and Formalities for Bank Finance

Unit Objectives 🎯

At the end of this unit, participants will be able to:

• Describe the procedure and formalities for applying for bank finance

Resources to be Used ⚙️

• Participant Handbook

• Bank loan/finance form sample

Ask 🔵ask

• While preparing a business plan in the last session, we discussed financial planning to arrange financial resources for your start-up. Therefore, how will you collect funds to start your business?

Say 💬

• While most entrepreneurs think 'product' is the most difficult thing to decide for a business, start-up capital poses an even a bigger obstacle. Though there are various ways of funding the business, to convince investors to invest money is the most challenging.

• Some of the funding options available in India are:

  ◆ **Bootstrapping**: Also called self-financing is the easiest way of financing

  ◆ **Crowd funding**: Funds are collected by consumers pre-ordering or donating for starting the business.

  ◆ **Angel investors**: Individual or group of investors investing in the company

  ◆ **Venture capitalists**: Venture capitals are professionally managed funds who invest in companies that have huge potential. They usually invest in a business against equity.

  ◆ **Bank loans**: The most popular method in India.

  ◆ **Microfinance Providers or NBFCs**

  ◆ **Government programmes**

• Let us know discuss the most popular method i.e. bank finance in detail here.

Do ✓

• Discuss the list of documents that are required to apply for a loan like letter of introduction, business brochure, references of other banks, and financial statements.

• Explain the details to be filled in a loan application form.

• Divide the class into groups. Give each group a loan application form.

• Ask the groups to discuss and fill the form.

Summarize 🔍

• Close the discussion by summarizing the important documents needed for bank loan.

• Ask the participants if they have any questions related to what they have talked about so far.

Notes for Facilitation 📝

- Checklist of documents is provided as resources for the session.
- You can make some copies and distribute it during the group activity.
- Download sample loan application forms from any nationalised bank's website. Print sufficient copies to circulate it amongst the groups.

CHECKLIST OF DOCUMENTS TO BE SUBMITTED ALONG WITH LOAN APPLICATION (Common for all banks)
1. Audited financial statements of the business concern for the last three years
2. Provisional financial statements for the half – year ended on _____
3. Audited financial statements of associate concern/s for the last three years
4. Copy of QIS II for the previous quarter ended on _____
5. Operational details in Annexure I
6. CMA data for the last three years, estimates for current year and projection for the next year
7. Term loan/DPG requirements in Annexure II
8. List of machinery in respect of machinery offered as security in Annexure III
9. Additional details for export advances furnished in Annexure IV
10. Property statements of all directors/partners/proprietor/guarantors
11. Copies of ITAO of the company for the last three years
12. Copies of ITAOs/WTAOs of the directors/partners/proprietor and guarantors
13. Copies of certificate from banks and financial institutions certifying the latest liability with them
14. Copy of board resolution authorizing the company to apply to your bank for the credit facilities mentioned in application
15. Copy of memorandum and article of association (in case of limited company)/partnership deed (in case of partnership firm)
16. Cash budget for the current year and next year in case of contractors and seasonal industries

UNIT 7.6.6: Enterprise Management – An Overview: How to Manage Your Enterprise?

Unit Objectives

At the end of this unit, participants will be able to:

- Discuss how to manage their own enterprise

Resources to be Used

- Participant Handbook

Ask

- Having set-up a business, do you think it is possible to do everything on your own?
- Does one require trained persons for help?
- What does management mean?

Say

- Let's have a look at this example:

    Kapil had a small business that was beginning to pick up pace. He wanted to expand his business, and therefore employed few more people. One day, as he was walking past Ramesh, one of his new employees, he overheard Ramesh talking rudely to a customer on the phone. This set him thinking. Kapil realised that he should have regular team meetings to motivate his employees and speak with them about any problems they might be facing during work. He should also conduct training sessions on new practices, soft skills, and technology, and develop work ethics manual for managing his enterprise.

Say

- Was Kapil correct in his approach or he should have scolded Ramesh instantly in front of his other employees?
- Discuss "Enterprise Management – An Overview" with the participants as given in the Participant Handbook.

Say

- Let's learn how to effectively manage an enterprise or business through an activity.

Team Activity

Enterprise Management

- This is a group activity.
- Design a matrix listing the topics and key words that are needed to run an enterprise effectively and smoothly.

Activity De-brief

- Have each group present their matrix.
- Encourage participants of the other groups to ask question about each other's presentation.

Do

- Instruct the participants that this is group work.
- Divide the class into small groups of 4.
- Give each group a chart paper and coloured pen.
- Tell the participants that they have make a matrix they need to fill.
- They have to write the main topics and key words that will them effectively manage their enterprise.
- Give the participants 15 minutes to discuss and write.
- Keep a check on time. Tell the group to wind up quickly if they go beyond the given time limit.

Summarize

- Ask the participants what they have learned from this exercise/activity.
- Ask if they have any questions related to what they have talked about so far.
- Close the discussion by summarizing the importance of effective management to run an enterprise as given in the Participant Handbook.

UNIT 7.6.7: 20 Questions to Ask Yourself before Considering Entrepreneurship

Unit Objectives

At the end of this unit, participants will be able to:

- List the important questions that every entrepreneur should ask before starting an enterprise

Resources to be Used

- Participant Handbook
- Blank sheets of paper
- Pens

Ask

- Why do you want to become an entrepreneur?

Say

- It is very important to know why you want to become an entrepreneur. Your personal goals for becoming an entrepreneur play a key role in the success of your business. Your goals should be clear well before you start your business.

- Apart from the goals, the other aspects of business that you need to bear in mind are the potential problems that you may face to set-up, your areas of interest, and all the other dimensions of the business.

- Let's understand it better with the help of some questions that every entrepreneur should ask before starting their own business.

- Open the Participant Handbook section named '20 Questions to Ask Yourself Before Considering Entrepreneurship'. You have to answer the questions individually.

- Then, we will have a class discussion on all the questions.

Do

- Read out the questions one by one in front of all the participants.
- Participants have to answer all the one by one questions.
- Give the class 10-15 minutes to note down their answers.
- At the end of 15 minutes, open the discussion for all the questions.
- Moderate the discussion by focusing on the relevant points.
- Keep a check on time and don't let the discussion get sabotaged or lose track of time. Ensure all the questions are covered and discussed.

Summarize

- Ask the participants what they have learned from this exercise/activity.
- Ask if they have any questions related to what they have talked about so far.

8. Annexures

Annexure I: Training Delivery Plan

Annexure II: Assessment Criteria
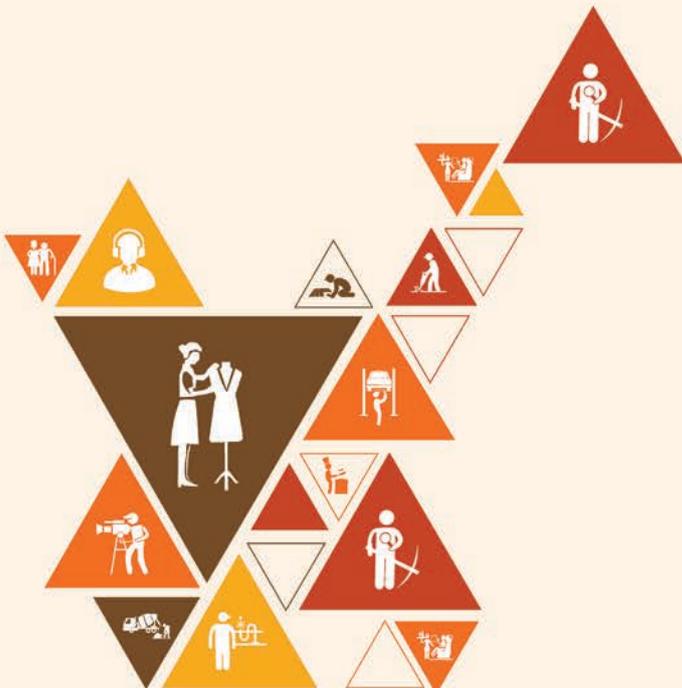
Annexure I

Training Delivery Plan

Training Delivery Plan	
Program Name:	Lab Technician/Assistant
Qualification Pack Name & Ref. ID	LFS/Q0509
Version No.	1.0 **Version Update Date** As per QP
Pre-requisites to Training	Training on operation of machinery
Training Outcomes	By the end of this program, the participants will be able to: 1. Help the lab/QC Chemists/Research Associates in performing the experiments and analysis 2. Carry out washing, processing and drying of the glassware/plastic ware for experimentation 3. Carry out preparation of solution and reagents 4. Ensure appropriate measures are taken while opening of chemicals to be used in analysis 5. Maintain records of lab usage, storage of chemicals, labels, date of opening and closing 6. Reprocess the instruments before carrying out experiments 7. Maintain a healthy, safe and secure working environment in the life sciences facility 8. Ensure cleanliness in the work area

SI. No.	Module Name	Session Name	Session Objectives	NOS Reference	Methodology	Training Tools/Aids	Duration
1.	Orientation Module	Orientation Module	**Theory**: 1. Familiarise with Life Sciences Industry in Indian and Global Context. 2. Explain pharmaceutical & biopharmaceutical sub-sector of Life Sciences Industry including relevant Govt. Scheme, social security benefits, and manufacturing basics and requirements. 3. Gain knowledge of Regulatory Authorities and Government Policies, rules and Regulations and their impact on manufacturing organizations, its structure. 4. Describe the knowledge, understanding and skills required for a Lab Assistant.	Bridge Module	• Facilitator-led – Discussion • Demonstration	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	5:00 hrs.
2.	Carry out Washing, Processing and Drying of the Glassware/ plastic ware	Manufacturing Process, Requirements and Functions	**Theory:** 1. Familiarise with orientation on typical manufacturing processing function. 2. Gain knowledge of the machinery used in production. 3. Explain standard measuring units and methods of performing simple calculations. 4. Describe quality control procedures. 5. Learn to follow housekeeping activities & managing emergency procedures. 6. Learn layout design. 7. Identify basic signals used in factories or organizations in production line. 8. Learn GMP/GCMP guidelines of pharmaceutical quality/ Manufacturing standards.	LFS/N0531 PC1 – PC11 KA1 – KA7 KB1 – KB9	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	6:00 hrs.
			Practical: Demonstrate • Perform System of Measurements • Demonstrate Quality Control • Demonstrate signals used in organizations in production line • Discuss GMP/CGMP guidelines	LFS/N0531 PC1 – PC11 KA1 – KA7 KB1 – KB9	• Practical Lab	Note Pad, Pen, charts	4:00 hrs.
		Ensure Machine and Equipment Readiness	**Theory:** 1. Read and understand production schedule. 2. Explain the importance of job cards, memos or reports. 3. Describe standard operating procedures. 4. Learn to clean and lubricate equipment. 5. Learn to Follow the correct cleaning methods to remove the obstructions. 6. Learn basic techniques of assembling the machines. 7. Learn to Eliminate ineffective equipment.	LFS/N0531 PC1 – PC11 KA1 – KA7 KB1 – KB9	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	8:00 hrs.
			Practical: Demonstrate • Discuss system hierarchy • Explain resource degradation and related decision making • Demonstrate production scheduling activities • Discuss SOPs	LFS/N0531 PC1 – PC11 KA1 – KA7 KB1 – KB9	• Practical Lab	Note Pad, Pen, charts	4:00 hrs.

		Washing, Processing and Drying of the Glassware and Plastic ware	**Theory:** 1. Perform cleaning of laboratory glassware 2. Prepare and dilute base baths 3. Learn to follow cleaning procedures	LFS/N0531 PC1 – PC11 KA1 – KA7 KB1 – KB9	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	5:00 hrs.
			Practical: Demonstrate • Perform laboratory glassware cleaning • Demonstrate Base bath and Dilute bath preparation • Perform cleaning of specific types of Glass labware	LFS/N0531 PC1 – PC11 KA1 – KA7 KB1 – KB9	• Practical Lab	Note Pad, Pen, charts	5:00 hrs.
		Ensuring Safety Checks, Troubleshooting and Accuracy of Equipment	**Theory:** 1. Explain work specifications. 2. Identify types of faults in the machineries. 3. Identify of faults & their recovery. 4. Describe corrective actions to be taken against faults. 5. Identify leakage in the machineries and containers. 6. Learn preventive methods to avoid leakage. 7. Learn to respond to emergency calls.	LFS/N0531 PC1 – PC11 KA1 – KA7 KB1 – KB9 LFS/N0560 PC10 - PC11 KB1 – KB2	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	3:00 hrs.
			Practical: Demonstrate • Demonstrate the types of equipment failure • Demonstrate how to check accuracy of equipment • Perform trial Run	LFS/N0531 PC1 – PC11 KA1 – KA7 KB1 – KB9 LFS/N0560 PC10 – PC11 KB1 – KB2	• Practical Lab	Note Pad, Pen, charts	4:00 hrs.
		Waste Disposal and Scrap Management	**Theory:** 1. Learn how and where disposal take place and what procedure is to be followed for safety purpose. 2. Learn methods of disposal of waste material. 3. Identify the hazardous waste material. 4. Learn handling, storage, transportation of all hazardous material properly. 5. Identify chemical symbols and their meaning. 6. Handle damaged and expired labels. 7. Describe waste management, reusing of non-confirming products. 8. Dispose of chemical, their reactions.	LFS/N0531 PC1 – PC11 KA1 – KA7 KB1 – KB9 LFS/N0560 KA1 – KA8	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	3:00 hrs.
			Practical: Demonstrate • Discuss four characteristics of waste • Demonstrate pharmaceutical waste treatment & Disposal	LFS/N0531 PC1 – PC11 KA1 – KA7 KB1 – KB9 LFS/N0560 KA1 – KA8	• Practical Lab	Note Pad, Pen, charts	3:00 hrs.
3.	Help the Lab/ QC Chemists/ Research Associates	Basics of Pharmaceutical Science and Chemistry	**Theory:** 1. Learn basics of pharmaceutical science and chemistry 2. Identify various chemical compounds	LFS/N0530 PC1 – PC10 KA1 – KA12 KB1 – KB4	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	3:00 hrs.

			Theory: 1. Learn and understand IUPAC nomenclature of compounds 2. Identify reagents, indicators and solutions	LFS/N0530 PC1 – PC10 KA1 – KA12 KB1 – KB4	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	6:00 hrs.
			Practical: Demonstrate • Demonstrate the components of an Analytical Method • Explain the IUPAC Rules for naming of organic compounds	LFS/N0530 PC1 – PC10 KA1 – KA12 KB1 – KB4	• Practical Lab	Note Pad, Pen, charts	4:00 hrs.
			Practical: Demonstrate • Demonstrate the following: a. Organic reaction mechanism b. Radical Reaction c. Polar Reaction d. Reduction and Oxidation Chemistry e. Reduction and Oxidation Chemistry	LFS/N0530 PC1 – PC10 KA1 – KA12 KB1 – KB4	• Practical Lab	Note Pad, Pen, charts	4:00 hrs.
		Sample Preparation, Preservation and Storage	**Theory:** 1. Identify samples used in labs 2. Learn to prepare samples 3. Learn to process samples 4. Learn to follow precautions while preparing samples 5. Learn to handle and calibrate equipment used in sampling 6. Use glassware appropriately	LFS/N0530 PC1 – PC10 KA1 – KA12 KB1 – KB4 LFS/N0532 PC1 – PC9	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	8:00 hrs.
			Practical: Demonstrate • Demonstrate Sampling Process • Explain sampling operations and precautions • Learn to use Sampling tools • Practice handling and calibrating glassware in Laboratory • Demonstrate the guidelines for weighing and measuring samples	LFS/N0530 PC1 – PC10 KA1 – KA12 KB1 – KB4 LFS/N0532 PC1 – PC9	• Practical Lab	Note Pad, Pen, charts	6:00 hrs.
		Knowledge about Analytical Equipment and Machinery	**Theory:** 1. Identify analytical tools 2. Learn to perform Inductively coupled plasma 3. Learn to perform Auto titration 4. Use UV-Visible Spectrophotometer Detectors 5. Learn to handle pH meter	LFS/N0530 PC1 – PC10 KA1 – KA12 KB1 – KB4	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	8:00 hrs.
			Practical: Demonstrate • Define ICP • Demonstrate Auto-Titration • Demonstrate pH Meter	LFS/N0530 PC1 – PC10 KA1 – KA12 KB1 – KB4	• Practical Lab	Note Pad, Pen, charts	6:00 hrs.
4.	Carryout Reporting and Documentation	Basic Communication at Workplace for Lab Assistant	**Theory:** 1. Learn to read and interpret the graphs/ images of product and instructions given in tool/ equipment manual. 2. Describe basic understanding of machines control panel, material labels & safety signage. 3. Identify various coding system of the company. 4. Select documentation. 5. Record and communicate details of work done. 6. Follow daily report format and submission as per the instructions.	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	3:00 hrs.
			Practical: Demonstrate • Demonstrate the types of communication • Discuss the control panel	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Practical Lab	Note Pad, Pen, charts	1:00 hrs.

		Recording, Reporting and Communication	**Theory:** 1. Gain complete knowledge of company's standard operating procedure and guidelines. 2. Describe why timely reporting about each and every incident is important and time management. 3. Explain impact of wrong practices and informing to supervisor. 4. Identify and report incidents where SOP are not followed. 5. Learn to report supervisor for finding solutions. 6. Explain escalation matrix for decision making that is not defined in SOP. 7. Learn to read and write memos, job cards, reports etc. in pre decided format both Offline and online as per SOP. 8. Learn to record & communicate the work done in local language and English. 9. Learn to take inputs from team and making proper report of that input. 10. Learn to follow efficient and clear communication methods for reporting the incidents and communication with team.	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	2:00 hrs.
			Practical: Demonstrate • Demonstrate SOP guidelines • Role Play on Incident • Steps of decision making	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Practical Lab	Note Pad, Pen, charts	2:00 hrs.
		Introduction to Computer	**Theory:** 1. Define the computer. 2. Recognise its various parts. 3. Differentiate the advantages and disadvantages of computer.	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	0.5:00 hrs.
		Basic Computer Knowledge	**Theory:** 1. Use computer. 2. Explain the web, email services.	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	0.5:00 hrs.
		Components of Computer	**Theory:** 1. Know the different parts and components of computer.	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	0.5:00 hrs.
		Concept of Operating System	**Theory:** 1. Familiarise with the concept of operating system. 2. Work on Windows 8 and 8.1. 3. Add or Remove desktop icons, make or delete a folder etc.	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	1.5:00 hrs.
			Practical: Demonstrate • Demonstrate the tools and parts of an OS • Create a folder and use add or remove command • Demonstrate common window commands	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Practical Lab	Note Pad, Pen, charts	1:00 hrs.

		MS Word	**Theory:** 1. Learn the concept of and practice MS-Word. 2. Format a document. 3. Print a document etc.	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	2:00 hrs.
			Practical: Demonstrate • Gain practical knowledge of MS-Word	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Practical Lab	Note Pad, Pen, charts	1:00 hrs.
		MS PowerPoint	**Theory:** 1. Practice MS – Power point. 2. Make a new presentation. 3. Format a slide as well	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	2:00 hrs.
			Practical: Demonstrate • Gain practical knowledge of MS-Power point	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Practical Lab	Note Pad, Pen, charts	2:00 hrs.
		MS Excel	**Theory:** 1. Work on MS-Excel 2. Format cells and cell content 3. Use formulas 4. Make Charts and Pivot Table	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	2:00 hrs.
			Practical: Demonstrate • Gain practical knowledge of MS-Excel	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Practical Lab	Note Pad, Pen, charts	2:00 hrs.
		Internet Concepts	**Theory:** 1. Understand internet concepts 2. Recognise the different types of URLs 3. Use MS-Outlook	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	1:00 hrs.
			Practical: Demonstrate • Demonstrate the types of URLs • Create an E-mail account and Send an e-mail • Opening and saving attachment	LFS/N0534 PC1 – PC9 KA1 – KA8 KB1 – KB11	• Practical Lab	Note Pad, Pen, charts	1:00 hrs.

5.	Maintain a Healthy, Safe and Secure Working Environment	Safety including Hazards, Accidents, Safety Signs and Signals and Heinrich Pyramid	**Theory:** 1. Gain knowledge about safety including hazards, accidents, safety signs and signals. 2. Understand the Heinrich Pyramid. 3. Orient with Water Systems at Plant, Engineering related tools and techniques to operate the machine safely. 4. Understand the clean room classifications and requirements. 5. Relate with the clean room behaviour practices. 6. Use Material Data Safety Sheet and Process of Safety Analysis. 7. Orient with Fire Safety concepts, PPEs action to be taken in case of fire emergency at shop floor. 8. Perform Job Safety Analysis for various production machines/ equipment and provide the critical information 9. concerned team members. 10. Manage emergency procedures and apply first aid. 11. Learn about basic professional and communication skills necessary to perform work successfully.	LFS/N0101 PC1 – PC10 KA1 – KA8 KB1 – KB6	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	4:00 hrs.
			Practical: Demonstrate • Demonstrate the relation b/w unsafe act, unsafe condition and hazard • Discuss about the safety signs, prohibition sign, Warning Sign and Mandatory signs	LFS/N0101 PC1 – PC10 KA1 – KA8 KB1 – KB6	• Practical Lab	Note Pad, Pen, charts	3:00 hrs.
		Water Systems at Plant	**Theory:** 1. Explain the water system at plant.	LFS/N0101 PC1 – PC10 KA1 – KA8 KB1 – KB6	• Power-point presentation • Facilitator- led - discussion • • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	2:00 hrs.
			Practical: Demonstrate • Discuss the types of water used in Pharmaceutical Processes	LFS/N0101 PC1 – PC10 KA1 – KA8 KB1 – KB6	• Practical Lab	Note Pad, Pen, charts	2:00 hrs.
		Clean Room: Classifications, Requirements and Behaviour Practices	**Theory:** 1. Explain the clean room and its classification. 2. Identify the personal behaviour of persons working in clean room.	LFS/N0101 PC1 – PC10 KA1 – KA8 KB1 – KB6	• • Power-point presentation • • Facilitator- led - discussion • • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	1:00 hrs.
			Practical: Demonstrate • Discuss the personal behavior of persons working in a Clean Room	LFS/N0101 PC1 – PC10 KA1 – KA8 KB1 – KB6	• Practical Lab	Note Pad, Pen, charts	1:00 hrs.
		Process of Safety Analysis	**Theory:** 1. Describe the process of safety analysis. 2. Prepare material safety data sheet.	LFS/N0101 PC1 – PC10 KA1 – KA8 KB1 – KB6 LFS/N0533 PC1 – PC11	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	4:00 hrs.

			Practical: Demonstrate • Demonstrate Material Safety Data Sheet • Role Play – Fire safety and Emergency Preparedness • Demonstrate the classes of fire • Discuss the fire-fighting rules • Demonstrate PPEs	LFS/N0101 PC1 – PC10 KA1 – KA8 KB1 – KB6 LFS/N0533 PC1 – PC11	• Practical Lab	Note Pad, Pen, charts	3:00 hrs.
		Job Safety Analysis (JSA)	**Theory:** 1. Describe the job safety analysis.	LFS/N0101 PC1 – PC10 KA1 – KA8 KB1 – KB6 LFS/N0533 PC1 – PC11	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	1:00 hrs.
		Managing Emergency Procedures and First Aid	**Theory:** 1. Identify different types emergencies. 2. Follow the emergency procedures and perform first aid.	LFS/N0101 PC1 – PC10 KA1 – KA8 KB1 – KB6	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	3:00 hrs.
			Practical: Demonstrate • Role Play – Response in case of fire and Chemical Spill	LFS/N0101 PC1 – PC10 KA1 – KA8 KB1 – KB6	• Practical Lab	Note Pad, Pen, charts	1:00 hrs.
6.	Pre-Housekeeping Activities for Lab Assistant	Material, Chemicals and Equipment and Cleaning Procedures	**Theory:** 1. Identify different Material, chemicals and equipment and their cleaning procedure.	LFS/N0103 PC1 – PC23 KA1 – KA5 KB1 LFS/N560 PC1 – PC9	• Power-point presentation • Facilitator- led – discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	6:00 hrs.
			Practical: Demonstrate • Perform housekeeping activities • Demonstrate different materials and chemicals	LFS/N0103 PC1 – PC23 KA1 – KA5 KB1 LFS/N560 PC1 – PC9	• Practical Lab	Note Pad, Pen, charts	4:00 hrs.
			Practical: Demonstrate • Demonstrate the process of equipment maintenance and their cleaning • Practice 5S System	LFS/N0103 PC1 – PC23 KA1 – KA5 KB1 LFS/N560 PC1 – PC9	• Practical Lab	Note Pad, Pen, charts	4:00 hrs.
		Methodology for Storage Area Inspection	**Theory:** 1. Explain methodology for storage area inspection.	LFS/N0103 PC1 – PC23 KA1 – KA5 KB1 LFS/N560 PC1 – PC9	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	5:00 hrs.
			Practical: Demonstrate • Demonstrate the storage area guidelines • Discuss about the validation of cleaning	LFS/N0103 PC1 – PC23 KA1 – KA5 KB1 LFS/N560 PC1 – PC9	• Practical Lab	Note Pad, Pen, charts	3:00 hrs.

		Post Housekeeping Activities	**Theory:** 1. Inspect cleaned area. 2. Inspect the oily substances at floor. 3. Check the treated surface after cleaning. 4. Explain procedure of submission of daily reports to appropriate authority. 5. Store PPE after use properly. 6. Maintain record of housekeeping Weekly. 7. Follow the methods to improve current activities based on their experience.	LFS/N0103 PC1 – PC23 KA1 – KA5 KB1 LFS/N560 PC1 – PC9	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	4:00 hrs.
			Practical: Demonstrate • Practice how to reduce risks of poor housekeeping • Identify slip and trip hazards	LFS/N0103 PC1 – PC23 KA1 – KA5 KB1 LFS/N560 PC1 – PC9	• Practical Lab	Note Pad, Pen, charts	3:00 hrs.

7	Employability and Entrepreneurship skills	Personal Strengths & Value Systems	**Theory:** 1. Explain the meaning of health 2. List common health issues 3. Discuss tips to prevent common health issues 4. Explain the meaning of hygiene 5. Understand the purpose of Swacch Bharat Abhiyan 6. Explain the meaning of habit 7. Discuss ways to set up a safe work environment 8. Discuss critical safety habits to be followed by employees 9. Explain the importance of self-analysis 10. Understand motivation with the help of Maslow's Hierarchy of Needs 11. Discuss the meaning of achievement motivation 12. List the characteristics of entrepreneurs with achievement motivation 13. List the different factors that motivate you 14. Discuss how to maintain a positive attitude 15. Discuss the role of attitude in self-analysis 16. List your strengths and weaknesses 17. Discuss the qualities of honest people 18. Describe the importance of honesty in entrepreneurs 19. Discuss the elements of a strong work ethic 20. Discuss how to foster a good work ethic 21. List the characteristics of highly creative people 22. List the characteristics of highly innovative people 23. Discuss the benefits of time management 24. List the traits of effective time managers 25. Describe effective time management technique 26. Discuss the importance of anger management 27. Describe anger management strategies 28. Discuss tips for anger management 29. Discuss the causes of stress 30. Discuss the symptoms of stress 31. Discuss tips for stress management	Bridge Module	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	

		Digital Literacy: A Recap	**Theory:** 1. Identify the basic parts of a computer 2. Identify the basic parts of a keyboard 3. Recall basic computer terminology 4. Recall basic computer terminology 5. Recall the functions of basic computer keys 6. Discuss the main applications of MS Office 7. Discuss the benefits of Microsoft Outlook 8. Discuss the different types of e-commerce 9. List the benefits of e-commerce for retailers and customers 10. Discuss how the Digital India campaign will help boost e-commerce in India 11. Describe how you will sell a product or service on an e-commerce platform	Bridge Module	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	
		Money Matters	**Theory:** 1. Discuss the importance of saving money 2. Discuss the benefits of saving money 3. Discuss the main types of bank accounts 4. Describe the process of opening a bank account 5. Differentiate between fixed and variable costs 6. Describe the main types of investment options 7. Describe the different types of insurance products 8. Describe the different types of taxes 9. Discuss the uses of online banking 10. Discuss the main types of electronic funds transfers	Bridge Module	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	
		Preparing for Employment and Self Employment	**Theory:** 1. Discuss the steps to prepare for an interview 2. Discuss the steps to create an effective Resume 3. Discuss the most frequently asked interview questions 4. Discuss how to answer the most frequently asked interview questions 5. Discuss basic workplace terminology	Bridge Module	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	

Understanding Entrepreneurship	Theory:	Bridge Module	• Power-point presentation • Facilitator- led - discussion • Audio- visuals Images	Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc.	
	1. Discuss the concept of entrepreneurship				
	2. Discuss the importance of entrepreneurship				
	3. Describe the characteristics of an entrepreneur				
	4. Describe the different types of enterprises				
	5. List the qualities of an effective leader				
	6. Discuss the benefits of effective leadership				
	7. List the traits of an effective team				
	8. Discuss the importance of listening effectively				
	9. Discuss how to listen effectively				
	10. Discuss the importance of speaking effectively				
	11. Discuss how to speak effectively				
	12. Discuss how to solve problems				
	13. List important problem solving traits				
	14. Discuss ways to assess problem solving skills				
	15. Discuss the importance of negotiation				
	16. Discuss how to negotiate				
	17. Discuss how to identify new business opportunities				
	18. Discuss how to identify business opportunities within your business				
	19. Understand the meaning of entrepreneur				
	20. Describe the different types of entrepreneurs				
	21. List the characteristics of entrepreneurs				
	22. Recall entrepreneur success stories				
	23. Discuss the entrepreneurial process				
	24. Describe the entrepreneurship ecosystem				
	25. Discuss the government's role in the entrepreneurship ecosystem				
	26. Discuss the current entrepreneurship ecosystem in India				
	27. Understand the purpose of the Make in India campaign				
	28. Discuss the relationship between entrepreneurship and risk appetite				
	29. Discuss the relationship between entrepreneurship and resilience				
	30. Describe the characteristics of a resilient entrepreneur				
	31. Discuss how to deal with failure				

| | | Preparing to be an Entrepreneur | Theory:
1. Discuss how market research is carried out
2. Describe the 4 Ps of marketing
3. Discuss the importance of idea generation
4. Recall basic business terminology
5. Discuss the need for CRM
6. Discuss the benefits of CRM
7. Discuss the need for networking
8. Discuss the benefits of networking
9. Understand the importance of setting goals
10. Differentiate between short-term, medium-term and long-term goals
11. Discuss how to write a business plan
12. Explain the financial planning process
13. Discuss ways to manage your risk
14. Describe the procedure and formalities for applying for bank finance
15. Discuss how to manage your own enterprise
16. List important questions that every entrepreneur should ask before starting an enterprise | Bridge Module | • Power-point presentation
• Facilitator- led - discussion
• Audio- visuals Images | Available Objects such as a book, pen, duster, white board, marker, Computer, Projector etc. | |

Total Training hour	200 Hour
Theory	60 Hour
Practical	140 Hour

Annexure II

Assessment Criteria

CRITERIA FOR ASSESSMENT OF TRAINEES

Assessment Criteria for Lab Technician /Assistant	
Job Role	Lab Technician /Assistant
Qualification Pack	LFS/Q0509
Sector Skill Council	Life Sciences Sector Skill Development Council

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below)
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria
5	To pass the Qualification Pack , every trainee should score a minimum of 70% in every NOS
6	In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

Assessment outcome	Assessment criteria of outcome	Total Marks (800)	Out of	Theory	Practical
LFS/N0531 (Carry out washing, processing and drying of the glassware/plastic ware for experimentation)	PC1. washing and cleaning the glassware with different solutions and types of water to ensure complete cleaning and removing of dirt	100	10	5	5
	PC2. ensure glass and plastic ware used for experimentation to be scrupulously clean		10	5	5
	PC3. use deionized distilled water as the final rinse in the cleansing process		10	5	5
	PC4. sterilize contaminated laboratory ware before cleansing		10	5	5
	PC5. monitor proper operation and supply of the distilled		10	5	5

	and deionized water sources				
	PC6. select detergent which is compatible with area water and leaves behind no undesirable residues on the cleansed laboratory ware and equipment		10	5	5
	PC7. check cleansed laboratory ware and equipment for acid / reagent residues		10	5	5
	PC8. inspect washed laboratory ware and equipment for cleanliness.		10	5	5
	PC9. code all laboratory ware and equipment to cleansing specifications required for laboratory studies.		7	4	3
	PC10. use autoclave for drying and sterilization of the glassware before further use.		7	3	4
	PC11. support seniors in monitoring batch fermentation process		6	3	3
	Total		100	50	50
LFS/ N0530 (Help the lab/QC Chemists/ Research Associates in performing the experiments and analysis)	PC1. to ensure the reagents, glassware, equipment is available at the right time.	100	10	5	5
	PC2. to assist in laboratory tests in order to produce reliable and precise data to support scientific investigations		10	5	5
	PC3. to prepare specimens and samples as per the		10	5	5

		guidelines and required for the experiment			
	PC4.	to set up and operate standard laboratory equipment, for example centrifuges, titrators, pipetting machines and ph meters		10	5	5
	PC5.	to carry out routine tasks accurately and maintain strict adherence to sops		10	5	5
	PC6.	to follow and ensure strict safety procedures and safety checks are followed		10	5	5
	PC7.	keeping up to date with technical developments, especially those which can save time and improve reliability		10	5	5
	PC8.	maintaining and repairing equipment and laboratory apparatus as a part of routine activities		10	5	5
	PC9.	coordinating work in the laboratory to ensure efficient use is made of expensive pieces of equipment.		10	5	5
	PC10.	ensuring the laboratory is well-stocked and resourced		10	5	5
	Total			100	50	50
LFS/N0532 (Carry out preparation of solution and reagents)	PC1.	to be well informed about the various reagents and associated specifications to be used in the laboratory	100	10	5	5

	PC2. ensure proper procedure is followed in reagent preparation		12	5	7
	PC3. ensure proper mixing of chemicals		11	5	6
	PC4. ensure safety by ensuring separation of incompatible chemicals and reagents		10	5	5
	PC5. preparation of media and buffer for fermentation experiments		10	5	5
	PC6. ensure purified water requirements are specified for clinical laboratory testing procedures		11	5	6
	PC7. ensure the solution is prepared as a percentage by weight, volume or moles and knowledge of all formulae respectively as specified by the lab chemists		11	5	6
	PC8. prepare working solutions from concentrated stock solutions		12	5	7
	PC9. measure the strength of solutions and weigh them as per guidelines		13	5	8
	Total		100	45	55
LFS/N0533 (Ensure appropriate measures are taken while opening of chemicals to be used in analysis)	PC1. display commitment to handle and use the chemical properly from initial receipt to ultimate disposal.	100	9	4	5
	PC2. new chemicals shall be obtained only if the supervisor has determined that the use of the new chemical is necessary		9	4	5
	PC3. carry out labeling and packaging of chemical		9	4	5

	containers in accordance with applicable regulations				
	PC4. ensure all chemical containers are dated		9	4	5
	PC5. move the received chemicals to the designated storage area		9	4	5
	PC6. store large bottles of acids and other hazardous substances on a shelf that is no more than three feet above floor level		9	4	5
	PC7. acid-resistant trays should be placed under bottles of mineral acids		10	5	5
	PC8. ensure appropriate safety eyewear and other personal protective equipment to be used while transferring chemicals one must ensure containers are properly labeled and know what to do in the event of a release or spill		9	4	5
	PC9. while transferring chemicals one must ensure containers are properly labeled and know what to do in the event of a release or spill.		9	4	5
	PC10. wear appropriate Personal Protective Equipment (PPE)		9	4	5
	PC11. ensure incompatible chemicals are kept away from each other.		9	4	5
	Total		100	45	55
LFS/N0534 (Maintain records of lab usage, storage of chemicals, labels,	PC1. cataloguing recordings and making them available when requested (if the department houses audiovisual resources)		12	5	7

date of opening and closing)	PC2. to ensure that all the quality manuals are readily available for reference	10	5	5
	PC3. to ensure that SOPs for each of the experiments is available	12	5	7
	PC4. to ensure document control by maintaining master log, effective archiving and constant updating of laboratory log.	12	5	7
	PC5. maintain various records sample log book, registers, quality control data, incident reports, results of internal and external audits etc.	12	5	5
	PC6. maintain instrument printouts of maintenance records	10	5	7
	PC7. maintain test specific reports	12	5	7
	PC8. ensure proper storing and archiving practices for all relevant documentation.	10	5	5
	PC9. carry out labeling of samples and reagents as per SOPs.	10	5	5
	Total	100	45	55
LFS/N0560 (Reprocess the instruments before carrying out experiments)	PC1. to carry out manual cleaning	9	4	5
	PC2. to observe correct protocols for instrument cleaning	9	4	5
	PC3. carry out CIP and SIP for ultrasonic equipment/ fermenter and other equpiments	9	4	5
	PC4. use automatic washer for complex instruments	9	4	5
	PC5. to replace damaged instrument	9	4	5

	PC6. return any instrument with visible soil or residual debris for further cleaning			9	5	4
	PC7. perform Sterile packaging to maintain the sterility of processed instruments and allow for aseptic opening at point of use		9	4	5
	PC8. to perform steam sterilization for sterilizing instruments, trays, and cassettes		8	4	4
	PC9. to store sterile packages in a manner that reduces the potential for contamination		11	5	6
	PC10. to routinely verify sterility assurance of processed instruments		10	5	5
	PC11. to use physical, chemical and biological indicators for quality assurance		8	4	4
	Total		100	47	53
LFS/N0101 (Maintain a healthy, safe and secure working environment in the life sciences facility)	PC1. observe and comply with your company's current health, safety and security policies and procedures	100	10	5	5
	PC2. while carrying out work, use appropriate safety gears like head gear, masks, gloves and other accessories as mentioned in the guidelines		10	5	5
	PC3. report any identified breaches in health, safety, and security		10	5	5

		policies and procedures to the designated person				
	PC4.	responsible for maintaining discipline at the shop-floor area		10	5	5
	PC5.	identify and correct any hazards that you can deal with safely, competently and within the limits of your authority		10	5	5
	PC6.	adhere and comply to storage and handling guidelines for hazardous material		10	5	5
	PC7.	identify and recommend opportunities for improving health, safety, and security to the designated person		10	5	5
	PC8.	complete any health, safety and security records legibly and accurately		10	4	6
	PC9.	report any hazards that you are not competent to deal with to the relevant person in line with organizational procedures and warn other people who may be affected		10	4	6
	PC10.	follow your company's emergency procedures promptly, calmly, and efficiently		10	5	5
	Total			100	48	52
LFS/N0103 (Ensure cleanliness in the work area)	PC1.	inspect the area while taking into account various surfaces	100	4	2	2
	PC2.	identify the material requirements for cleaning the areas inspected, by considering risk, time, efficiency and type of stain		5	2	3

PC3.	ensure that the cleaning equipment is in proper working condition	5	2	3
PC4.	select the suitable alternatives for cleaning the areas in case the appropriate equipment and materials are not available and inform the appropriate person	4	2	2
PC5.	plan the sequence for cleaning the area to avoid re-soiling clean areas and surfaces	4	2	2
PC6.	inform the affected people about the cleaning activity	4	2	2
PC7.	display the appropriate signage for the work being conducted	4	2	2
PC8.	ensure that there is adequate ventilation for the work being carried out	5	2	3
PC9.	wear the personal protective equipment required for the cleaning method and materials being used	4	2	2
PC10.	use the correct cleaning method for the work area, type of soiling and surface	4	2	2
PC11.	deal with accidental damage, if any, caused while carrying out the work	4	2	2
PC12.	report to the appropriate person any difficulties in carrying out your work	4	2	2
PC13.	identify and report to the appropriate person any additional cleaning required that is outside	4	2	2

	one's responsibility or skill				
	PC14. ensure that there is no oily substance on the floor to avoid slippage		4	2	2
	PC15. ensure that no scrap material is lying around		4	2	2
	PC16. maintain and store housekeeping equipment and supplies		4	2	2
	PC17. follow workplace procedures to deal with any accidental damage caused during the cleaning process		4	2	2
	PC18. ensure that, on completion of the work, the area is left clean and dry and meets requirements		4	2	2
	PC19. return the equipment, materials and personal protective equipment that were used to the right places making sure they are clean, safe and securely stored		5	2	3
	PC20. dispose the waste garnered from the activity in an appropriate manner		5	2	3
	PC21. dispose of used and un-used solutions according to manufacturer's instructions, and clean the equipment thoroughly		5	2	3
	PC22. maintain schedules and records for housekeeping duty		5	2	3
	Total		100	46	54
				100	

Do ☑

- Explain each Guideline for Assessment in detail.

- Explain the score that each trainee needs to obtain.

- Recapitulate each NOS one-by-one and take participants through the allocation of marks for Theory and Skills Practical.

- Explain the Allocation of Marks. Explain that they will be assessed on Theory and Skills Practical.

Skill India
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