



Model Curriculum

QP Name: Chemical Plant Assistant Operator

QP Code: RSC/Q7101

QP Version: 1.0

NSQF Level: 3

Model Curriculum Version: 1.0

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Training Parameters

Sector	Chemical & Petro-chemical (CPC)
Sub-Sector	Chemical
Occupation	Manufacturing/process
Country	India
NSQF Level	3
Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 3133.9900
Minimum Educational Qualification and Experience	10th class pass OR Grade 8 with 2 years of (NTC/ NAC) after 8th OR 8th grade pass with 2 years of relevant experience
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 years
Last Reviewed On	29/03/2023
Next Review Date	29/03/2026
NSQC Approval Date	29/03/2023
QP Version	1.0
Model Curriculum Creation Date	29/03/2023
Model Curriculum Valid Up to Date	29/03/2026
Model Curriculum Version	1.0
Minimum Duration of the Course	420 Hours, 0 Minutes
Maximum Duration of the Course	420 Hours, 0 Minutes

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner will be able to:

- Role play on how to assist in performing chemical manufacturing operations
- Employ suitable practices to communicate effectively with colleagues, and superiors to achieve a smooth workflow
- Describe the housekeeping activities related to the job role
- Apply appropriate practices to follow reporting and documentation standards
- Describe the health, hygiene, safety, and quality standards to be applicable as per the standards
- Show how to manage chemical hazards in the workplace
- Apply proper practices to follow ethical and sustainable practices at the workplace
- Develop employability skills

Compulsory Modules

The table lists the modules, their duration and mode of delivery.

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
RSC/N7102: Assist In Performing Chemical Manufacturing Operations NOS Version No. 1.0 NSQF Level 3	75:00	135:00	00:00	00:00	210:00
Module 1: : Introduction to Chemical Industry and Role of Chemical Plant Assistant Operator	07:30	00:00	00:00	00:00	07:30
Module 2: Assist in Preparation for Chemical Production	37:30	60:00	00:00	00:00	97:30
Module 3: Assist in Performing Chemical Manufacturing Operations	30:00	75:00	00:00	00:00	105:00
RSC/N5610-Coordinate and Communicate Effectively at the Workplace NOS Version No. 1.0	15:00	15:00	00:00	00:00	30:00

NSQF Level 4					
Module 4: Communicate Effectively and Efficiently	15:00	15:00	00:00	00:00	30:00
RSC/N5001– Carry out Housekeeping NOS Version No. 3.0 NSQF Level 4	07:30	07:30	00:00	00:00	15:00
Module 5: Housekeeping	07:30	07:30	00:00	00:00	15:00
RSC/N5002– Carry Out Reporting and Documentation NOS Version No. 3.0 NSQF Level 4	15:00	15:00	00:00	00:00	30:00
Module 6: Perform Reporting and Documentation Activities	15:00	15:00	00:00	00:00	30:00
RSC/N5007– Carry out Health and Safety NOS Version No. 3.0 NSQF Level 4	07:30	07:30	00:00	00:00	15:00
Module 7: Maintain Health and Safety	07:30	07:30	00:00	00:00	15:00
RSC/N5614 - Manage Chemical Hazards in the Workplace NOS Version No. 1.0 NSQF Level 4	15:00	15:00	00:00	00:00	30:00
Module 8: Manage Chemical Hazards in the Workplace	15:00	15:00	00:00	00:00	30:00
RSC/N5603 – Follow Ethical and Sustainable Practices at Workplace Version No. 1.0 NSQF Level 4	15:00	15:00	00:00	00:00	30:00
Module 9: Ethical and Sustainable Practices at Workplace	15:00	15:00	00:00	00:00	30:00
DGT/VSQ/N0102: Employability Skills (30 Hours)	15:00	15:00	00:00	00:00	30:00
Module 10: Employability Skills	30:00	30:00	00:00	00:00	30:00
OJT	00:00	00:00	30:00	00:00	30:00
Total Duration	165:00	225:00	30:00	00:00	420:00

Module 1: Introduction to Chemical Industry and Role of Chemical Plant Assistant Operator

Bridge Module

Terminal Outcomes:

- Outline the overview of Skill India Mission
- Describe the scope of the Chemical Industry
- Define the roles and responsibilities of an Chemical Plant Assistant Operator

Duration: 07:30	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the objectives and benefits of the Skill India Mission • Describe the scope of the Chemical Industry and its sub-sectors • Discuss job role and opportunities for Chemical Plant Assistant Operator • Elaborate the basic terminology used in the Chemical & Petrochemical sector 	NA
Classroom Aids	
Whiteboard, Flip Chart, Markers, Duster, Projector, Laptop with charger, Projector screen, Power Point Presentation, 2.1 Laptop External Speakers.	
Tools, Equipment and Other Requirements	
NA	

Terminal Outcomes:

- Perform steps to obtain and receive instructions on the specifications, different engineering drawing and symbols from the plant operator
- Role play on how to handle various chemicals as per material/chemical data sheet
- Describe the methods of identifying the chemical class such as hazardous, toxic chemicals, etc.

Duration: 37:30	Duration: 60:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss fundamentals of mathematical calculations, concepts of general chemistry and basic properties of fluids, density, refractive index and viscosity • Describe different types of pumps, pipes, valves, vessels, heat exchangers, dryers, evaporator, filtration unit, etc. in chemical plant • Outline the importance of safety and general precautions in a chemical plant • Describe the method how to interpret specifications, different engineering drawing and symbols • Explain the methods of organizing raw material, equipment, and machine required as per instructions as well as examining the quality of raw material and product by color, odor, pH, density and viscosity • Describe the methods of identifying the chemical class such as hazardous, toxic chemicals, etc. • Discuss the properties of hazardous and toxic chemicals and safe handling procedures, materials safety data sheets (MSDs) and material handling process • Explain the standard procedure to maintain work area as well as check the 	<ul style="list-style-type: none"> • Perform steps to obtain and receive instructions on the specifications, different engineering drawing and symbols from the plant operator • Role play on how to handle various chemicals as per material/chemical data sheet • Apply proper methods to maintains adequate inventory of supplies • Show how to perform experiments on heat exchanger and evaporator

functionality of the equipment and machinery in the work area

Classroom Aids

Training kit (Trainer guide, Presentations), White board, Marker, Projector screen, Laptop with charger, Participant Handbook and Related Standard Operating Procedures, 2.1 Laptop External Speakers

Tools, Equipment and Other Requirements

Sample of engineering drawing and inventory, required various chemicals etc.

Module 3: Assist in Performing Chemical Manufacturing Operations

Mapped to RSC/N7102, v 1.0

Terminal Outcomes:

- Role play on how to assist the plant operator with daily set up and adjustments of production equipment
- Show how to dismantle, clean and assemble different fluid flow machines and various components for fluid transportation
- Apply proper methods to clean equipment as needed and report repairs to maintenance or authorized person

Duration: 30:00	Duration: 75:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe evaporation, filtration and distillation processes • Discuss the method to carry out cutting and threading, bending and fittings of pipes as per instructions • Explain methods of operating the chemical processes or systems of machines • Describe the standard procedure to submit samples for lab analysis • Outline the importance of safety and general precautions in a chemical plant 	<ul style="list-style-type: none"> • Role play on how to assist the plant operator with daily set up and adjustments of production equipment • Show how to dismantle, clean and assemble different fluid flow machines and various components for fluid transportation • Demonstrate how to operate machines based on size reduction and transportation of solids • Show how to assemble valve and fittings with pipes and test for leakages and adjust fitting of pipe line • Demonstrate how to perform fitting and dismantling of locking devices, valves, etc. • Role play on how to provide assistance with measuring, weighing, and loading chemical ingredients as per the formulation cards • Apply proper methods to clean equipment as needed and report

	repairs to maintenance or authorized person
Classroom Aids	
Training kit (Trainer guide, Presentations), White board, Marker, Projector screen, Laptop with charger, Participant Handbook and Related Standard Operating Procedures, 2.1 Laptop External Speakers	
Tools, Equipment and Other Requirements	
Required fluid flow machines, different types of valves, pipes, locking devices etc.	

Terminal Outcomes:

- Elaborate the professional protocols and etiquette of effective communication at the workplace
- Discuss the standard policies on behavioural etiquette, professionalism and gender sensitive service practices at workplace

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the standard policies on behavioural etiquette, professionalism and gender sensitive service practices at workplace and standard hierarchy and reporting structure • Discuss effective ways of team coordination • List the key helpline numbers • State the significance of listening, responding, trusting, supporting and respecting all colleagues and seniors • Outline the importance of maintaining clarity, honesty and transparency while communicating with the seniors and colleagues as well as seeking clarification on the information provided by seniors • Discuss the importance of complying with standard policies and procedures for team work and respecting the personal and professional space of colleagues and superiors 	<ul style="list-style-type: none"> • Role play on how interact with colleagues and seniors in a polite and professional manner, listen actively to the issues or requirements of colleagues and respond timely and appropriately • Dramatize how to pass on essential information to the colleagues timely and coordinate with seniors on work-related and behavioural feedback • Role play on how to report the status of work in the desired format as per the schedule to seniors and inform about any deviations or anomalies • Dramatize on how to coordinate and support maintenance/engineering team and environmental health and safety (EHS) team and other department for smooth work process • Role play on how to provide inputs to the concerned stakeholders for reviewing and detect non-compliance
Classroom Aids	
Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures	
Tools, Equipment and Other Requirements	
Sample of escalation matrix, Organisation structure	

Terminal Outcomes:

- Explain the different aspects of housekeeping for workarea.
- Describe the housekeeping activities to be done to clean the workarea.
- List the benefits of implementing '5S' in workarea.

Duration: 07:30	Duration: 07:30
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Describe what is housekeeping • Explain the importance of housekeeping in storage area • List the cleaning equipment and chemicals used for cleaning process • Identify various safety boards/ signs placed on the shop floor • Discuss the importance of adequate ventilation during cleaning work • Discuss the importance of monitoring and supervising the cleaning activities • Describe what is '5S' • Define each 'S' and its meaning • Discuss the necessary precautions to avoid any hazard and accident during cleaning activities • Discuss the documents and records needed to be maintained and updated related to cleaning activities done 	<ul style="list-style-type: none"> • Demonstrate how to inspect the area for cleaning purpose • Apply appropriate ways to check the working condition of cleaning equipment • Demonstrate the cleaning process of creel room area and equipment with the specified cleaning aid and chemicals • Prepare a sample report related to issues occur during cleaning activities and for requirement of any additional cleaning at workarea • Apply appropriate ways to check that workarea is cleaned properly after completion of cleaning activities • Show how to return back the cleaning equipment and material to store after completion of work • Show how to dispose the waste material properly as per the organisation's policies and environmental regulations
Classroom Aids:	
White board and marker or blackboard and chalk, duster, laptop or desktop computer and projector, flipcharts, participant handbook	
Tools, Equipment and Other Requirements	
Cleaning rags, cleaning brush, broom, mop, cleaning chemicals, floor cleaning machine, personal protective equipment (PPE) - safety gloves, safety goggles, safety shoes, mask	

Module 6: Perform Reporting and Documentation Activities

Mapped to RSC/N5002, v 3.0

Terminal Outcomes:

- Describe the procedure of recording and documentation as per standards
- Discuss the procedure of maintaining confidentiality of information
- Prepare the sample damage report, breakage report, etc.

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Elaborate the standard health, safety and environment guidelines, legislation and regulations and company's HR instructions along with implications of not following the organizational requirement for approval, for undertaking specific tasks etc. and actions to be taken in case of non-conformity to behavioural standards of the organization • Discuss the significance of learning proper procedures and techniques, appropriate training on the subject and completing the activities as per schedule along with the implications of not following the standard procedures, work instructions, etc. • Elaborate the standard procedure of rectifying and solving any issues/conflicts and importance of attending troubleshooting processes • Discuss different methods of recording information • Explain various types of documents, the procedure tolls and tackle to maintain the same as a part of the job role, importance of completing the report timely accurately and correctly as well as the actions to be taken if the documents are not correct • Elaborate the procedures of reporting to the appropriate authority 	<ul style="list-style-type: none"> • Dramatize a situation on how to report data/ problems/ incidents to the appropriate authority as per the standard • Apply appropriate practices to identify various documentation to be completed relating to one's role • Demonstrate how to record details accurately in the standard format within the stipulated time • Apply appropriate practices to prepare the final documents as per standards and requirements and make the documents available for the inspection by the appropriate authorities • Prepare the sample reports for damage, breakage, etc. • Roleplay on how to respond to the requests for information as per the standard • Roleplay a situation to inform the proper authority about the requests received for information as per the standards • Dramatize a situation on how to report the incidents where standard operating procedures are not followed

- Discuss the procedure and importance of maintaining the security and confidentiality of recorded information as well as the methods for responding to requests for information
- Explain the reporting procedures to follow before disclosing information to any outside party

Classroom Aids

Training kit (Trainer guide, Presentations), White board, Marker, Projector, Laptop, Presentation, Participant Handbook and Related Standard Operating Procedures

Tools, Equipment and Other Requirements

Sample breakage report, Sample damage report, Required form and format, etc.

Terminal Outcomes:

- List the potential hazards in a storage area of rubber industry.
- Outline the safety plan during emergency while working in storage area.

Duration: 07:30	Duration: 07:30
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the health and safety requirements in storage facility • Discuss organisational procedures for health, safety and security and individual role and responsibilities related to the same • Describe the ill-effects of improper storage conditions in storage area • List the safety arrangement available in storage area • Outline the requirements of Personal Protective Equipment (PPE) during storage operations • State details of common injuries which can occur while working in a storage area • Recall the constituents of a first aid box used in industry 	<ul style="list-style-type: none"> • Demonstrate the use of the given Personal Protective Equipment (PPE) • Demonstrate how to handle fire emergencies through a role play • Demonstrate how to use a multi-purpose fire extinguisher on simulated fire • Select the fire extinguisher from the given fire extinguishers, for the specified fire type and class • Demonstrate first aid procedure for a given injury
Classroom Aids:	
White board and marker or blackboard and chalk, duster, laptop or desktop computer and projector, flipcharts, participant handbook	
Tools, Equipment and Other Requirements	
Sample of PPEs – safety helmet, safety goggle, safety shoes, safety gloves, mask, earmuff, first aid box, fire extinguisher, eye-wash station.	

- Explain the methods of identifying the hazards and risks associated with chemicals with the help of safety data sheet
- Show how to use appropriate Personal Protective Equipment (PPE) as per work requirements
- Apply proper methods to carryout the risk assessment and work according to the recommended safe practices
- Outline the importance of following the guidelines to collect, segregate and dispose chemicals waste into appropriate containers based on their toxicity or hazardous nature

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> ● Discuss different types of chemicals hazards and levels of risks ● Explain the methods of identifying the hazards and risks associated with chemicals with the help of safety data sheet ● Discuss different types of PPE like overalls and aprons, gloves, chemical resistant glasses, respiratory protection, boots etc. ● Describe the different types of labels, like dangerous to the environment, explosive , toxic , flammable, corrosive etc. ● Explain the risk assessment procedure and principle of risk control hierarchy ● State the significance of following the guidelines to handle chemicals and to protect self and others from chemical hazards ● Explain the importance of ensuring that workplace has well-ventilated and safe chemical storage areas with safety cabinets suited to each substance as well as isolating the hazardous substances in separate storage areas ● Outline the importance of following the guidelines to collect, segregate and 	<ul style="list-style-type: none"> ● Show how to use appropriate Personal Protective Equipment (PPE) as per work requirements ● Apply proper methods to carryout the risk assessment and work according to the recommended safe practices ● Apply proper procedure to identify and report any chemical hazards, risks or breaches in site safety to the appropriate authority

dispose chemicals waste into appropriate containers based on their toxicity or hazardous nature

- Explain the importance of following safe evacuation and emergency procedure in the event of chemical accidents/emergencies

Classroom Aids

Training kit (Trainer guide, Presentations), White board, Marker, Projector screen, Laptop with charger, Participant Handbook and Related Standard Operating Procedures, 2.1 Laptop External Speakers

Tools, Equipment and Other Requirements

Sample safety data sheet, report format, required PPE like overalls and aprons, gloves, chemical resistant glasses, respiratory protection, boots etc.

Terminal Outcomes:

- Apply material and energy conservation practices at the workplace.
- Apply sensitivity while interacting with different genders and people with disabilities.

Duration: 15:00	Duration: 15:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss organisational policies for usage of alternate energy source, such as solar energy, for the site • Discuss the importance of efficient utilisation of fuels, material, water and energy/ electricity • Explain the processes to optimize usage of fuels, material, water and energy/ electricity • Enlist common practices for conserving electricity at workplace • Discuss the significance of greening • Classify different categories of waste for the purpose of segregation • Differentiate between hazardous, recyclable and non-recyclable waste • Discuss various methods of waste collection and disposal • Discuss the importance of completing tasks on time • Discuss the ways to adjust the communication styles to reflect sensitivity towards gender and persons with disability (PwD) • Discuss gender-based concepts, issues and legislation as well organization standards, guidelines, rights and duties of PwD • Discuss the importance of PwD and gender sensitization • State the importance of following organizational standards and guidelines related to PwD 	<ul style="list-style-type: none"> • Employ practices for efficient utilization of fuels, material, water and energy/ electricity • Apply appropriate ways to prevent soil erosion during plantation and other related activities • Demonstrate proper waste collection and disposal mechanism depending upon types of waste • Apply appropriate ways to organise storage of recyclable and reusable material at identified location • Employ different means and methods of communication depending upon the requirement to interact with the team members • Demonstrate how to communicate with different genders and persons with disability (PwD) in a sensitive manner • Role play a situation on how to offer help to people with disability (PwD) if required at work
Classroom Aids:	
White board and marker or blackboard and chalk, duster, laptop or desktop computer and projector, flipcharts, participant handbook	
Tools, Equipment and Other Requirements	
Defective raw material, defective components, personal protective equipment (PPE) - safety gloves, safety goggles, safety shoes, mask.	

Module Summary:

S. No	Module Name	Duration (hours)	Assessment Marks
1.	Introduction to Employability Skills	1	2
2.	Constitutional values - Citizenship	1	2
3.	Becoming a Professional in the 21st Century	1	4
4.	Basic English Skills	2	5
5.	Communication Skills	4	2
6.	Diversity & Inclusion	1	2
7.	Financial and Legal Literacy	4	7
8.	Essential Digital Skills	3	10
9.	Entrepreneurship	7	8
10.	Customer Service	4	4
11.	Getting ready for apprenticeship & Jobs	2	4
	Total	30	50

Key Learning Outcomes:
Introduction to Employability Skills *Duration: 1 Hour*

After completing this programme, participants will be able to:

1. Discuss the importance of Employability Skills in meeting the job requirements

Constitutional values - Citizenship *Duration: 1 Hour*

2. Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen.
3. Show how to practice different environmentally sustainable practices

Becoming a Professional in the 21st Century *Duration: 1 Hours*

4. Discuss 21st century skills.
5. Display positive attitude, self -motivation, problem solving, time management skills and continuous learning mindset in different situations.

Basic English Skills *Duration: 2 Hours*

6. Use appropriate basic English sentences/phrases while speaking

Communication Skills *Duration: 4 Hour*

7. Demonstrate how to communicate in a well -mannered way with others.
8. Demonstrate working with others in a team

Diversity & Inclusion *Duration: 1 Hour*

9. Show how to conduct oneself appropriately with all genders and PwD
10. Discuss the significance of reporting sexual harassment issues in time

Financial and Legal Literacy *Duration: 4 Hours*

11. Discuss the significance of using financial products and services safely and securely.
12. Explain the importance of managing expenses, income, and savings.
13. Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws

Essential Digital Skills *Duration: 3 Hours*

14. Show how to operate digital devices and use the associated applications and features, safely and

15. Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely

Entrepreneurship

Duration: 7 Hours

16. Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges

Customer Service

Duration: 4 Hours

17. Differentiate between types of customers
 18. Explain the significance of identifying customer needs and addressing them
 19. Discuss the significance of maintaining hygiene and dressing appropriately

Getting ready for apprenticeship & Jobs

Duration: 2 Hours

20. Create a biodata
 21. Use various sources to search and apply for jobs
 22. Discuss the significance of dressing up neatly and maintaining hygiene for an interview
 23. Discuss how to search and register for apprenticeship opportunities

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate/CITS	Any discipline			2	Teaching experience	Prospective ES trainer should: <ul style="list-style-type: none"> • have good communication skills • be well versed in English • have digital skills • have attention to detail • be adaptable • have willingness to learn
Current ITI trainers	Employability Skills Training (3 days full-time course done between 2019-2022)					
Certified current EEE trainers (155 hours)	from Management SSC (MEPSC)					
Certified Trainer	Qualification Pack: Trainer (MEP/Q0102)					

Trainer Certification	
Domain Certification	Platform Certification
Certified in 30-hour Employability NOS (2022), with a minimum score of 80% OR Certified in 120- OR 90- OR 60-hour Employability NOS (2022), with a minimum score of 80%	NA

Master Trainer Requirements

Master Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	

Graduate/CITS	Any discipline			3	Employability Skills curriculum training experience with an interest to train as well as orient other peer trainers	Prospective ES Master trainer should: <ul style="list-style-type: none"> • have good communication skills • be well versed in English
Certified Master Trainer	Qualification Pack: Master Trainer (MEP/Q2602)			3	EEE training of Management SSC (MEPSC) (155 hours)	<ul style="list-style-type: none"> • have basic digital skills • have attention to detail • be adaptable • have willingness to learn • be able to grasp concepts fast and is creative with teaching practices and likes sharing back their learning with others

Master Trainer Certification	
Domain Certification	Platform Certification
Certified in 30-hour Employability NOS (2022), with a minimum score of 90% . OR Certified in 120- OR 90- OR 60-hour Employability NOS (2022), with a minimum score of 90%	NA

Assessment Strategy

The trainee will be tested for the acquired skill, knowledge and attitude through formative/summative assessment at the end of the course and as this NOS and MC is adopted across sectors and qualifications, the respective AB can conduct the assessments as per their requirements.

LIST OF TOOLS & EQUIPMENT FOR EMPLOYABILITY SKILLS

S No.	Name of the Equipment	Quantity
1.	Computer (PC) with latest configurations – and Internet connection with standard operating system and standard word processor and worksheet software (Licensed) (all software should either be latest version or one/two version below)	As required
2.	UPS	As required
3.	Scanner cum Printer	As required
4.	Computer Tables	As required
5.	Computer Chairs	As required
6.	LCD Projector	As required
7.	White Board 1200mm x 900mm	As required
<i>Note: Above Tools & Equipment not required, if Computer LAB is available in the institute.</i>		

Module 11: On-the-Job Training

Mapped to Chemical Plant Assistant Operator

Mandatory Duration: 30:00	Recommended Duration: 00:00
Location: On Site	
Terminal Outcomes <ul style="list-style-type: none"> • Perform steps to obtain and receive instructions on the specifications, different engineering drawing and symbols from the plant operator • Role play on how to handle various chemicals as per material/chemical data sheet • Apply proper methods to maintains adequate inventory of supplies • Show how to perform experiments on heat exchanger and evaporator • Role play on how to assist the plant operator with daily set up and adjustments of production equipment • Show how to dismantle, clean and assemble different fluid flow machines and various components for fluid transportation • Demonstrate how to operate machines based on size reduction and transportation of solids • Show how to assemble valve and fittings with pipes and test for leakages and adjust fitting of pipe line • Demonstrate how to perform fitting and dismantling of locking devices, valves, etc. • Role play on how to provide assistance with measuring, weighing, and loading chemical ingredients as per the formulation cards • Apply proper methods to clean equipment as needed and report repairs to maintenance or authorized person • Role play on how interact with colleagues and seniors in a polite and professional manner, listen actively to the issues or requirements of colleagues and respond timely and appropriately • Dramatize how to pass on essential information to the colleagues timely and coordinate with seniors on work-related and behavioural feedback • Role play on how to report the status of work in the desired format as per the schedule to seniors and inform about any deviations or anomalies • Dramatize on how to coordinate and support maintenance/engineering team and environmental health and safety (EHS) team and other department for smooth work process • Role play on how to provide inputs to the concerned stakeholders for reviewing and detect non-compliance • Demonstrate how to inspect the area for cleaning purpose 	

- Apply appropriate ways to check the working condition of cleaning equipment
- Demonstrate the cleaning process of creel room area and equipment with the specified cleaning aid and chemicals
- Prepare a sample report related to issues occur during cleaning activities and for requirement of any additional cleaning at workarea
- Apply appropriate ways to check that workarea is cleaned properly after completion of cleaning activities
- Show how to return back the cleaning equipment and material to store after completion of work
- Show how to dispose the waste material properly as per the organisation's policies and environmental regulations
- Dramatize a situation on how to report data/ problems/ incidents to the appropriate authority as per the standard
- Apply appropriate practices to identify various documentation to be completed relating to one's role
- Demonstrate how to record details accurately in the standard format within the stipulated time
- Apply appropriate practices to prepare the final documents as per standards and requirements and make the documents available for the inspection by the appropriate authorities
- Prepare the sample reports for damage, breakage, etc.
- Roleplay on how to respond to the requests for information as per the standard
- Roleplay a situation to inform the proper authority about the requests received for information as per the standards
- Dramatize a situation on how to report the incidents where standard operating procedures are not followed
- Demonstrate the use of the given Personal Protective Equipment (PPE)
- Demonstrate how to handle fire emergencies through a role play
- Demonstrate how to use a multi-purpose fire extinguisher on simulated fire
- Select the fire extinguisher from the given fire extinguishers, for the specified fire type and class
- Demonstrate first aid procedure for a given injury
- Employ practices for efficient utilization of fuels, material, water and energy/ electricity.
- Apply appropriate ways to prevent soil erosion during plantation and other related activities

- Demonstrate proper waste collection and disposal mechanism depending upon types of waste
- Apply appropriate ways to organise storage of recyclable and reusable material at identified location
- Employ different means and methods of communication depending upon the requirement to interact with the team members
- Demonstrate how to communicate with different genders and persons with disability (PwD) in a sensitive manner
- Role play a situation on how to offer help to people with disability (PwD) if required at work

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Year s	Specialization	Year s	Specialization	
Diploma	Any stream in Engineering	5	Relevant Domain	0	NA	Training experience preferred

Trainer Certification	
Domain Certification	Platform Certification
Certified for a Job Role “Chemical Plant Assistant Operator” mapped to Qualification Pack: “RSC/Q7101, v1.0 with minimum accepted score of 80%.	Recommended that the Trainer is certified for the JobRole ‘Trainer (VET and Skills)’, mapped to the Qualification Pack: ‘MEP/Q2601, v2’ with minimum score of 80%.

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Diploma	Any stream in Engineering	5	Relevant Domain	0	NA	NA

Assessor Certification	
Domain Certification	Platform Certification
Certified for a Job Role “Chemical Plant Assistant Operator” mapped to Qualification Pack: “RSC/Q7101, v1.0 with minimum accepted score of 80%.	Recommended that the Trainer is certified for the JobRole ‘Assessor (VET and Skills)’, mapped to the Qualification Pack: ‘MEP/Q2701, v2’ with minimum score of 80%.

Assessment Strategy

This section includes the processes involved in identifying, gathering and interpreting information to evaluate the learner on the required competencies of the program.

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SDSM/SIP or email
- Assessment agencies send the assessment confirmation to VTP/TC looping SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process & records
- If the batch size is more than 30, then there should be 2 Assessors.

2. Testing Environment: Assessor must:

- Confirm that the centre is available at the same address as mentioned on SDMS or SIP
- Check the duration of the training.
- Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
- Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
- Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
- Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:

- Question papers created by the Subject Matter Experts (SME)
- Question papers created by the SME should be verified by the other subject Matter Experts along with the approval required from SSC
- Questions are mapped with NOS and PC
- Question papers are prepared considering that level 1 to 3 is for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
- Assessor must be ToA certified
- Assessment agency must follow the assessment guidelines to conduct the assessment

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location

- Centre photographs with signboards and scheme specific branding
 - Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
 - Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos
5. Method of verification or validation:
- Surprise visit to the assessment location
 - Random audit of the batch
 - Random audit of any candidate
6. Method for assessment documentation, archiving, and access
- Hard copies of the documents are stored
 - Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage and are stored in the Hard Drives

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training .
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module . A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training
SOP	Standard operating procedure
LOTO	Lock Out Tag Out
PPE	Personal Protective Equipment
PwD	Persons with Disabilities
POSH	Prevention Of Sexual Harassment Policy At Workplace
4Ps	Product, Price, Place and Promotion