



Co-funded by the European Union



Norwegian Embassy
Islamabad



© TVET SSP

OFFSET PRINTING MACHINE OPERATOR

Trainer Guide

National Vocational
Certificate Level 3

Version 1 - September 2018



Implemented by

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Published by

National Vocational and Technical Training Commission
Government of Pakistan

Headquarter

Plot 38, Kirthar Road, Sector H-9/4, Islamabad, Pakistan
www.navttc.org

Responsible

Director General Skills Standard and Curricula, National Vocational and Technical Training Commission
National Deputy Head, TVET Sector Support Programme, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Layout & design

SAP Communications

Photo Credits

TVET Sector Support Programme

URL links

Responsibility for the content of external websites linked in this publication always lies with their respective publishers. TVET Sector Support Programme expressly dissociates itself from such content.

This document has been produced with the technical assistance of the TVET Sector Support Programme, which is funded by the European Union, the Federal Republic of Germany and the Royal Norwegian Embassy and has been commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ). The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in close collaboration with the National Vocational and Technical Training Commission (NAVTTTC) as well as provincial Technical Education and Vocational Training Authorities (TEVTAs), Punjab Vocational Training Council (PVTC), Qualification Awarding Bodies (QABs)s and private sector organizations.

Document Version

September, 2018
Islamabad, Pakistan

OFFSET PRINTING MACHINE OPERATOR

Trainer Guide

National Vocational
Certificate Level 3

Version 1 - September 2018

Contents

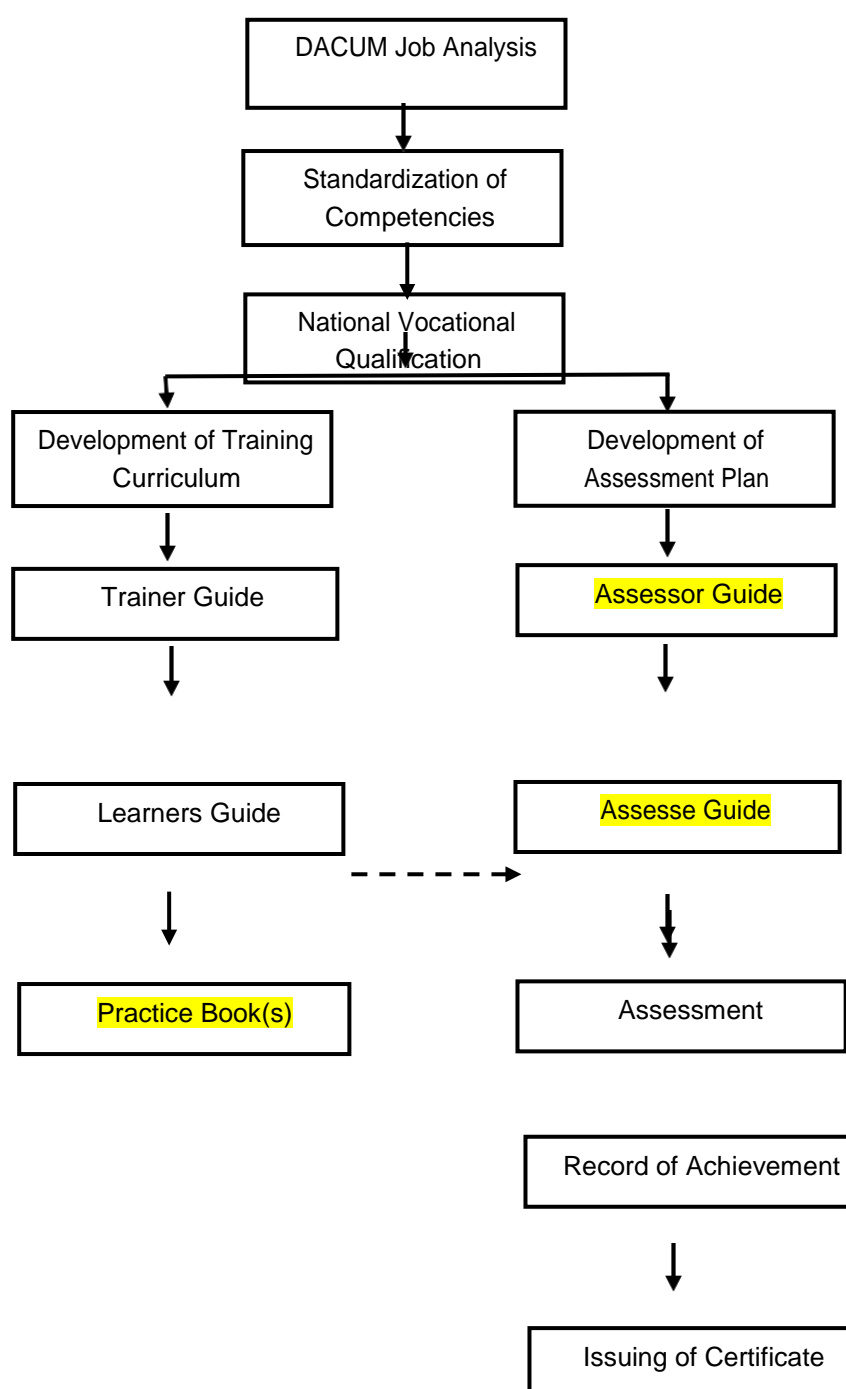
INTRODUCTION	4
EVALUATION OF TRAINING MATERIAL	6
LESSON PLANS.....	7
GUIDELINES FOR WRITING LESSON PLAN	24
FORMAT FOR LESSON PLAN.....	25
DEMONSTRATION OF SKILL	26
OVERVIEW OF PROGRAMME	27
TRAINER GUIDELINES.....	30
Module-A: Perform Color Management	30
Module-B: Maintain Graphic Chemicals in Machine.....	34
Module-C: Develop Professionalism	37
Module-D: Perform Communication	41
Module-E: Manage Press Room Waste	45
IMPLEMENTATION OF CBT PROGRAM.....	
GENERAL INSTRUCTIONS FOR TRAINER/INSTRUCTOR.....	

INTRODUCTION

This Guide supports the Competency-Based Training Curricula that will enable the trainees to achieve the competency standards that have been set by the relevant industry group.

The NVQF Competency-Based Training Curricula along with the associated Training Guides and the Assessment Guides are all developed from the skill competency standards established by Qualification Development Committee (QDC).

Below figure outlines the process of developing the competencies, curriculum, assessment requirements, training delivery program and the assessments guide to certify competencies of trainees achieved during course of the training.



The Trainer Guide provide guidelines and instructions to Trainers on the approaches that are required as per the demand of industry for delivery of the training program.

Curriculum

The curriculum is organized as combination of modules. Each module is broken down into a series of Learning Units. Each Learning Unit comprises of Learning Outcomes, Learning Elements, an estimate of the time needed, and a list of tools, equipment and materials required at the training institute/industry for the learning to take place.

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials needed	Location

Lesson Plans

The Trainer will need to develop a coherent set of lesson plans for each module of the curriculum. This Guide includes a Lesson Plan Template. The Lesson Plans must be documented for later review if necessary.

Assessment

It is necessary to assess the knowledge and skills of the trainees on the completion of each module.

(See the Assessment Guide for further details)

Evaluation of Training Material

Trainers are invited to evaluate the Training Materials based on their experience of training delivery. A template is provided to assistance of the trainer.

EVALUATION OF TRAINING MATERIAL

The trainers/instructors who implement this training material can inform NAVTTC/provincial TEVTAs promptly of any shortcomings in training material on the following format. Please consider it as one of your responsibilities.

Format

Trade:			
Training Material	Module Title & Module Code	Learning Unit Title & Learning Unit Code	Suggested amendments/ feedback/proposal
Trainer Guide			
Learner Guide			
Practice Book			
Trainer Name:		Training Centre:	
Signature of Trainer:		Date:	

LESSON PLANS

Dear Instructors/Trainers,

Model Lesson Plans for one module have been provided in this trainer's guide. A format and guidelines for writing Lesson Plans have also been provided in the succeeding pages. You are advised to prepare your own lesson plans for the remaining Learning Units using the suggested format and guidelines.

OFFSET PRINTING MACHINE OPERATOR

Trainer Guide

National Vocational
Certificate Level 3

Version 1 - September 2018

Module-A

Lesson Plan - 1			
Module: A	Perform Color management		
Learning Unit: 1-1	Control L*a*b* values		
Learning Outcomes			
At the end of the session the learners will be able to:	<ul style="list-style-type: none"> • Match colour L*a*b* values with given reference as per docket/job card • Maintain Delta E(ΔE) of colors with in the specified range during production 		
Methods	Key Notes	Media	Time
Introduction			
Lecture	<p>Introduce the Learning Unit.</p> <p>Motivate the learners to create interest.</p> <p>Make them aware about the following learning elements:</p> <ul style="list-style-type: none"> • Definition of colour management, • Describe process colours, • Define ΔE, • State L*a*b* Values, 	Visuals/ White board	20 min
Main Body			
Lecture	Brief learners about color management and its importance	Learner Guide/ Projector/ White board	140 min
-do-	<p>Explain process and spot colors in detail</p> <p>Describe ΔE</p>		
Group discussion	Discuss about L*a*b* values and procedure of L*a*b* matching		

Field visit	Conduct a visit to a press room lab.		60 min
Conclusion			
Lecture	Summarize the lesson by reviewing important facts.		20 min
Question and Answers	Ask questions to ensure that the learners acquired relevant knowledge.		
Total time:			04 hrs

Lesson Plan -2			
Module: A	Perform Color management		
Learning Unit: 1-2	Control ink density		
Learning Outcomes			
At the end of the session the learners will be able to:			
<ul style="list-style-type: none"> • Fill ink ducts with quantity as per SOPs, • Maintain ink film layer manually on sheets with given reference on manual machines, • Maintain ink film layer by Colour Panel Controller (CPC) on sheets with given reference on advanced machines. 			
Methods	Key Notes	Media	Time
Introduction			
Lecture	<p>Introduce the Learning Unit.</p> <p>Motivate the learners to create interest.</p> <p>Make them aware about the following learning elements:</p> <ul style="list-style-type: none"> • Explain ink density, • Give function of ink duct • State numeric standards of ink 	Visuals/ White board	20 min
Main Body			
<p>Lecture</p> <p>-do-</p> <p>Group discussion</p>	<p>Describe the importance of ink to the learners.</p> <p>Explain ink density,</p> <p>Describe function of ink duct</p> <p>State numeric standards of ink</p> <p>Explain various methods of ink density control</p> <p>State precautionary measures adopted during ink controlling in printing machine,</p> <p>describe film layer,</p> <p>Define procedure of ink layer maintenance for manual printing machine,</p> <p>Define CPC procedure of ink layer maintenance on sheet, for advanced machine</p>	Learner Guide/ Projector/ White board	200 min

Conclusion			
Lecture	Summarize the lesson by reviewing important facts.		20 min
Question and Answers	Ask questions to ensure that the learners acquired relevant knowledge.		
Total time:			04 hrs

Lesson Plan – 3

Module: A	Perform Color management		
Learning Unit: 1-3	Control drying parameters		
Learning Outcomes			
At the end of the session the learners will be able to:			
<ul style="list-style-type: none"> • Control wet ink on sheets through proper drying chemicals/powder • Unload low stacks from the machine as per SOPs. 			
Methods	Key Notes	Media	Time
Introduction			
Lecture	<p>Introduce the Learning Unit.</p> <p>Motivate the learners to create interest.</p> <p>Make them aware about the following learning elements:</p> <ul style="list-style-type: none"> • Knowledge of drying agents used in printing press, • Describe application of drying agents. 	Visuals/ White board	20 min
Main Body			
Lecture -do- -do-	<p>Explain about drying agents to the learners.</p> <p>State different types of drying agents used in printing press,</p> <p>Describe application of drying agents.</p>	Learner Guide/ Projector/ White board	210 min

Conclusion			
Lecture	Summarize the lesson by reviewing important facts.		10 min
Question and Answers	Ask questions to ensure that the learners acquired relevant knowledge.		
Total time:			04 hrs

GUIDELINES FOR WRITING LESSON PLAN

The template for lesson plan has been provided at next page. These guidelines are for trainers, to write their own lesson plans as follows:

1. Introduce yourself and the Learning Unit, and state the Learning Outcomes of the session clearly to invite attention of learners.
2. In **Introduction** part of lesson plan, state the Learning Objectives of the lesson. This allows the learners to organize their thoughts on what they will learn and to perform. Also ask some questions to recall prior knowledge of learners to arise their interest and motivation.
3. In **Body** part of lesson plan, present the new information or material that is to be learned. Demonstration of a skill, relevant to the Learning Unit, is also stated here. The relevant media e.g. handouts, practice book, power-point slides, videos, white board and time duration for each activity be sure in the relevant columns.
4. In **Conclusion** part, list the strategies used for summarizing and reviewing the lesson delivered. Mention the strategies required for formative assessment to ensure that the transfer of knowledge, skill and attitude has been achieved.

FORMAT FOR LESSON PLAN

Module			
Learning Unit			
Learning Outcomes			
<input type="checkbox"/> <input type="checkbox"/>			
Methods	Key Notes	Media	Time
Introduction			
Main Body			
Conclusion			
			Total time:

DEMONSTRATION OF SKILL

Demonstration or modelling a skill is a powerful tool which is used in vocational training. For any practical demonstration, it is important for a Trainer to follow the given instructions:

1. Trainer must be competent enough and practice the skill before demonstration to learners, if possible.
2. Arrange the required tool, equipment and consumables.
3. Introduce the competence to learners clearly at start of the demonstration.
4. Explain how the skill relates with the skill(s) already acquired and describe the expected results or show the objects to learners.
5. Ensure that all the learners are attentive at the time of practical demonstration.
6. Carry out demonstration in a way visible to learners.
7. Perform each step slowly and speak out loudly so that all learners can hear and understand.
8. During the demonstration, guide the learners individually, whenever needed.
9. Mention critical/complex steps and ensure safety precautions
10. Explain theoretical knowledge where applicable and ask questions to learners to check their learning skills.
11. Repeat critical steps in demonstration, if required.
12. Summarize the demonstration and discuss the result of demonstration.

OVERVIEW OF PROGRAM

Course: Offset Printing Machine Operator

Total Duration: 290 hrs

Course Overview:

The purpose of this training programme is to focus on the need, importance and understanding of offset printing machine operator as per the current competitive, challenging and growing printing industrial demands. After successful completion of the Level 3 qualification, offset printing machine operator can perform color printing with management of graphic chemicals. He/she will be able to perform other related tasks e.g. Professionalism, Documentation requirements, Communication skills and manage waste in printing press.

Module	Learning Units	Theory hours	Workplace hours
A- Perform Color management	LU-1-1 Control L*a*b* values LU-1-2 Control ink density LU-1-3 Control drying parameters	10 Hrs	70 Hrs
B- Maintain graphic chemicals in machine	LU-2-1 Maintain pH value LU-2-2 Maintain conductivity LU-2-3 Maintain chiller temperature LU-2-4 Maintain water level in chiller tank LU-2-5 Maintain IPA in water LU-2-6 Maintain fountain solution in water	10 Hrs	70 Hrs
C- Develop Professionalism	LU-3-1 Participate in the in-house training LU-3-2 Participate in outdoor training LU-3-3 Attend trade shows, workshops, seminars LU-3-4 Prioritize job schedule	10 Hrs	30 Hrs

<p>D- Perform Communication</p>	<p>LU-4-1 Instruct labours LU-4-2 Communicate with supervisor LU-4-3 Maintain relations with people LU-4-4 Perform E-mail communication</p>	<p>10 Hrs</p>	<p>30 Hrs</p>
<p>E- Manage press room waste</p>	<p>LU-5-1 Manage printing press waste LU-5-2 Manage toxic chemicals LU-5-3 Handle non-toxic chemicals LU-5-4 Manage paper waste LU-5-5 Manage solid waste</p>	<p>10 Hrs</p>	<p>40 Hrs</p>



TRAINER'S GUIDELINE

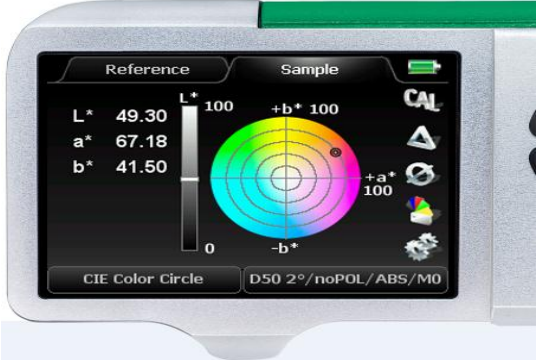


Module-A: Perform Color management

Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
LU-1-1 Control L*a*b* values	<p>Teach the learner the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Explain colour management • Define ΔE, • Describe L*a*b* Values and procedure of L*a*b* matching. <p>Engage learners to make the list of process colours</p> <p>Question/Answer session</p>	Classroom	Learner's Guide/ Hand Outs Visuals
LU-1-2 Control ink density	<p>Teach the learner the following learning elements through lecture:</p> <ul style="list-style-type: none"> • State precautionary measures adopted during ink controlling in printing machine, • Explain ink density and function of ink duct, • Explain procedure of ink layer maintenance on sheet for manual printing machine, • Define numeric standards of ink density, • Explain film layer, • Define CPC procedure of ink layer maintenance on sheet, • Define various method of ink density control. <p>Question/Answer session Group discussion</p>	Classroom -do- -do-	Learner's Guide/Hand Outs Visuals



LU-1-3 Control drying parameters	Teach the learner the following learning elements through lecture: <ul style="list-style-type: none">• Explain drying agents used in printing press,• Discuss application of drying agents. Question/Answer session	Classroom	Learner's Guide/Hand Outs
----------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------	---------------------------

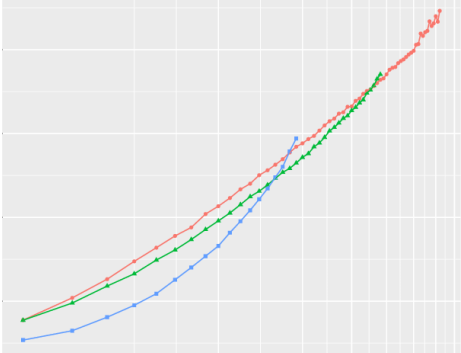


Practical Activity:

Module: A	Perform color management	
	Learning Unit: 1-1	Control L*a*b* values and Color management
	Practical Description	Use a spectrophotometer to find out L*a*b* values and Delta E values of a sample
Time:	10 min	
Equipment	Offset printing machine	
Tools	Spectrophotometer, light booth	
PPE	Proper dress code, safety shoes	
Materials	Printed sample/Color swatch	
Key Point	Spectrophotometer may be built into the CPC or may be an independent device.	
Learning Outcome:	The learner will be able to find out the color density, L*a*b*and Delta (Δ)E of a color with spectrophotometer.	
Precautions:	Ensure that sensor of spectrophotometer and the sample are dust free before operation. Ensure calibration of spectrophotometer.	
Instructions		Illustrations
1. Collect the sample.		
2. Place the sample under spectrophotometer sensor.		
3. Press the button		



<p>4. Record the Lab values of the sample from display</p>	
<p>5. Check the value and check for variance from the job card/Specimen.</p>	
<p>6. Communicate to supervisor.</p>	
<p>7. Maintain the desired L*a*b* values</p>	

Practical Activity:

		Perform color management
Module: A	Learning Unit: 1-2	Control ink density
	Practical Description:	Use a densitometer to find out density values of various spot colors
Time:	10 min	
Equipment	Densitometer	
Tools	Ink scrapper (chansa)	
PPE	Proper dress code, safety shoes	
Materials	Printed sample	
Key Point	Density of the sample will vary with darkening of colors	
Learning Outcome:	The learner will be able to find out the density of a color layer.	
Precautions:	Ensure that sensor of densitometer and the sample are dust free before operation. Ensure the calibration of densitometer.	
Instructions		Illustrations
1. Collect the sample		
2. Place the sample under densitometer sensor		
3. Press the button		

<p>4. The display will show a percentage values of the sample</p>	
<p>5. Record the values</p>	
<p>6. Communicate to the supervisor</p>	
<p>7. Maintain the ink density as per the SOP</p>	

Practical Activity:

Module: A	Perform color management	
	Learning Unit: 1-3	Control drying parameters
	Practical Description:	Add drying agent to fount and ink
Time:	15 min	
Equipment	Calibrated beaker, Weighing Scale, pH meter, Conductivity meter, IPA meter	
Tools	Scrapper	
PPE	Proper dress code, Rubber gloves, safety shoes	
Materials	Ink and Ink dryer	
Key Point	Mix proper amount of ink dryer in ink as per specifications on dryer packaging.	
Learning Outcome:	The learner will be able to control drying problems of ink in offset printing.	
Precautions:	Drying agents should be applied as per manufacturer specification.	
Instructions		Illustrations
1. Use the calibrated beaker to measure the drying agent as per manufacturer's instruction.		
2. Add the drying agent to the ink and mix using the scrapper		

3. Add ink to the printing machine



<p>LU-2-4 Maintain water level in chiller tank</p>	<p>Teach the learner the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Explain cause and effect of using recommended mix in machine instead of raw water • Discuss water fountain system in offset printing machine • Give importance of chilled water in fountain system. <p>Question/Answer session</p>	<p>Classroom</p>	<p>Learner's Guide/Handouts /Multimedia</p>
<p>LU-2-5 Maintain IPA in water</p>	<p>Teach the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Describe function and behavior of IPA after mixing in water. 	<p>Classroom</p>	<p>Learner's Guide/Handouts /Multimedia</p>
<p>LU-2-6 Maintain fountain solution in water</p>	<p>Teach the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Calculate ratio of fountain solution in water • Describe the procedure of water chemical controlling in printing machine. 	<p>Classroom</p>	<p>Learner's Guide/Handouts Multimedia</p>

OFFSET PRINTING MACHINE OPERATOR

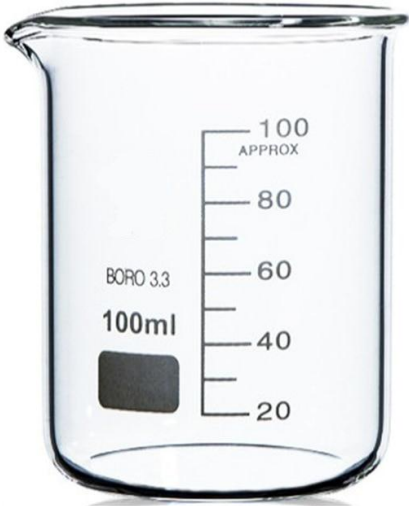
Trainer Guide

National Vocational
Certificate Level 3

Version 1 - September 2018

Module-B

Practical Activity:

		Maintain graphic chemicals in machine	
Module: B	Learning Unit: 2-1	Maintain pH value	
	Practical Description:	Measure the pH value of water by using pH meter	
Time:	30 min		
Equipment	pH Meter.		
Tools	Calibrated Beaker		
PPE	Proper dress code, safety shoes,		
Materials	Sample of tap water, Sample of RO water, pen, log book		
Key Point	Before using a pH probe and meter to test pH, test the meter in a substance with a known pH rating to calibrate it.		
Learning Outcome:	The learner will be able to measure the pH value by using pH meter.		
Precautions:	Before performing pH test, rinse the probe and meter with clean water and dry with a clean tissue. Temperature of water must be checked before starting the test because temperature affects the sensitivity of the probe		
Instructions		Illustrations	
1. Collect 100 ml samples of tap and RO (can use mineral) water in clean containers that is deep enough to cover the tip of the probe.			

2. Use a thermometer to check the temperature of the sample, and then adjust the meter to match the sample temperature.



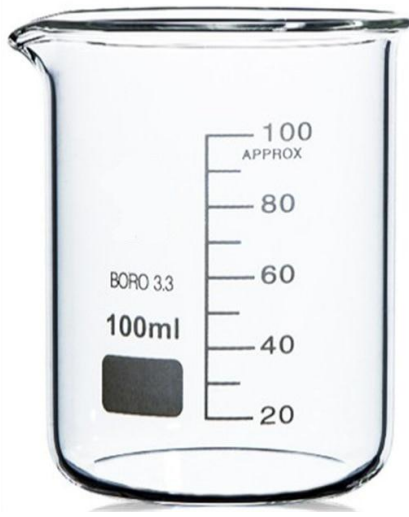
3. Insert the probe into the sample and wait for the measurement to become steady, which indicates the meter has reached equilibrium.



4. Record pH level of the sample.



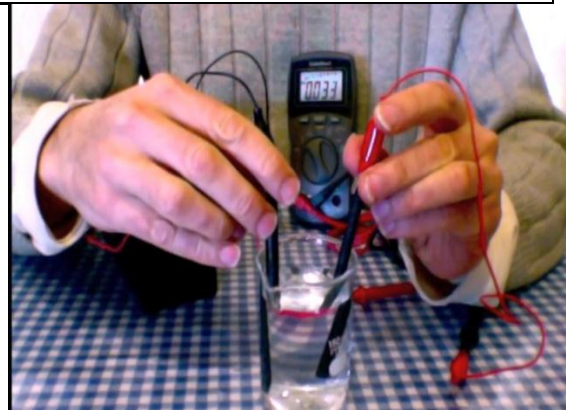
Practical Activity:

		Maintain graphic chemicals in machine	
Module: B	Learning Unit: 2-2	Maintain conductivity	
	Practical Description:	Measure the conductivity of water by using conductivity meter	
Time:	30 min		
Equipment	Conductivity Meter.		
Tools	Calibrated Beaker		
PPE	Proper dress code, safety shoes, safety gloves		
Materials	Sample of tap water, Sample of RO water, pen, log book		
Key Point	Conductivity must be checked within the specified time intervals		
Learning Outcome:	The learner will be able to measure the conductivity by using meter.		
Precautions:	Before performing conductivity test, rinse the probe and meter with clean water and dry with a clean tissue. Temperature of water must be checked before starting the test because temperature affects the sensitivity of the probe		
Instructions		Illustrations	
1. Collect 100 ml samples of tap and RO water in clean containers that is deep enough to cover the tip of the probe.			

2. Use a conductivity meter to check the conductivity of the sample. Insert the probe into the sample and wait for the measurement to become steady



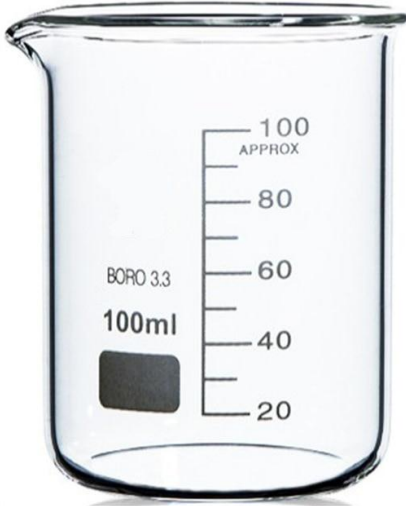
3. Steady reading indicates that the meter has reached equilibrium.



4. Record the data.



Practical Activity:

		Maintain graphic chemicals in machine	
Module: B	Learning Unit: 2-3	Maintain chiller temperature	
	Practical Description:	Measure the temperature of water	
Time:	30 min		
Equipment	Thermometer		
Tools	Calibrated beaker		
PPE	Proper dress code, safety shoes		
Materials	Sample of water.		
Key Point	Maintaining water temperature helps in overcoming scumming and proper ink transfer		
Learning Outcome:	The learner will be able to check the temperature of water		
Precautions:	Ensure the tip of thermometer must be covered with water		
Instructions		Illustrations	
1. Collect 100 ml samples of water in clean containers that is deep enough to cover the tip of the thermometer.			

2. Use a thermometer to check the temperature of the sample



3. Record the data.



Module- C: Develop professionalism			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
LU-3-1 Participate in in-house training	<p>Teach the following learning elements through lecture:</p> <ul style="list-style-type: none"> • State importance of Industrial Kaizen • Discuss basic mathematical skills during training • Give importance of basic English skills during training, • Describe the importance of being a good team player, • Identify TLM /curriculum <p>Group Activity Individual practice Arrange an activity of housekeeping through check sheet.</p> <p>Question Answer session</p>	<p>Classroom</p> <p>Press room lab/ industry</p>	Learner's Guide/ hand out/ Multimedia
LU-3-2 Participate in outdoor training	<p>Teach the learners the following learning elements;</p> <ul style="list-style-type: none"> • Describe importance to participate in the press training, • Identify press room Key Performance Indicators (KPIs) • Explain importance and methods of time management <p>Group Activity</p>	Classroom	Learner's Guide/hand out/ Multimedia

<p>LU-3-3 Attend trade shows, workshop, seminars</p>	<p>Teach the learners the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Discuss the benefits of latest machining techniques and developments, • Describe the need of skill sets by getting involved in seminars • Read books/magazines related with mechanical manufacturing trade. <p>Question/Answer session Learners practice in small groups.</p>	<p>Classroom</p>	<p>Learner's Guide/ Multimedia</p>
<p>LU-3-4 Prioritize job schedule</p>	<p>Teach the learners the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Explain production plan • Define advantages of preparation of production plan <p>Question answer session</p>	<p>Classroom</p>	<p>Learner's Guide/ Multimedia</p>

OFFSET PRINTING MACHINE OPERATOR


Trainer Guide

National Vocational
Certificate Level 3

Version 1 - September 2018

Module-C

Practical Activity:

		Develop professionalism	
Module: C	Learning Unit: 3-1	Participate in indoor training	
	Practical Description:	Clean workstation	
Time:	45 min		
Equipment	N/A		
Tools	Cleaning cloth, Dustpan		
PPE	Proper dress code, safety gloves, safety shoes		
Materials	Cleaning agent, caution signs		
Key Point	Oil and water on the floor should be properly cleaned so that no residue is left		
Learning Outcome:	Clean and organized workstation		
Precautions:	When using hazardous chemicals, read manufacturer's instructions for safety		
Instructions		Illustrations	
1. Check for dust, debris, water and oil spill around the work floor			
2. Pick up a clean cloth and wipe the floor			

3. Collect the dust and debris in a dustpan



4. Ensure cleanliness of oil spots on the floor/working table





5. Perform drying of wet floor with the help of cloth.


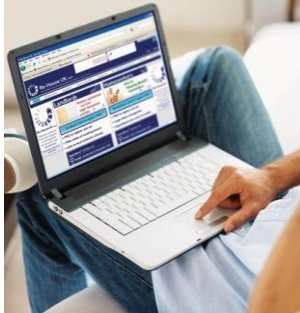





6. Mark the freshly cleaned area with a caution sign



Practical Activity:


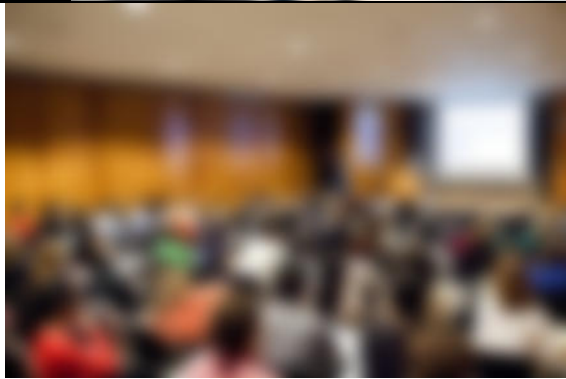
		Develop professionalism	
Module: C	Learning Unit: 3-2	Participate in outdoor training.	
	Practical Description:	Collect information about the new printing training courses available	
Time:	2 hrs		
Equipment	Computer with internet		
Tools	Training brochures		
PPE	N/A		
Materials	Tools/equipment list, Training provider's brochures, TLM		
Key Point	Stay focused when browsing for new training opportunities		
Learning Outcome:	Learner will be able to collect information about the new training courses available		
Precautions:	Identify a field of work to get your advanced training in.		
Instructions		Illustrations	
1. Make a list of your current activities in the pressroom and identify your weak points which needs to be improved			
2. Take input from your classmates and trainer and ask them what should be your next training			

<p>3. Ask your trainer which institutes offer training in the mentioned functions collect brochures if available</p>	
<p>4. Browse the internet for specific printing training institutes</p>	
<p>5. Note down the contact information for the course being offered</p>	
<p>6. Call the institute and ask for the timing and duration of the course</p>	
<p>7. Inform your trainer/supervisor about the available course and timings and ask them if you can join advance course without disrupting current activities or you will need an exemption from current training/work</p>	

8. Join the advance training course



Practical Activity:

		Develop Professionalism	
Module: C	Learning Unit: 3-3	Attend trade shows, workshop, seminars	
	Practical Description:	Attending the shows related to the printing industries. Seminars and workshops for knowledge on latest printing techniques and innovative technologies.	
Time:	6 hours		
Equipment	N/A		
Tools	N/A		
PPE	N/A		
Materials	National and International Magazines and Operation Manual		
Key Point	Ensure access to the relevant offset printing information		
Learning Outcome:	Get aware to the upcoming market trends in printing trade by attending trade shows, workshops and seminars		
Precautions:	Gain first hand industrial knowledge by participating in professional seminars.		
Instructions		Illustrations	
1. Visit offset printing exhibition to get exposure of latest techniques and technologies.			
2. Attend seminars to get updated with the latest printing techniques.			

3. Read printing magazines and improve the knowledge up to date with all the news and innovative technologies.







4. Attend workshops related to the printing press for knowledge of the workflow of a printing press



Practical Activity:

		Develop Professionalism	
Module: C	Learning Unit: 3-4	Prioritize job Schedule	
	Practical Description:	Interpret docket / job card	
Time:	45 min		
Equipment	N/A		
Tools	N/A		
PPE	N/A		
Materials	Docket / job card, log book		
Key Point	It is important to correctly interpret the job card in order to avoid confusion		
Learning Outcome:	The learner will be able to interpret the job from docket or job card		
Precautions:	Read carefully, do not miss out information.		
Instructions		Illustrations	
<p>1. Collect the docket/job card</p>		<div style="text-align: right; font-weight: bold;">Job Card</div> <div style="text-align: center; font-size: small;">DUF Printers and publishers, Pakistan</div> <div style="text-align: center; border: 2px solid black; padding: 5px; font-size: large; font-weight: bold; margin: 10px auto;">G-802</div> <div style="text-align: right; border: 1px solid black; padding: 2px; font-size: small; margin: 5px auto;">Delivery date: 22 March 2022</div> <p>P.O No.</p> <p>by: Nasir Mehmood, Manager operations</p> <p>Assigned on: 15 March 2022</p> <p>For: Mr. Zaheer Butt (Gigit College of I.T)</p> <p>Price: XXXXXXXXXXX</p> <p>Job Type: Flyer</p> <p>Quantity: 2000</p> <p>Color: 2+ 0</p> <p style="padding-left: 20px;">size 9 x 11(12)</p> <p style="padding-left: 20px;">Type Offset</p> <p>Paper</p> <p style="padding-left: 20px;">Reams 1</p> <p style="padding-left: 20px;">GSM 80</p> <p>Plates 2</p> <p>Special instructions: Match colors as per provided sample</p>	

<p>2. Match the details with the provided equipment, materials and tools</p>	
<p>3. Match the size of substrate and number of plates provided with the docket/ job card.</p>	
<p>4. If found any error, report to the supervisor</p>	
<p>5. Note the time required for the job and the time available in the shift</p>	
<p>6. Start the printing process</p>	

Module-D: Perform communication			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
LU- 4-1 Make telephone calls	<p>Teach the learners the following learning element through lecture:</p> <ul style="list-style-type: none"> • Concentrate on commands/speeches • Record information about enquiry or complaint as per company's practice <p>Group discussion Individual question answer session</p>	Classroom	Learner's Guide/ Multimedia
LU- 4-2 Instruct labors	<p>Teach the learners the following learning elements</p> <ul style="list-style-type: none"> • Identify factors required to communicate effectively and precisely within same organization, • Explain elements required to deal with vendors and the other organizations, • Describe the methods to overcome the sentiment, • Use language which labor could understand elegantly. <p>Question answer session</p>	Class room	Learner's guide/ Multimedia

<p>LU- 4-3 Communicate with supervisor</p>	<p>Teach the learners the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Define use of communication skills and adapting necessary strategy to produce the quality of outcomes required, • Explain the importance of accurate communication, fill indent form and maintain work history <p>Arrange practice session to prepare learners to communicate</p>	<p>Classroom</p>	<p>Learner's Guide/ Multimedia</p>
<p>LU- 4- 4 Maintain relations with people</p>	<p>Teach the learners the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Explain advantages of maintaining good occupational relations with printing industry people <p>Arrange Question and answers session</p>	<p>Classroom</p>	<p>Learner Guide/ Multimedia</p>
<p>LU- 4-5 Perform E-mail communication</p>	<p>Teach the learners the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Define steps of creating new e-mail account, • Describe e-mail writing ethics, • Describe method of e-mail sent confirmation <p>Arrange Question and answers session</p>	<p>Classroom</p>	<p>Learner Guide/ Multimedia</p>

OFFSET PRINTING MACHINE OPERATOR


Trainer Guide

National Vocational
Certificate Level 3

Version 1 - September 2018

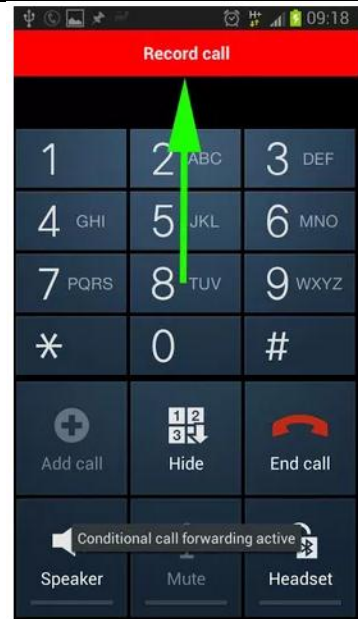
Module-D

Practical Activity:



Module: D	Perform Communication	
	Learning Unit: 4-1	Make telephone calls
	Practical Description:	This practical activity helps how to record information on telephone call
Time:	2 Hours	
Equipment	Telephone	
Tools	N/A	
PPE	Proper dress code	
Materials	Note pad, Pencil	
Key Point	To make telephone calls company's policy must be considered	
	Adopt courteous behavior	
Learning Outcome:	Communication styles	
	Investigate issues/problems	
	Perform phone conversation applying time management concisely	
	Be polite and brief over the phone call.	
Precautions:	Be professional.	
Instructions		Illustrations
<p>Communication style on telephone call: Telephone calls may be broken into three major parts.</p> <p>(1) the introduction, in which both parties establish their identity and the convenience of the call</p> <p>(2) the purpose, which involves communicating needs by asking well-constructed questions</p> <p>(3) the conclusion, whereby both parties reach a verbal agreement on the points made during the call and any specific action that needs to be taken</p>		
<p>Open questions: These questions call for more than a yes/no answer and often begin with who, what, where, when, why or how.</p> <p>Closed questions: These questions are used primarily to verify information. Often these questions begin with are you, do you, can, could, did, will, or would.</p>		<p style="text-align: center;">Open vs. Closed Questions</p> <ul style="list-style-type: none"> • Open-ended questions begin with: <ul style="list-style-type: none"> - What...? - Why...? - How...? • Closed-ended questions begin with: <ul style="list-style-type: none"> - Is /are...? - Do / did...? - Would / will...? - Could / can...? - Was / were...? - Have / has...? - Which...? - Who...? - When...? - Where...?

Call Record for:

Enquiries
Complaints



Practical Activity:

		Perform Communication	
Module: D	Learning Unit: 4-2	Instruct labors	
	Practical Description:	Prepare labor to handle emergency situation.	
Time:	4 Hours		
Equipment	Telephone set		
Tools	-		
PPE	-		
Materials	Emergency contact list		
Key Point	Maintain Safety at the workplace		
Learning Outcome:	Communicate effectively during emergency situation		
Precautions:	Do not make panic during emergency situation		
	Do not loose courage during emergency situation		
	Follow company emergency policy		
Instructions		Illustrations	
1. Assess the situation			
2. Adopt emergency exit to evacuate the floor			

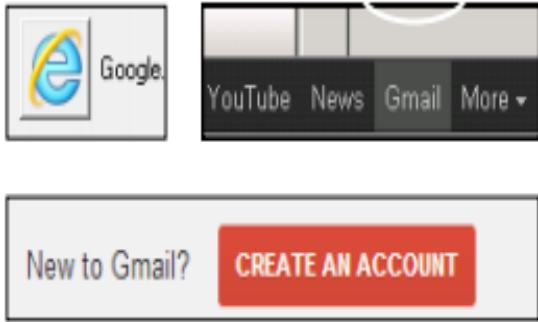
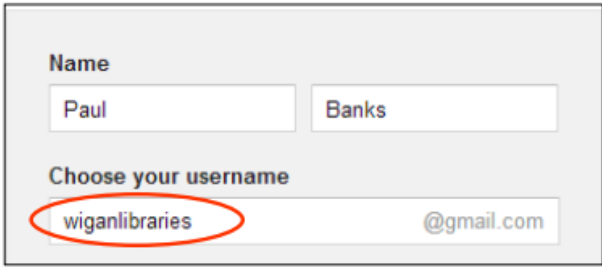
3. Gather at assembly point
away from danger area.



4. Contact relevant authorities
for further assistance



Procedure of creating E-mail account:

Module: D	Perform Communication	
	Learning Unit: 4-5	Perform E-mail communication
	Practical Description:	This practical helps how to register for an email account.
Time:	2 Hours	
Equipment	Computer with Internet	
Tools	-	
PPE	-	
Materials	-	
Key Point		
Learning Outcome:	Perform required communication via internet with in specified time	
Precautions:		
Instructions		Illustrations
<p>Step 1:</p> <p>Click on the google link on the people's network. Then click on the Gmail link near the top left of the page. If using a computer elsewhere perform an Internet search for Gmail.</p> <p>Click on create an account.</p>		 <p>The illustration shows a Google search result for Gmail. On the left is the Google logo. On the right is a search bar with 'YouTube News Gmail More' as suggestions. Below the search bar is a box that says 'New to Gmail?' with a red button that says 'CREATE AN ACCOUNT'.</p>
<p>Step 2:</p> <p>Choosing your email address to set up your new account, Google needs some information about you. Type your first and last names. To create an email, you need to choose a username. Your email address will be your username followed by '@gmail.com'.</p>		 <p>The illustration shows the Gmail account creation form. It has two input fields for 'Name' with 'Paul' and 'Banks' entered. Below that is a section 'Choose your username' with an input field containing 'wiganlibraries' (circled in red) and '@gmail.com' as a suffix.</p>

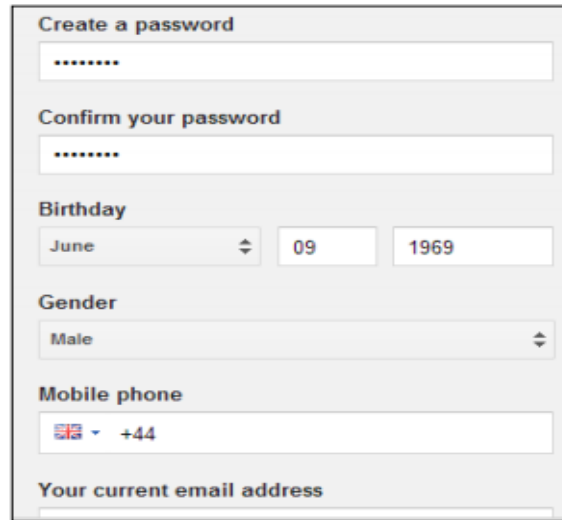
Step 3:

Choosing your password that is 8 characters or more.

Make sure your password is secure and one that you can remember! Secure passwords include combinations of upper and lowercase letters and numbers.

Verifying your Gmail account type your birthday and gender.

Enter your mobile telephone number or an alternative email address if you have one.



The screenshot shows the 'Create a password' section with two password input fields. Below that is the 'Birthday' section with a dropdown menu for the month (set to 'June'), and two input fields for the day ('09') and year ('1969'). The 'Gender' section has a dropdown menu set to 'Male'. The 'Mobile phone' section includes a country code dropdown (set to '+44') and a phone number input field. The 'Your current email address' section has an empty input field.

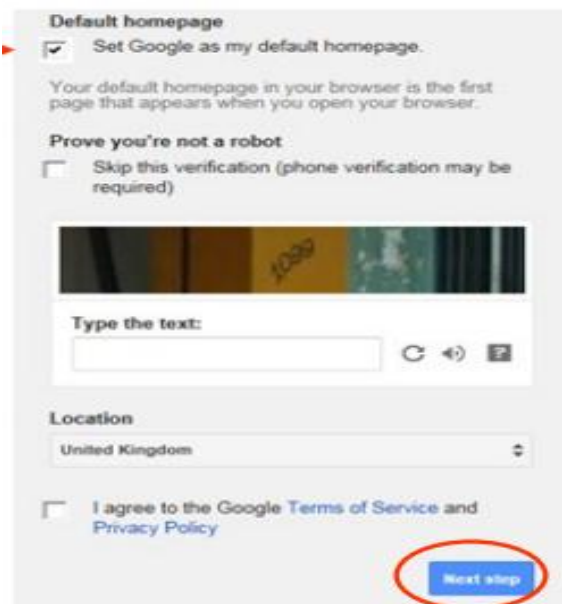
Step 4:

Prove you're not a Robot!

You may want to uncheck the box next to set Google as my default homepage'.

Type in the letters or digits as they appear on the screen.

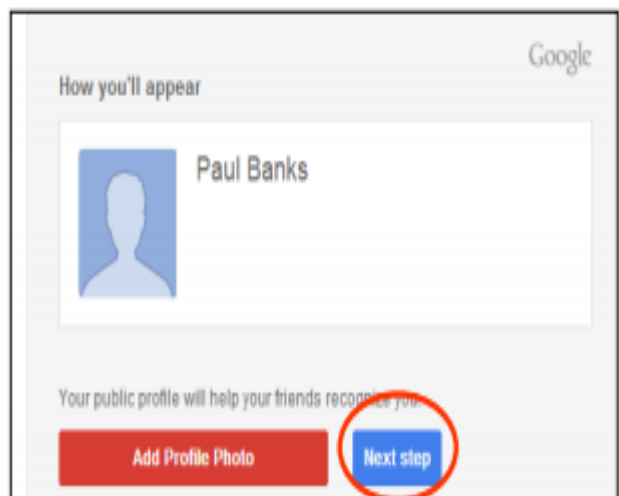
Agree to the terms of service by checking the box.



The screenshot shows the 'Default homepage' section with a checked checkbox for 'Set Google as my default homepage.' Below it is a text box for 'Type the text:' with a CAPTCHA image showing the number '1000'. There are also 'Location' and 'I agree to the Google Terms of Service and Privacy Policy' sections. A blue 'Next step' button is circled in red at the bottom right.

Step 5:

Click on next step. (you can add a profile picture at a later stage)



The screenshot shows the 'How you'll appear' section with a placeholder profile picture and the name 'Paul Banks'. Below it is a red 'Add Profile Photo' button and a blue 'Next step' button, which is circled in red.

Congratulations!

You have created an email account! To start using email click on continue to Gmail.



Welcome Paul!

Now you're ready to search, create, and share across lots of Google products. Check out your new account in the upper right (click your photo to edit your profile, access Google+, review account settings, and view or adjust settings for web history). We've also sent you an email to show you how to get even more out of Google.

Your new email address is wiganlibraries@gmail.com.

Thanks for creating an account. Have fun!

[Continue to Gmail](#)

Module-E: Manage press room waste			
Learning Unit	Suggested Teaching/ Learning Activities	Delivery Context	Media
LU-5-1 Manage printing press waste	<p>Teach the learners the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Enlist printing press waste, • Define safety precautions to manage printing waste, • State method of printing press waste control <p>Arrange group practice Question answer session</p>	<p>Classroom</p> <p>Press room lab/ industry</p>	Learner's Guide/ Multimedia
LU-5-2 Handle toxic chemicals	<p>Teach the learners the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Describe toxic chemical in printing press, • Enlist toxic chemical used in printing press, • Explain procedure of toxic chemical management. <p>Question answer session</p>	Classroom	Learner's Guide/ Multimedia
LU-5-3 Handle non-toxic chemicals	<p>Teach the learner the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Define common non-toxic waste in printing press, • Explain procedure of non-toxic waste disposal without affecting environment. <p>Group discussion</p>	Classroom	Learner's Guide/Hand Outs Multimedia

<p>LU-5-4 Handle paper waste</p>	<p>Teach the learner the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Describe advantages of storing waste papers • Explain techniques of disposal of the paper waste without affecting environment. <p>Arrange practice</p>	<p>Classroom</p> <p>Press room lab/ industry</p>	<p>Learner's Guide/Hand outs Multimedia</p>
<p>LU-5-5 Manage solid waste</p>	<p>Teach the following learning elements through lecture:</p> <ul style="list-style-type: none"> • Enlist common routine solid waste in printing press, • State procedure of disposal of solid waste without affecting environment. <p>Arrange practice</p>	<p>Classroom</p> <p>Press room lab/ industry</p>	<p>Learner's Guide/Hand outs Multimedia</p>

OFFSET PRINTING MACHINE OPERATOR



Trainer Guide

National Vocational
Certificate Level 3

Version 1 - September 2018

Module-E

Practical Activity:

		Manage press room waste	
Module: E	Learning Unit: 5-1	Manage printing press waste	
	Practical Description:	Sort and maintain the waste generated at the workplace according to usability	
Time:	2 hours		
Equipment	Tagging machine		
Tools	N/A		
PPE	Proper dress, safety gloves, safety shoes		
Materials	Waste bin		
Key Point	Maintain record of reusable items		
Learning Outcome:	Sort the waste according to usability Tag & maintain the record of reusable items		
Precautions:	Sort & Handle the waste material carefully		
Instructions		Illustrations	
1. Collect all the waste generated at workplace.			
2. Sort out unusable articles			

3. Place unusable articles at appropriate place and label it.





4. Dispose of waste in a proper way.



5. Record all reusable waste articles in a register



Practical Activity:

Module: E	Manage press room waste	
	Learning Unit: 5-1	Manage printing press waste
	Practical Description:	Segregation of scrap
Time:	2 hours	
Equipment	N/A	
Tools	N/A	
PPE	Proper dress, safety gloves, safety shoes	
Materials	Waste bin	
Key Point	Maintain record of reusable items	
Learning Outcome:	Sort the waste according to usability Tag & maintain the record of reusable items	
Precautions:	Handle the waste material carefully	
Instructions		Illustrations
1. Compile all waste and scrap at one place.		
2. Segregate waste papers from the pile of waste and scrape.		

3. Segregate solid waste materials from pile of waste and scrape.



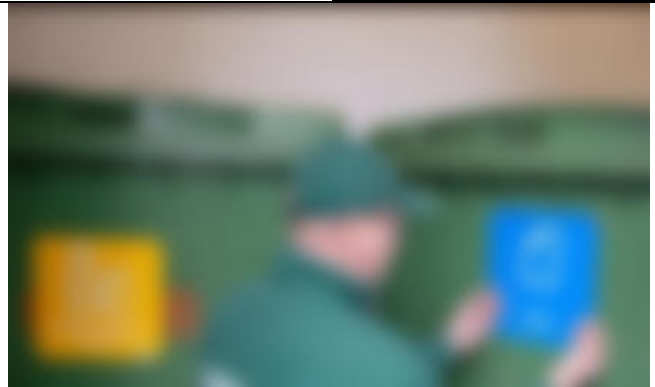
4. Segregate cloth and cotton.



5. Wear gloves, safety shoes tight cloth, while handling waste and scrape.



6. Label and tag all segregated items according to properties.



7. Dispose of waste and scrap according to SOPs.



Practical Activity:

	Manage press room waste	
Module: E	Learning Unit: 5-1	Manage printing press waste
	Practical Description:	Reduce the waste generation in routine work by reuse the categorize waste as per requirement
Time:	2 hours	
Equipment	Tagging Machine	
Tools	N/A	
PPE	Proper dress code, safety shoes, safety gloves	
Materials	Waste bin	
Key Point	Keep record of reusable items	
Learning Outcome:	The learner will be able to reuse the waste as per requirement	
Precautions:	Ensure safety	
Instructions	Illustrations	
1. Segregate all waste and scrap according to their properties.		
2. Put tags on all segregated items according to their properties.		

3. Examine carefully the segregated waste and scrap materials.



4. Arrange all articles and materials in order, which are reusable.



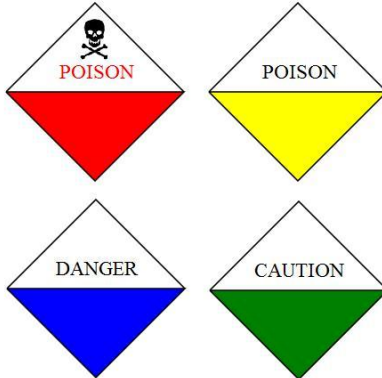

5. Handle carefully the hazardous waste.



6. Disposed of waste and scrap according to SOPs.



Practical Activity:

		Manage press room waste
Module: E	Learning Unit: 5-2	Handle toxic Chemicals
	Practical Description:	Tagging and storing of toxic waste chemical containers at designated place
Time:	2 hours	
Equipment	Tagging machine	
Tools	N/A	
PPE	Proper dress code, Safety shoes, gloves & safety mask	
Materials	Toxic Chemical waste containers	
Key Point	Keep tagging and storing of toxic material carefully	
Learning Outcome:	The learner will be able to handle toxic materials	
Precautions:	Ensure safety	
Instructions		Illustrations
1. Prepare tags for waste chemicals.		
2. Place containers of toxic waste at a safe place carefully.		

3. Tag the toxic containers accordingly




4. Store the toxic waste at its proper place.



5. Wash hands thoroughly



		Manage press room waste	
Module: E	Learning Unit: 5-2	Handle toxic chemicals	
	Practical Description:	Manage inflammable and non-inflammable toxic chemical waste	
Time:	2 hours		
Equipment	Tagging machine		
Tools	N/A		
PPE	Proper dress code, safety gloves, safety mask and safety shoes		
Materials	Toxic chemical waste container		
Key Point	Handle toxic material carefully		
Learning Outcome:	The learner will be able to manage inflammable and non-inflammable chemicals		
Precautions:	Ensure safety		
Instructions		Illustrations	
1. Prepare tags for all inflammable and non-inflammable toxic waste chemicals.		 <p>A red diamond-shaped hazard pictogram with a white border. Inside the diamond, there is a white flame symbol at the top. Below the flame, the words "FLAMMABLE LIQUID" are written in white capital letters. At the bottom of the diamond, the number "3" is written in white.</p>	

2. Place containers of inflammable and non-inflammable toxic waste at a safe place carefully.



3. Tag the inflammable and non-inflammable toxic waste containers according.



4. Store the inflammable and non-inflammable toxic waste at its proper place accordingly.





5. Dispose-off all waste as per SOPs of press room.



6. Wash hands thoroughly



Practical Activity:



	Manage press room waste	
Module: E	Learning Unit: 5-3	Handle non-toxic chemicals
	Practical Description:	Tagging of containers of non-toxic chemical and storage of non-toxic waste to designated place.
Time:	2 hours	
Equipment	Tagging machine	
Tools	N/A	
PPE	Proper dress code, Safety gloves, mask, safety shoes	
Materials	Liquid dispose of container	
Key Point	Keep tagging and storing of non-toxic material carefully	
Learning Outcome:	The learner will be able to handle non-toxic material	
Precautions:	Ensure safety	
	Instructions	Illustrations
	1. Prepare tags for non-toxic waste chemicals.	
	2. Put the nontoxic waste in the container carefully.	

3. Store the nontoxic waste container at its proper place thoroughly.



4. Wash hands gently



		Manage press room waste
Module: E	Learning Unit: 5-3	Handle non-toxic chemicals
	Practical Description:	Disposal of inflammable and non-inflammable non-toxic chemical waste
Time:	2 hours	
Equipment	Tagging machine	
Tools	N/A	
PPE	Proper dress code, safety gloves, safety mask, safety shoes	
Materials	Container for inflammable non-toxic chemical, Container for non-inflammable non-toxic chemical, Waste bin.	
Key Point	Handle the chemicals carefully	
Learning Outcome:	The learner will be able to Dispose of inflammable, non-inflammable non-toxic chemicals	
Precautions:	Ensure safety	
Instructions		Illustrations
1. Segregate inflammable and non-inflammable non-toxic chemicals waste		
2. Dispose of flammable non-toxic chemical.		

3. Dispose of non-inflammable non-toxic chemical as per SOPs.



4. Remove gloves, mask





5. Recheck no waste is left to dispose-off.



5. Wash hands gently



Practical Activity:

		Manage press room waste
Module: E	Learning Unit: 5-4	Handle paper waste
	Practical Description:	Sort paper waste according to disposable categories, its placement in containers and storage at designated place
Time:	2 hours	
Equipment	N/A	
Tools	N/A	
PPE	Proper dress code	
Materials	Waste paper container	
Key Point	Careful sorting of paper waste	
Learning Outcome:	The learner will be able to sort paper waste, put paper waste in designated waste bin and store the waste bin at designated place	
Precautions:	Ensure safety	
Instructions		Illustrations
1. Sort out waste paper and reusable waste paper accordingly.		
2. Ask supervisor if all the sorted substrates can be recycled or some needs to be destroyed		

3. Put paper waste in the designated container.




4. Put reusable paper to appropriate place.



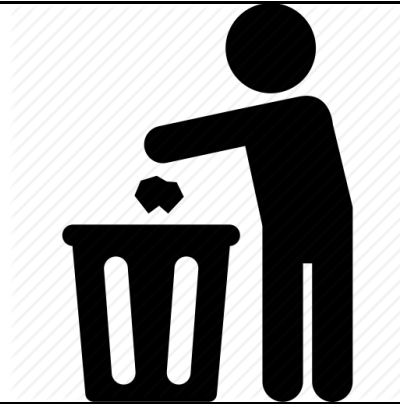
5. Place waste paper container at the designated place.



Practical Activity:

		Manage press room waste	
Module: E	Learning Unit: 5-5	Manage solid waste	
	Practical Description:	Sort and put solid waste in waste bin according to disposable categories, and store waste bins at designated place	
Time:	2 hours		
Equipment	N/A		
Tools	N/A		
PPE	Proper dress code		
Materials	Waste bin		
Key Point	Carefully sorting of solid waste		
Learning Outcome:	The learner will be able to sort paper waste, put solid waste in designated waste bin and store the waste bin at designated place		
Precautions:	Safety first		
Instructions		Illustrations	
<p>1. Sort out solid waste according to disposable categories.</p>		<p>Segregation of Waste</p> 	

2. Put solid waste in waste bin carefully.



3. Store solid waste bin to its designated place.



4. Wash your hands gently.



IMPLEMENTATION OF CBT PROGRAM

Entry Requirement:

Entry for assessment for this qualification is open. However, entry into formal training (CBT) institute for this qualification is the person must have NVQF Level 2 Qualification in Assistant Offset Machine Operator.

Minimum qualification of trainer:

- Preferably F.Sc. with 5 years of working experience in printing industry
- Experience of teaching (at least two years)
- Good communication and computer skills
- Trained for CBT implementation

Recommended trainer, trainee ratio

Institutional Training: 16~20 on Job Training (OJT): 1:4~8

Medium of instructions:

Local / Urdu / English (depending on the learner's understanding)

Proposed duration of Training;

Institutional Training: 03 Month

Scheme of work:

This curriculum comprises of 5 modules.

The recommended delivery time is: 820 hours/82 credit hours.

Delivery of the course can therefore be: 05 hours/working day, 5 days a week (for 03 months institution training)

07 hours a day (for 03 months OJT on average 22 working days a month).

Training providers are at liberty to develop other models of delivery, including part-time and evening delivery.


GENERAL INSTRUCTIONS FOR TRAINER/INSTRUCTOR


Following are the general instructions for Trainers/Instructors:

1. Instructor should perform the role of a facilitator and it is his/her responsibility to focus on the training of learners. He/she must be responsible to make the environment of class/workshop friendly, so that the learner can easily understand and ask the questions from the Trainer.
2. Motivate the learners to discuss the new ideas as under;
 - By asking questions
 - By using flash card/charts
 - By making the topic interesting through real stories/example
3. The theory/practical ratio must be considered as 20%/80%.
4. First impart knowledge and then perform practical demonstration.
5. Time management should be the first priority of Trainers as well as for learners
6. A detailed explanation should be conveyed to the learners by the Trainer about each learning unit.
7. After performing practical demonstration, invite the learners to do the same demonstration according to the given sequence and arrange essential requirements, so that each learner can easily perform the task individually or in group.
8. To enhancing the knowledge of learners, allow them for group discussion.
9. Learner will be divided into small groups by the Trainer.
10. Each group should present their practical job to the Instructor at the end of the session.
11. Specific time should be given to each competence.
12. Plan field trip/visit to relevant industries to enhance learner's interest and motivation.

National Vocational and Technical Training Commission (NAVTTTC)

 Plot 38, Kirthar Road, Sector H-9/4, Islamabad, Pakistan

 +92 51 9044 322

 +92 51 9044 322

 info@navttc.org

 www.navttc.org