

Model Curriculum

Tool Room – Assistant (Plastic)

SECTOR: RUBBER

SUB-SECTOR: PLASTICS PROCESSING

OCCUPATION: TOOL ROOM

REF ID: RSC/Q 4305 (CPC/Q 5102), V1.0

NSQF LEVEL: 2



Certificate

CURRICULUM COMPLIANCE TO
QUALIFICATION PACK - NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

RUBBER SKILL DEVELOPMENT COUNCIL

for the

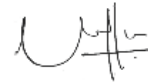
MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: '**Tool Room - Assistant (Plastic)**'
QP No. '**RSC/Q4305 (CPC/Q5102) NSQF Level 2**'

Date of Issuance: December 23, 2018

Valid up to: December 22, 2023

**Valid up to the next review date of the Qualification Pack*



Authorised Signatory
(Rubber Skill Development Council)

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This course encompasses 4 out of 4 NOS (National Occupational Standards) of “Tool Room – Assistant (Plastic)” Qualification Pack issued by “Rubber Skill Development Council”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Introduction Theory Duration (hh:mm) 08:00 Practical Duration (hh:mm) 08:00 Corresponding NOS Code Bridge Module	<ul style="list-style-type: none"> List the major milestones in the developmental history of plastic. Describe the basic industrial scenario of plastics and prospects. Identify types of plastic. List major industrial associations. Describe the roles and responsibilities of a Tool Room – Assistant (Plastic). 	White board, marker, duster, laptop/PC, projector, flipcharts, samples – machined parts for plastic processing machines.
2	Basics of Tool room Theory Duration (hh:mm) 16:00 Practical Duration (hh:mm) 56:00 Corresponding NOS Code RSC/N4315 (CPC/N5106)	<ul style="list-style-type: none"> Describe different units of measurement. List the different measuring tools which are used in the measurement of parts Identify different hand tools which are used in tool room. Select appropriate tools for the job in tool room. Use different hand tools as per requirement. Identify different measuring instrument which are used in the measurement of the part dimensions. Select appropriate measuring instrument for the measurement of the parts. Perform simple measurement of parts. Describe purpose for calibration of measuring instrument. Demonstrate setting process on different types of vices. Undertake material handling during tool room process. Use appropriate Personal Protective Equipment (PPE) while performing different tool room operations. 	White board, marker duster, laptop/PC, projector, steel ruler, micrometer, vernier caliper, radius gauge, feeler gage, Steel measuring tape, weighing balance, hammer, screw driver set, allen key hexagonal, file triangular, hacksaw, adjustable, spanner set double side, adjustable spanner, crimping tools, calculator, wrenches, pliers, cutters, striking tools, vice, clamps, snips, saws, drills and knives, two plate mould, three plate mould, compression mould, blow mould and transfer mould, safety goggle, safety shoes, safety gloves, safety hat, mask, earmuff, first aid box, fire extinguisher
3	Support the machinist Theory Duration (hh:mm) 16:00	<ul style="list-style-type: none"> Describe the toolkit for the operator Discuss the process of work piece loading on the machinery equipment Identify correct toolkits for the operator and check whether all required tools are available in the 	White board, marker duster, laptop/PC, projector, steel ruler, micrometer, vernier caliper, radius gauge, feeler gage, Steel

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Practical Duration (hh:mm) 72:00 Corresponding NOS Code RSC/N4315 (CPC/N5106)	tool kit. <ul style="list-style-type: none"> • Demonstrate the tools holding during operations in the correct manner as specified by the operator. • Use standard operating procedures (SOP) for tool holding so that the operator can easily complete the assigned job. • Provide support to the operator in arranging the work pieces in the specified manner. • Perform work piece loading on the machining equipment using pulleys, chains and other hoisting mechanisms using all safety measures. • Use bench grinders and cutting grinder machines to repair the tools. • Use templates, measuring instruments and hand tools for the process of installation and adjustment of drills, cutters, dyes and guides. • Perform adjustment in tool positions and machine control mechanisms to ensure clearances and tolerances as specified in the operating manual. • Perform storage of equipment, auxiliaries and spare parts in proper designated areas. • Perform cleaning of the equipment and process auxiliaries, to remove any dust, moisture and waste material. • Perform cleaning of the work area to create a healthy, clean and safe working environment. 	measuring tape, weighing balance, hammer, screw driver set, allen key hexagonal, file triangular, hacksaw, adjustable, spanner set double side, adjustable spanner, crimping tools, calculator, wrenches, pliers, cutters, striking tools, vice, clamps, snips, saws, drills and knives, two plate mould, three plate mould, compression mould, blow mould and transfer mould, safety goggle, safety shoes, safety gloves, safety hat, mask, earmuff, first aid box, fire extinguisher
4	Support the machinist in post machining process Theory Duration (hh:mm) 16:00 Practical Duration (hh:mm) 56:00 Corresponding NOS Code RSC/N4316	<ul style="list-style-type: none"> • List the measuring devices for the fished product • List the inspection tools required by the operator • Perform support functions for the machinist in removing the output products from the machining equipment. • Use lifting tools like lifts, pulleys, chains and hoists for unloading them the machined parts. • Perform operations of removing the extra burrs and chips from the metal 	White board, marker duster, laptop/PC, projector, steel ruler, micrometer, vernier caliper, radius gauge, feeler gage, Steel measuring tape, weighing balance, hammer, screw driver set, allen key hexagonal, file triangular, hacksaw, adjustable, spanner set double side, adjustable spanner, crimping tools, calculator,

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	(CPC/N5107)	<p>surface with the help of the appropriate tool.</p> <ul style="list-style-type: none"> Perform support functions for the operator in measuring the specifications of the finished product using devices like micrometer, vernier caliper, gauges, ruler, weighing scales and any other appropriate inspection equipment. Collect right inspection tools for the operator and check whether all required tools are available near the inspection platform. Provide support for the operator in recording the observations during basic inspection process. Identify pieces which are acceptable and pieces not meeting the specified standards. Perform segregation of the defective pieces into two categories – pieces which can be repaired/ modified and pieces which are beyond repair. 	wrenches, pliers, cutters, striking tools, vice, clamps, snips, saws, drills and knives, two plate mould, three plate mould, compression mould, blow mould and transfer mould, safety goggle, safety shoes, safety gloves, safety hat, mask, earmuff, first aid box, fire extinguisher
5	Safety in tool room Theory Duration (hh:mm) 16:00 Practical Duration (hh:mm) 32:00 Corresponding NOS Code RSC/N4317 (CPC/N5104)	<ul style="list-style-type: none"> Discuss the do's and don'ts of the tool room List the Personal Protective Equipment (PPE) List the contents of a first aid box Use Personal Protective Equipment (PPE) such as head protection, fall protection, foot protection, face and eye protection, ear protection, hand and body protection and respiratory protection. Apply do's and don'ts of tool room during day to day working. Perform various safety measures. Prepare first aid box with basic dressing materials and bandages and know resuscitation practices. Perform safe waste disposal. Use fire safety equipment as relevant to the situation. 	White board, marker, duster, laptop/PC, projector, safety goggle, safety shoes, safety gloves, safety hat, mask, earmuff, first aid box, fire extinguisher
6	Health and safety at the workplace Theory Duration (hh:mm) 08:00 Practical Duration (hh:mm)	<ul style="list-style-type: none"> Identify potential health hazards in the rubber industry. Explain the health and safety requirements for the rubber industry. Discuss requirement of Personal Protective Equipment (PPE) in the rubber industry. 	White board, marker, duster, laptop/PC + projector, flipcharts, sample of PPEs – safety goggle, safety shoes, safety gloves, safety hat, mask, earmuff, first aid box, fire extinguisher

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	16:00 Corresponding NOS Code RSC/N4101 (CPC/N0411)	<ul style="list-style-type: none"> Identify different types of Personal Protective Equipment (PPE) used in the rubber industry. Demonstrate the use of different Personal Protective Equipment (PPE). Describe various emergency situations in the rubber industry. Describe common injuries in the industry. Describe First Aid box and its constituents. Demonstrate how to handle fire Emergencies. Demonstrate how to use a multi-purpose fire Extinguisher. Select suitable fire extinguisher as per fire type and class of fire. 	
	Total Duration: Theory Duration 80:00 Practical Duration 240:00	Unique Equipment Required: White board, marker duster, laptop/PC, projector, steel ruler, micrometer, vernier caliper, radius gauge, feeler gage, Steel measuring tape, weighing balance, hammer, screw driver set, allen key hexagonal, file triangular, hacksaw, adjustable, spanner set double side, adjustable spanner, crimping tools, calculator, wrenches, pliers, cutters, striking tools, vice, clamps, snips, saws, drills and knives, two plate mould, three plate mould, compression mould, blow mould and transfer mould, safety goggle, safety shoes, safety gloves, safety hat, mask, earmuff, first aid box, fire extinguisher.	

Grand Total Course Duration: 320 Hours, 0 Minutes.

(This syllabus/ curriculum has been approved by [Rubber Skill Development Council](#))

Trainer Prerequisites for Job role: “Tool Room Assistant (Plastic)” mapped to Qualification Pack: “RSC/Q 4305 (CPC/Q 5102), v1.0”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “ <u>RSC/Q 4305 (CPC/Q 5102) Version 1.0</u> ”.
2	Personal Attributes	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well- organised and focused, eager to learn and keep oneself updated with the latest in the mentioned field.
3	Minimum Educational Qualifications	Any Graduate preferably in plastics technology.
4a	Domain Certification	Certified for Job Role: “ <u>Tool Room Assistant (Plastic)</u> ” mapped to QP: “ <u>RSC/Q 4305 (CPC/Q 5102)</u> ”. Minimum accepted score as per SSC guidelines is 80%.
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “ <u>Trainer</u> ”, mapped to the Qualification Pack: “ <u>MEP/ Q2601</u> ”. Minimum accepted score as per SSC guidelines is 80%.
5	Experience	5+ years of relevant work-experience, above supervisor level.

Annexure: Assessment Criteria

Assessment Criteria	
Job Role:	Tool Room Assistant (Plastic)
Qualification Pack Code:	RSC/Q 4305 (CPC/Q 5102)
Sector Skill Council:	Rubber Skill Development Council

S. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also laydown proportion of marks for Theory and Skills Practical for each PC.
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below).
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on this criteria.
5	To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS.
6	In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

Assessable Outcome	Assessment Criteria	Total Mark (200)	Out Of	Marks Allocation	
				Theory	Skills Practi- cal
RSC/N4315 (CPC/Q5106) Support the machinist in the routine tool room machining activities	PC1. Bring right toolkits for the operator and check whether all required tools are available in the tool kit.	70	7	2	5
	PC2. Hold the tools during operations in the correct manner as specified by the operator and the standard operating procedures so that the operator can easily complete the assigned job.		7	2	5
	PC3. Support the operator in arranging the work pieces in the specified manner as given in the setting document.		7	2	5
	PC4. Ensure that there is no damage done to the work pieces while loading them on the machining apparatus using pulleys, chains and other hoisting mechanisms.		7	2	5
	PC5. Use bench grinders and cutting grinder machines to repair the tools.		6	5	1
	PC6. Use templates, measuring instruments and hand tools for the process of installation and adjustment of drills, cutters, dyes and guides.		6	5	1
	PC7. Adjust tool positions and machine control mechanisms to ensure clearances and tolerances as specified in the operating manual.		6	5	1
	PC8. Extract the jammed pieces using fingers, wire hooks and lift bars.		6	5	1
	PC9. Store equipment auxiliaries and spare parts in proper designated areas.		6	5	1
	PC10. Clean the equipment and process auxiliaries, to remove any dust, moisture, waste material which would have got collected on the equipment and remove the metal chips and extra coolant.		6	5	1
	PC11. Clean the work area in the shop and create a healthy, clean and safe working environment.		6	5	1
Total		70	15	55	
RSC/N4316 (CPC/Q5107) Support the machinist in post machining process	PC1. Support the assistant operator in removing the output products from the machining apparatus in the specified manner as given in the setting document.	45	7	2	5
	PC2. Use lifting tools like lifts, pulleys, chains, hoists and ensure that there is no damage done to the machined pieces while unloading them.		7	2	5
	PC3. Remove the extra burrs and chips from the metal surface with the help of the correction tool.		7	2	5
	PC4. Support the operator in measuring the specifications of the finished product using devices like micro meters, vernier callipers, gauges, rulers, weighing scales and any other inspection equipment.		6	1	5

Assessable Outcome	Assessment Criteria	Total Mark (200)	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC5. Bring right inspection tools for the operator and check whether all required tools are available near the inspection platform.		6	1	5
	PC6. Support the operator in recording the observations during basic inspection process and identify pieces which are acceptable and also pieces not meeting the specified standards.		6	1	5
	PC7. Separate the defective pieces into two Categories – pieces which can be repaired / modified and pieces which are beyond repair and maintain records of each category.		6	1	5
	Total		45	10	35
RSC/N 4317 (CPC/Q5104) Safety practices in tool room	PC1. Use personal protective equipment (PPE) such as head protection, fall protection, foot protection, face and eye protection, ear protection, hand and body protection and respiratory protection.	45	9	4	5
	PC2. Follow do's and don'ts during working.		8	3	5
	PC3. Carry out various Safety measures.		7	2	5
	PC4. Keep first aid box with basic dressing materials and bandages and know resuscitation practices.		7	2	5
	PC5. Know safe waste disposal.		7	2	5
	PC6. Use fire safety equipment relevant to task.		7	2	5
	Total		45	15	30
RSC/N4101 (CPC/N0411) Maintain basic health and safety practices at the workplace, 5S	PC1. Wear protective clothing/ equipment for specific tasks and work conditions.	40	2.5	0.5	2
	PC2. Carry out safe working practices while dealing with hazards to ensure the safety of self and others.		2.5	0.5	2
	PC3. Apply good housekeeping practices at all times.		2.5	0.5	2
	PC4. Use the various appropriate fire extinguishers on different types of fires correctly.		2.5	0.5	2
	PC5. Demonstrate rescue techniques applied during fire hazard, demonstrate good housekeeping in order to prevent fire hazards, demonstrate the correct use of a fire extinguisher.		2.5	0.5	2
	PC6. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals, loud noise, and Identify areas in the plant which are potentially hazardous / unhygienic in nature. Conduct regular checks with support of the maintenance team on machine health to identify potential hazards due to wear and tear of machine.		2.5	0.5	2

Assessable Outcome	Assessment Criteria	Total Mark (200)	Out Of	Marks Allocation	
				Theory	Skills Practical
	PC7. Inform the concerned authorities on the potential risks identified in the processes, workplace area/ layout, materials used etc., Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations.		2.5	0.5	2
	PC8. Create awareness amongst others by sharing information on the identified risks.		2.5	0.5	2
	PC9. Follow the sorting process and check that the tools, fixtures and jigs that are lying on workstations are the ones in use and un- necessary items are not cluttering the workbenches or work surfaces.		2.5	0.5	2
	PC10. Ensure segregation of waste in hazardous/ non-hazardous waste as per the sorting work instructions.		2.5	0.5	2
	PC11. Follow the technique of waste disposal and waste storage in the proper bins as per SOP.		1.5	0.5	1
	PC12. Segregate the items which are labelled as red tag items for the process area and keep them in the correct places.		1.5	0.5	1
	PC13. Sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions.		1.5	0.5	1
	PC14. Ensure that areas of material storage areas are not overflowing.		1.5	0.5	1
	PC15. Ensure properly stack the various types of boxes and containers as per the size/ utility to avoid any fall of items/ breakage and also enable easy sorting when required.				
	PC16. Return of extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area.		1.5	0.5	1
	PC17. Follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards.		1.5	0.5	1
	PC18. Follow the proper labelling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists.		1.5	0.5	1
	PC19. Ensure to check the items in the respective areas have been identified as broken or damaged.		1.5	0.5	1
	PC20. Follow the given instructions and check for labelling of fluids, oils, lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc.		1.5	0.5	1
	PC21. Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions.		1.5	0.5	1

Assessable Outcome	Assessment Criteria	Total Mark (200)	Out Of	Marks Allocation	
				Theory	Skills Practical
	Total		40	10	30
	Grand Total	200	200	50	150
	<u>Percentage Weightage:</u>			25%	75%
	<u>Minimum Pass% to qualify (aggregate):</u>			70%	