

## QUALIFICATIONS PACK- OCCUPATIONAL STANDARDS FOR PLASTICS INDUSTRY

### What are Occupational Standards (OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding

#### Contact Us:

PHD House (4th Floor),  
Opp. Asian Games  
Village,  
Siri Fort Institutional  
Area, New Delhi -  
110016  
E-mail:  
info@rsdcindia.in



### Contents

1. Introduction.....P.1
2. Qualifications Document...P.2
3. Glossary of Key Terms .....P.3
4. Learning Outcome Units....P.5
5. Assessment Criteria.....P.34

## Introduction

### Qualifications Pack- Machine Operator- CNC Lathe

**SECTOR:** RUBBER

**SUB SECTOR:** MANUFACTURING / PLASTICS PROCESSING

**OCCUPATION:** CNC LATHE

**REFERENCE ID:** RSC/Q4201 (CPC/Q7003)

**ALIGNED TO:**

#### Brief Job Description:

The individual work will be operate the CNC lathe machine under supervision, it involves removal of material from the outer diameter of a rotating workpiece as per drawing. It also involves periodical measuring & inspecting the components and continuously monitoring of the machining operations and taking corrective actions in order to ensure that the component is made to the desired quality and tolerance as per drawing.

#### Personal Attributes:

The individual shall have an ability to work long hours, shall have basic communication, capability to understand engineering drawings and simple computations. Sensitivity towards safety for self and equipment. Basic Computer and 5S knowledge.

### Qualifications Pack for Machine operator - CNC Lathe

Job Details	Qualifications Pack Code	RSC/Q4201 (CPC/Q7003)		
	Job Role	Machine Operator – CNC Lathe		
	Credits (NSQF)	24	Version number	1.0
	Sector	Rubber	Drafted on	18/05/2016
	Sub Sector	Manufacturing / Plastics Processing	Last reviewed on	26/12/2016
	Occupation	CNC Lathe	Next review date	31/12/2021
	NSQC Clearance on	21/07/2016		

Job Role	Machine Operator – CNC Lathe
Role Description	It involves removal of material from the outer diameter of a rotating work piece as per drawing. It also involves periodical measuring & inspecting the components and continuously monitoring of the machining operations and taking corrective actions in order to ensure that the component is made to the desired quality and tolerance as per drawing.
NSQF level	3
Minimum Educational Qualifications*	10 <sup>th</sup> Standard
Maximum Educational Qualifications*	
Training (Suggested but not mandatory)	No previous training required
Minimum Job Entry Age	18
Experience	No previous experience required
Applicable National Occupational Standards (NOS)	<b>Compulsory:</b> <ol style="list-style-type: none"> <li>1. <a href="#">RSC/N4201 (CPC/N7011) Perform lathe operations on metal or plastic material using Conventional Centre lathe machine</a></li> <li>2. <a href="#">RSC/N4202 (CPC/N7012) ( Perform turning and other lathe operations on metal or plastic work pieces using Computer Numerically Controlled Lathe machines)</a></li> <li>3. <a href="#">RSC/N4101 (CPC/N0411) ( Maintain basic healthy and safety work practices at workplace, 5s)</a></li> <li>4. <a href="#">RSC/N4203 (CPC/N7014) ( Effective working with others)</a></li> <li>5. <a href="#">RSC/N4506 (CPC/N0219) (Basics of computer and data entry in MS OFFICE/ office Open source suite software)</a></li> <li>6. <a href="#">RSC/N4108(CPC/N0418) Basic knowledge of communication / Soft skills.)</a></li> </ol> <b>Optional:</b>

### Qualifications Pack for Machine operator - CNC Lathe

	N.A.
<b>Performance Criteria</b>	As described in the relevant OS units

## Definitions

Keywords /Terms	Description
Core Skills/Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
Occupational Standards (OS)	OS are Occupational Standards which apply uniquely in the Indian context
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
Qualifications Pack(QP)	Qualifications Pack comprises the set of NOS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Scope	Scope is the set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on the quality of performance required.
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-Sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Sub-functions	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Unit Code	Unit Code is a unique identifier for a OS unit, which can be denoted with an

*Qualifications Pack for Machine operator - CNC Lathe*

Acronyms

	<b>'N'</b>
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry.
<b>Keywords /Terms</b>	<b>Description</b>
OS	Occupational Standard(s)
NVEQF	National Vocational Education Qualifications Framework
NVQF	National Vocational Qualifications Framework
NSQF	National Skills Qualifications Framework
OEM	Original Equipment Manufacturer
OS	Occupational Standard(s)
QP	Qualifications Pack

*RSC/N4201 (CPC/N7011): Perform lathe operations on metal or plastic material using Conventional Centre Lathe Machine*

# National Occupational Standards



## Overview

This unit covers the operation of conventional centre lathe machines, in order to perform turning and other lathe operations on metal or plastic work pieces as per specifications provided.

*RSC/N4201 (CPC/N7011): Perform lathe operations on metal or plastic material using Conventional Centre Lathe Machine*

National Occupational Standards

<b>Unit Code</b>	<b>RSC/N4201 (CPC/N7011)</b>
<b>Unit Title</b>	<b>Perform lathe operations on metal or plastic material using conventional centre lathe machine</b>
<b>Description</b>	This unit covers performing lathe operations such as facing, turning, stepped turning, taper turning, internal & external threading, grooving, chamfering, drilling, boring and reaming, profiles and special forms.
<b>Scope</b>	This unit covers the following: <ul style="list-style-type: none"> <li>☐ Understanding the working principle &amp; construction of lathe machine</li> <li>☐ Working safely</li> <li>☐ Carrying out operations on conventional lathe machine</li> <li>☐ Measuring and checking the work piece as per specification</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Working safely</b>	The operator on the job should be able to: <ul style="list-style-type: none"> <li>PC1. Comply with safety, environmental &amp; other relevant regulations and guidelines</li> <li>PC2. Wear personal protective equipment (PPE) like safety glasses, apron, no loose cloths / hair, safety shoes while performing lathe operations</li> <li>PC3. Ensure work area is clean and safe</li> <li>PC4. Ensure that machine safety guards are in place and are in correctly working condition</li> <li>PC5. Ensure that all tools, equipments are in a safe and usable conditions</li> </ul>
<b>Prerequisite for operating Conventional lathe machine</b>	The operator on the job should be able to: <ul style="list-style-type: none"> <li>PC6. Ensure availability of job specification i.e. approved drawings, sketches, instructions from the supervisor, job instruction sheet / job card.</li> <li>PC7. Read &amp; understand the Job requirements from job specifications and attention shall be given to the geometric tolerances</li> <li>PC8. Check the work piece material for the dimensions and ensure that it is free from foreign objects, dirt or other contamination and is within the required size</li> <li>PC9. Plan to perform the turning or other lathe operations and the sequence of operations as per required job specifications</li> <li>PC10. Obtain all the appropriate tools and measuring instruments / gauges required for the job</li> <li>PC11. Check the lathe machine for its functioning and ensure that it is ready for operation</li> <li>PC12. Prepare the lathe machine for the operations by mounting and setting the required work holding devices and cutting tools</li> <li>PC13. Clarify any doubt, if any and see necessary instruction / training on the operation of the machine whenever required</li> <li>PC14. Hold the work piece securely and correctly, without distortion</li> <li>PC15. Adjust the machine settings as per job requirement to maintain desired accuracy</li> </ul>
<b>Performing Operations on conventional lathe</b>	The operator on the job should be able to: <ul style="list-style-type: none"> <li>PC16. Adjust and set the speed and feed of the lathe machine to achieve the job specifications</li> </ul>



*RSC/N4201 (CPC/N7011): Perform lathe operations on metal or plastic material using Conventional Centre Lathe Machine*

<b>machine</b>	<p>PC17. Operate the machine tool controls safely and correctly, in line with operational procedures both in manual &amp; power modes.</p> <p>PC18. Stop the lathe machine, both in normal and emergency situations correctly by following the right procedure and should be able to restart the machine after and emergency</p> <p>PC19. Should be able to use the lathe machine accessories and attachments such as steady and follower rests, tail stock, taper turning attachments, profile attachments etc.</p> <p>PC20. Perform various lathe operations using different tools to produce components with various features.</p> <p>PC21. Produce components as per required quality standards and free from burrs &amp; sharp edges</p> <p>PC22. Shall achieve given production targets</p> <p>PC23. Shall be able to apply roughing and finishing cuts, considering the effect on tool life, surface finish and dimensional accuracy</p> <p>PC24. Shall be able to use coolants/ cutting fluids for different combinations of work piece and tool as per different locations</p> <p>PC25. Shall be able to observe and report any difficulties/ discrepancies that may arise during the machine operation and carry out the corrective actions as per instructions</p> <p>PC26. Correctly shutting down the machine on completion of the machining operations, removing and disposing of the chips/ waste and critical parameters different locations</p> <p>PC27. Use of measuring instruments/gauges to check critical parameters</p> <p>PC28. Shall be able to carry out the corrective action, in the case of deviation from the required specifications</p>
<b>Seeking Guidance for unresolved Problems</b>	<p>The operator on the job should be able to:</p> <p>PC29. Report the problem to the supervisor, if it cannot be resolved.</p> <p>PC30. Seek guidance from the supervisor/ specialist of the problem is outside his/her area of competence</p>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organization</b>	<p>The individual on the job needs to know and understand:</p> <p>KA1. General policies, procedures rules &amp; regulations followed in company</p> <p>KA2. Employment terms &amp; conditions, entitlements, job role &amp; responsibilities</p> <p>KA3. Do's and Don'ts to be followed in the company</p> <p>KA4. Reporting structure, inter-dependent functions, lines &amp; procedures in the work area</p> <p>KA5. Relevant people and their responsibilities within the work area</p> <p>KA6. Work related procedures and documentation and their importance</p> <p>KA7. Quality management related documentation, if any and their importance</p>
<b>B. Technical Knowledge</b>	<p>The individual on the job needs to know and understand:</p> <p>KB1. Working principle and construction of the conventional centre lathe machine</p> <p>KB2. Start, stop, emergency buttons and machine controls</p> <p>KB3. Safety mechanisms on the machine, safety guards and procedure to check their functionality</p>

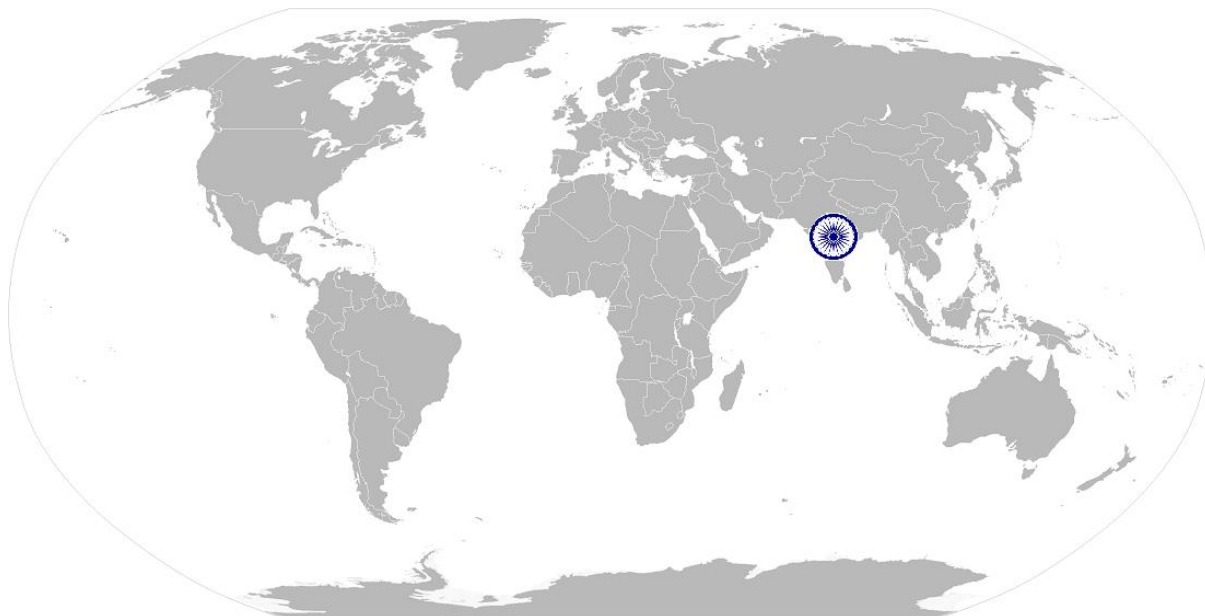
*RSC/N4201 (CPC/N7011): Perform lathe operations on metal or plastic material using Conventional Centre Lathe Machine*

	<p>KB4. Hazards associated with the lathe operations and safety to be observed</p> <p>KB5. Meaning and purpose of turning and other lathe operations</p> <p>KB6. Understanding and use of the metric system of measurements</p> <p>KB7. Concept of engineering drawing, isometric and orthographic projection, sectional views, auxiliary views, dimensioning</p> <p>KB8. Understanding of the geometric tolerances, Hole and shaft basis of ISO tolerance, straightness, flatness, circularity, ovality, surface finish and their symbols.</p> <p>KB9. Type of tools for various lathe machine operation turning, threading, grooving, parting, knurling, parting, knurling, drill, reamer etc.</p> <p>KB10. Type of tool materials- classification, properties &amp; their application</p> <p>KB11. Understanding of cutting parameters and their selection i.e. cutting speed, feed, depth of cut and their effect on tool life and surface finish</p> <p>KB12. Type of coolants/ cutting fluids, classification, application and effect on tool life and surface finish</p> <p>KB13. Understanding of the lathe machine accessories, attachments and their uses</p> <p>KB14. Types of various work holding &amp; tool handling devices &amp; their app</p> <p>KB15. Understanding error messages on machine and taking appropriate corrective action</p> <p>KB16. Importance of securing the work-piece/raw material correctly using appropriate devices and mechanisms</p> <p>KB17. How to check the quality of machined components against the specified quality standards</p>
<b>Skills (S) [Optional]</b>	
<b>A. Core Skills/ Generic Skills</b>	<b>Communication</b>
	<p>The individual on the job needs to know and understand how to:</p> <p>SA1. Read and interpret correctly the job specifications from drawing/ job card, manuals, safety instructions etc. in English and/ or local language</p> <p>SA2. Able to fill up the required formats/ documents in English and / or local language</p> <p>SA3. Interact and communicate with supervisor or other company personnel as per requirement</p>
	<b>Numerical and computational skills</b>
	<p>The individual on the job needs to know and understand how to:</p> <p>SA4. Perform simple numerical computation such as addition, subtraction, multiplication, division, fractions and decimal, percentages and proportions, simple ratios and average</p> <p>SA5. Check and clarify task-related information</p>
<b>B. Professional Skills</b>	<b>Problem Solving</b>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB1. Plan, prioritize and sequence work operations as per job requirements</p> <p>SB2. Shall be able to detect out of tolerance limit of component or any malfunctioning of the machine and take corrective action</p>
	<b>Decision Making</b>
	The individual on the job needs to know and understand how to:



*RSC/N4201 (CPC/N7011): Perform lathe operations on metal or plastic material using Conventional Centre Lathe Machine*

	SB3. Decide when to contact supervisor in case of any unresolved problems
	<b>Analytical and critical thinking</b>
	The individual on the job needs to know and understand how to: SB4. Analyse and interpret geometric dimensions and tolerances and apply balanced judgments to different situations



*RSC/N4201 (CPC/N7011): Perform lathe operations on metal or plastic material using Conventional Centre Lathe Machine*

## **NOS Version Control**

<b>NOS Code</b>	<b>RSC/N4201 (CPC/N7011)</b>		
<b>Credits (NSQF)</b>	<b>12</b>	<b>Version number</b>	<b>1.0</b>
<b>Sector</b>	<b>Rubber</b>	<b>Drafted on</b>	<b>18/05/2016</b>
<b>Sub Sector</b>	<b>Manufacturing / Plastics Processing</b>	<b>Last reviewed on</b>	<b>26/12/2016</b>
<b>Occupation</b>	<b>CNC Lathe</b>	<b>Next review date</b>	<b>31/12/2021</b>



*RSC/N4202 (CPC/N7012): Perform turning and other lathe operations on metal or plastic workpieces using Computer Numerically Controlled Lathe Machine*

# National Occupational Standards



## Overview

This unit covers the operation of Computer Numerically Controlled lathe machine, in order to perform turning and other lathe operations on metal or plastic components, as per specifications provided.

**RSC/N4202 (CPC/N7012): Perform turning and other lathe operations on metal or plastic workpieces using Computer Numerically Controlled Lathe Machine**

National Occupational Standard

<b>Unit Code</b>	<b>RSC/N4202 (CPC/N7012)</b>
<b>Unit Title (Task)</b>	<b>Perform turning and other lathe operations on metal or plastic work pieces using Computer Numerically Controlled Lathe machine</b>
<b>Description</b>	This unit covers the operation of Computer Numerically Controlled (CNC) lathe machine in order to perform turning operations on metal and plastic components, as per specifications provided. This involves removal of material from a rotating cylindrical work-piece.
<b>Scope</b>	This unit/task covers the following: <ul style="list-style-type: none"> <li>Understanding the working principle of CNC Lathe machine</li> <li>Working safely</li> <li>Carry out turning operations using CNC machine</li> <li>Measuring and checking the work piece as per specifications</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Working safely</b>	The operator on the job should be able to: <ul style="list-style-type: none"> <li>PC1. Comply with safety, environmental &amp; other relevant regulations &amp; guidelines</li> <li>PC2. Wear personal protective equipment (PPE) like safety glasses, apron, no loose cloths/ hair, safety shoes while performing lathe operations</li> <li>PC3. Ensure work area is clean and safe</li> <li>PC4. Ensure that machine safety guards are in place and are in correctly working condition</li> <li>PC5. Ensure that all tools, equipments are in a safe and usable conditions</li> </ul>
<b>Prerequisite for operating CNC lathe machine</b>	The operator on the job should be able to: <ul style="list-style-type: none"> <li>PC6. Ensure availability of job specification i.e. approved drawings, sketches, instructions from the supervisor, job instruction sheet/ job card.</li> <li>PC7. Read &amp; understand the Job requirements from the job specifications and attention shall be given to the geometric tolerances</li> <li>PC8. Check the work piece material for dimensions &amp; ensure that it is free from foreign objects, dirt or other contamination &amp; is within required size</li> <li>PC9. Plan to perform turning or other lathe operations &amp; the sequence of operations as per required job specifications on CNC lathe m/c</li> <li>PC10. Obtain all the appropriate tools and measuring instruments/ gauges required for the job</li> <li>PC11. Check the CNC lathe machine for its functioning and ensure that it is ready for operation</li> <li>PC12. Prepare the CNC lathe machine for the operations by mounting and setting the required work holding devices and cutting tools</li> <li>PC13. Clarify any doubt, if any and see necessary instruction /training on the operation of the CNC Lathe machine whenever required</li> <li>PC14. Hold the work piece securely and correctly, without distortion</li> <li>PC15. Adjust the CNC Lathe machine settings as per job requirement to maintain desired accuracy</li> <li>PC16. Perform daily maintenance of machine according to defined checklist,</li> </ul>

*RSC/N4202 (CPC/N7012): Perform turning and other lathe operations on metal or plastic workpieces using Computer Numerically Controlled Lathe Machine*

	at the beginning of day's shifts.
<b>Performing Operations on CNC lathe machine</b>	<p>The operator on the job should be able to:</p> <p>PC17. Use &amp; extract information from engineering drawings, dimensioning and tolerances</p> <p>PC18. Use and extract information from reference charts, tables, graphs and Engineering standards</p> <p>PC19. Load and unload component(s) using pre-determined fixtures or work holding devices as per work instructions</p> <p>PC20. Make basic program and check correctness of program through dry run and single block check</p> <p>PC21. Adjust and set the speed and feed of the CNC lathe machine to achieve the job specifications</p> <p>PC22. Operate the machine tool controls safely and correctly, in line with operational procedures.</p> <p>PC23. Stop the CNC lathe machine, both in normal and emergency situations correctly by following the right procedure and should be able to restart the machine after the emergency</p> <p>PC24. Do first part cutting trial by setting tool offsets to get oversize part</p> <p>PC25. Measure the critical parameters of the machined component on the machine (without removing from the machine ), after the trial run</p> <p>PC26. Correct offsets based on measurements by accessing program edit facility in order to enter tooling data</p> <p>PC27. Measure the component after unloading to check for accuracy in the critical parameters as per job specifications</p> <p>PC28. Produce machined components that combine different turning operations and have a range of features</p> <p>PC29. Follow the specified machining sequence &amp; procedure as per job specifications</p> <p>PC30. Interpret in-built machine alarms and respond to the same as per operating manual or specified instructions</p> <p>PC31. Observe for inconsistency in dimensions due to tool wear and correct the offsets accordingly</p> <p>PC32. Ensure that machine settings are adjusted as and when required, either by self or the setter, to maintain the required accuracy</p> <p>PC33. Identify when tools need replacement and replace worn tool with new tool</p> <p>PC34. Produce components as per required standards</p> <p>PC35. Report problems and seek appropriate assistance in a timely manner</p> <p>PC36. Complete documentation during and post operations as per organizational procedures and applicable quality management system</p> <p>PC37. Return the machine and all tools and equipment to the correct location on completion of activities</p> <p>PC38. Leave the work area in a safe and tidy condition on completion of job activities as per 5S practice</p>
<b>Seeking Guidance for unresolved Problems</b>	<p>The operator on the job should be able to:</p> <p>PC39. Report the problem to the supervisor, if it cannot be resolved.</p> <p>PC40. Seek guidance from the supervisor/ specialist of the problem is outside his/her area of competence</p>



*RSC/N4202 (CPC/N7012): Perform turning and other lathe operations on metal or plastic workpieces using Computer Numerically Controlled Lathe Machine*

Knowledge and Understanding (K)	
<b>A. Organization</b>	<p>The individual on the job needs to know and understand:</p> <p>KA1. General policies, procedures rules and regulations followed in the company</p> <p>KA2. Employment terms &amp; conditions, entitlements, job role &amp; responsibilities</p> <p>KA3. Do's and Don'ts to be followed in the company</p> <p>KA4. Reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA5. Relevant people and their responsibilities within the work area</p> <p>KA6. Work related procedures and documentation and their importance</p> <p>KA7. Quality management related documentation, if any &amp; their importance</p>
<b>B. Technical Knowledge</b>	<p>The individual on the job needs to know and understand:</p> <p>KB1. Working principle and construction of the CNC lathe machine</p> <p>KB2. Start, stop, emergency buttons and M/C controls of CNC Lathe M/C</p> <p>KB3. Safety mechanisms on the machine safety guards and procedure to check their functionality</p> <p>KB4. Hazards associated with CNC lathe operations &amp; safety to be observed</p> <p>KB5. Understanding and use of the metric system of measurements</p> <p>KB6. Absolute and incremental systems of tool positioning and offsetting</p> <p>KB7. Machine zero, work piece zero, work offsets, tool offsets</p> <p>KB8. Tool LOe radius compensation- its necessity &amp; effects of not using it</p> <p>KB9. Types and sources of appropriate job specifications</p> <p>KB10. Basic programming, canned cycles, G &amp; M codes in CNC lathe</p> <p>KB11. Tools &amp; equipment used for machining operations on a CNC machines</p> <p>KB12. Various CNC lathe operations that can be performed, and the methods and equipment used</p> <p>KB13. Correct techniques and procedures to carry out specific turning operations on a CNC lathe</p> <p>KB14. Understanding error messages on machine and taking appropriate corrective action</p> <p>KB15. Importance of securing the work-piece/raw material correctly using appropriate devices and mechanisms and setting the work-holding device in relationship to the machine axis and reference points</p> <p>KB16. Common problems that can occur in CNC Lathe operations and their implications &amp; correct procedures to address problems commonly encountered during CNC Lathe operations</p> <p>KB17. How to check the quality of machined components against the specified quality standards</p> <p>KB18. Use of HSS, Tungsten carbide, Ceramic and Diamond indexable tips, and factors which determine their selection and use</p> <p>KB19. Use of various work holding devices – chuck, tailstock, steady rest</p> <p>KB20. Importance of conducting cutting trial, methods of trial – dry run, single block checks, cutting with offset adjustment to get oversize part</p>

*RSC/N4202 (CPC/N7012): Perform turning and other lathe operations on metal or plastic workpieces using Computer Numerically Controlled Lathe Machine*

	<p>KB21. Parameters to be checked before operating in auto mode – dimensions, surface finishes</p> <p>KB22. Importance of periodic maintenance checks for the machine and what are the common maintenance checks</p> <p>KB23. Selection of cutting tools, tool materials, chip breaker geometry, selecting cutting parameters from tool catalogues, selecting coolant</p> <p>KB24. Extent of their own authority and to whom they should report if they have problems that they cannot resolve</p>
<b>Skills (S) [Optional]</b>	
<b>A. Core Skills/ Generic Skills</b>	<b>Communication</b>
	<p>The individual on the job needs to know and understand how to:</p> <p>SA1. Read and interpret correctly the job specifications from growing/ job card, manuals, safety instructions etc. in English and/ or local language</p> <p>SA2. Able to fill up the required formats/ documents in English and / or local language</p> <p>SA3. Interact and communicate with supervisor or other company personnel as per requirement.</p>
	<b>Numerical and computational skills</b>
	<p>The individual on the job needs to know and understand how to:</p> <p>SA4. Shall be able to use simple numerical computation such as addition, subtraction, multiplication, division, fractions and decimal, percentages and proportions, simple ratios and average</p> <p>SA5. Check and clarify task-related information</p>
<b>B. Professional Skills</b>	<b>Problem Solving</b>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB1. Plan, prioritize and sequence work operations as per job requirements</p> <p>SB2. Shall be able to detect out of tolerance limit of component or any malfunctioning of the machine and take corrective action</p>
	<b>Decision Making</b>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB3. Shall be able to decide when to contact supervisor in case of any unresolved problems</p>
	<b>Analytical and critical thinking</b>
	<p>The individual on the job needs to know and understand how to:</p> <p>SB4. Shall be able to analyse and interpret geometric dimensions and tolerance &amp; apply balanced judgments to different instructions</p>

*RSC/N4202 (CPC/N7012): Perform turning and other lathe operations on metal or plastic workpieces using Computer Numerically Controlled Lathe Machine*

## NOS Version Control

NOS Code	RSC/N4202 (CPC/N7012)		
Credits (NSQF)	7.2	Version number	1.0
Sector	Rubber	Drafted on	18/05/2016
Sub Sector	Manufacturing / Plastics Processing	Last reviewed on	26/12/2016
Occupation	CNC Lathe	Next review date	31/12/2021



*RSC/N4101 (CPC/N0411) Maintain basic health & Safety Practices at the workplace, 5S*

# National Occupational Standards



## Overview

This unit Covers health, safety and security at the work place. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment.

*RSC/N4101 (CPC/N0411) Maintain basic health & Safety Practices at the workplace, 5S*

National Occupational Standards	<b>Unit Code</b>	<b>RSC/N4101 (CPC/N0411)</b>
	<b>Unit Title (Task)</b>	<b>Maintain basic health and safety practices at the workplace, 5S</b>
	<b>Description</b>	<p>This OS unit is about knowledge and practices relating to health, safety and security that candidates need to use in the workplace. It covers responsibilities towards self, others, assets and the environment.</p> <p>It includes understanding of risks &amp; hazards in the workplace, along with common techniques to minimize risk, deal with accidents, emergencies etc. It covers knowledge of fire safety, common first aid applications and safe practice.</p> <p>This OS is about ensuring all 5S activities both at the shop floor and the office area to facilitate increase in work productivity.</p>
	<b>Scope</b>	<p>The role holder will be responsible for</p> <ul style="list-style-type: none"> <li>• Health and safety procedure.</li> <li>• Fire safety procedure.</li> <li>• Emergencies, rescue and first aid procedures.</li> <li>• Ensure sorting, stream lining, storage and documentation, cleaning, standardization and sustenance across the plant premises of the organization.</li> </ul>
	<b>Performance Criteria (PC) w.r.t. the Scope</b>	
	<b>Element</b>	<b>Performance Criteria</b>
	<b>Health and safety</b>	<p>The individual on the job should ensure to:</p> <p>PC1. Wear protective clothing/equipment for specific tasks and work conditions</p> <p>PC2. Carry out safe working practices while dealing with hazards to ensure the safety of Self and others.</p> <p>PC3. Ensure good housekeeping practices at all times</p>
	<b>Fire safety</b>	<p>The individual on the job should be able to:</p> <p>PC4. Use the various appropriate fire extinguishers on different types of fires correctly</p> <p>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.</p>
	<b>Emergencies, rescue and first aid procedures.</b>	<p>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.</p> <p>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.</p> <p>PC8. Create awareness amongst others by sharing information on the identified risks.</p>



*RSC/N4101 (CPC/N0411) Maintain basic health & Safety Practices at the workplace, 5S*

<p><b>Ensure sorting, stream lining, storage and documentation, cleaning, standardization and sustenance across the plant premises of the organization.</b></p>	<p>PC9. Follow the sorting process and check that the tools, fixtures &amp; jigs that are lying on workstations are the ones in use and unnecessary items are not cluttering the workbenches or work surfaces.</p> <p>PC10. Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions</p> <p>PC11. Follow the technique of waste disposal and waste storage in the proper bins as per SOP</p> <p>PC12. Segregate the items which are labeled as red tag items for the process area and keep them in the correct places</p> <p>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</p> <p>PC14. Ensure that areas of material storage are not overflowing</p> <p>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</p> <p>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</p> <p>PC17. Follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards</p> <p>PC18. Follow the proper labelling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists</p> <p>PC19. Ensure to check the items in the respective areas have been identified as broken or damaged</p> <p>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.</p> <p>PC21. To make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions</p>
<b>Knowledge and Understanding (K)</b>	
<p><b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. The relevant standards, procedures and policies related to Health, Safety and Environment followed in the company</p> <p>KA2. The emergency handling procedures &amp; hierarchy for escalation</p>
<p><b>B. Technical Knowledge</b></p>	<p><b>The user/individual on the job needs to know and understand:</b></p> <p>KB1. The basic knowledge of Safety procedures (fire fighting, first aid) within the organization</p> <p>KB2. The basic knowledge of various types of PPEs and their usage</p>

*RSC/N4101 (CPC/N0411) Maintain basic health & Safety Practices at the workplace, 5S*

	<p>KB3. The basic knowledge of risks/hazards associated with each occupation in the organization</p> <p>KB4. The knowledge of personal hygiene and how an individual contribute towards creating a highly safe and clean working environment the individual on the job needs to know and understand.</p> <p>KB5. The meaning of “hazards” and “risks”</p> <p>KB6. The health and safety hazards commonly present in the work environment and related precautions</p> <p>KB7. The possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible</p> <p>KB8. The Possible causes of risk and accident (due to oil leakage)</p> <p>KB9. Methods of accident prevention</p> <p>KB9. Safe working practices when working with tools and machines</p> <p>KB10. Safe working practices while working at various hazardous sites</p> <p>KB11. To know the where to find all the general health and safety equipment in the workplace</p> <p>KB12. Various dangers associated with the use of electrical equipment</p> <p>KB13. Preventative and remedial actions to be taken in the case of exposure to toxic materials</p> <p>KB14. The Importance of using protective clothing/equipment while working</p> <p>KB15. Precautionary activities to prevent the fire accident</p> <p>KB16. Various causes of fire</p> <p>KB17. To know the techniques of using the different fire extinguishers</p> <p>KB18. To know the different methods of extinguishing fire</p> <p>KB19. To know the different materials used for extinguishing fire</p> <p>KB20. Rescue techniques applied during a fire hazard</p> <p>KB21. Various types of safety signs and what they mean</p> <p>KB22. To know the appropriate basic first aid treatment relevant to the condition e.g. shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries</p> <p>KB23. To know the content of written accident report</p> <p>KB24. Potential injuries and ill health associated with incorrect manual handling</p> <p>KB25. Safe lifting and carrying practices</p> <p>KB26. Personal safety, health and dignity issues relating to the movement of a person by others</p> <p>KB27. Potential impact to a person who is moved incorrectly</p> <p>KB28. To have basic knowledge of 5S procedures</p> <p>KB29. To know the various types 5s practices followed in various areas</p> <p>KB30. Understand to the 5S checklists provided in the department/ team</p> <p>KB31. To have skills to identify useful &amp; non useful items</p> <p>KB32. To have knowledge of labels , signs &amp; colours used as indicators</p> <p>KB33. To have knowledge on how to sort and store various types of tools, equipment, material etc.</p> <p>KB34. To know , how to identify various types of waste products</p> <p>KB35. Understand to the impact of waste/ dirt/ dust/unwanted substances on the</p>
--	---

*RSC/N4101 (CPC/N0411) Maintain basic health & Safety Practices at the workplace, 5S*

	process/ environment/ machinery/ human body. KB36. To have knowledge of best ways of cleaning & waste disposal
<b>Skills (S) [Optional]</b>	
<b>Element</b>	<b>Skills</b>
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	The user/ individual on the job needs to know and understand how to: SA1. Understand basic level notes and observations.
	<b>Reading Skills</b>
	<b>The user/individual on the job needs to know and understand about the:</b> SA2. safety instructions put up across the plant premises SA3. Safety precautions mentioned in equipment manuals and panels and understand the potential risks associated
	<b>Oral Communication (Listening and Speaking skills)</b>
	<b>The user/individual on the job needs to know and understand how to:</b> SA4. Effectively communicate information to team members SA5. Inform employees in the plant and concerned functions about events, Incidents & potential risks observed related to Safety, Health and Environment. SA6. Question operator/ supervisor in order to understand the safety related issues SA7. Attentively listen with full attention and comprehend the information given by the speaker during safety drills and training programs
<b>B. Professional Skills</b>	<b>Plan and Organize</b>
	<b>The user/individual on the job needs to know and understand how to:</b> SB1. Process the work order and jobs received from the internal customers. SB2. Design documents received from internal customers SB3. Understand & organize all process/ equipment manuals so that sorting out information is fast.
	<b>Judgment and Critical Thinking</b>
	<b>The user/individual on the job needs to know and understand how to:</b> SB4. Use common sense and make judgments during day to day basis SB5. Use intuition to detect any potential problems which could arise during operations
	<b>Desire to learn and take initiatives</b>
	<b>The user/individual on the job needs to know and understand how to:</b> SB6. Follow instructions and work on areas of improvement identified SB7. Complete the assigned tasks with minimum supervision SB8. Complete the job defined by the supervisor within the timelines and quality norms

*RSC/N4101 (CPC/N0411) Maintain basic health & Safety Practices at the workplace, 5S*

## NOS Version Control

NOS Code	RSC/N4101 (CPC/N0411)		
Credits (NSQF)	1.2	Version number	1.0
Sector	Rubber	Drafted on	18/05/2016
Sub Sector	Manufacturing / Plastics Processing	Last reviewed on	26/12/2016
Occupation	CNC Lathe	Next review date	31/12/2021



*RSC/N4203 (CPC/N7014): Effective working with others*

# National Occupational Standards



## Overview

This unit covers general practices that improve effectiveness of working with others in an organizational set-up.



**RSC/N4203 (CPC/N7014): Effective working with others**
**National Occupational Standard**

<b>Unit Code</b>	<b>RSC/N4203 (CPC/N7014)</b>
<b>Unit Title (Task)</b>	<b>Effective working with others</b>
<b>Description</b>	<p>This unit covers basic etiquette and competencies that an individual is required to possess &amp; demonstrate in their behavior &amp; interactions with others at workplace.</p> <p>These cover areas such as communication, discipline, handling conflict and grievances.</p>
<b>Scope</b>	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> <li>Effective Working with others</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Effective Working with others</b>	<p>The individual on the job should be able to:</p> <p>PC1. Display appropriate communication etiquette while working</p> <p>PC2. Display active listening skills while interacting with others at work</p> <p>PC3. Demonstrate responsible &amp; disciplined behaviors at the workplace</p> <p>PC4. Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required</p> <p>PC5. Accurately pass on information to authorized persons who require it &amp; within agreed timescale and confirm its receipt</p> <p>PC6. Display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible</p> <p>PC7. Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks</p> <p>PC8. Escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict.</p>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)	<p>The individual on the job needs to know and understand:</p> <p>KA1. Policies and procedures followed in the company for working with others in an organizational set-up.</p> <p>KA2. Grievance/ conflict handling mechanism of the company</p> <p>KA3. Relevant people and their responsibilities within the work area</p>
<b>B. Technical Knowledge</b>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Importance of effective communication in the workplace</p> <p>KB2. Importance of teamwork in organizational and individual success</p> <p>KB3. Barriers to effective communication</p> <p>KB4. Importance of avoiding casual expletives and unpleasant terms while communicating professional circles</p> <p>KB5. Various categories of people that one is required to communicate and co-ordinate within the organization</p> <p>KB6. Importance of discipline for professional success</p> <p>KB7. Importance of ethics for professional success</p> <p>KB8. What constitutes disciplined behavior for a working professional</p> <p>KB9. Common reasons for interpersonal conflict</p> <p>KB10. Importance and ways of managing interpersonal conflict effectively</p> <p>KB11. Importance of developing effective working relationships for professional success</p> <p>KB12. Expressing and addressing grievances appropriately and effectively</p>

*RSC/N4203 (CPC/N7014): Effective working with others*

## NOS Version Control

NOS Code	RSC/N4203 (CPC/N7014)		
Credits (NSQF)	1.2	Version number	1.0
Sector	Rubber	Drafted on	18/05/2016
Sub Sector	Manufacturing / Plastics Processing	Last reviewed on	26/12/2016
Occupation	CNC Lathe	Next review date	31/12/2021



*RSC/N4504 (CPC/N0219): Basics of Computer and Data Entry*

# National Occupational Standards



## Overview

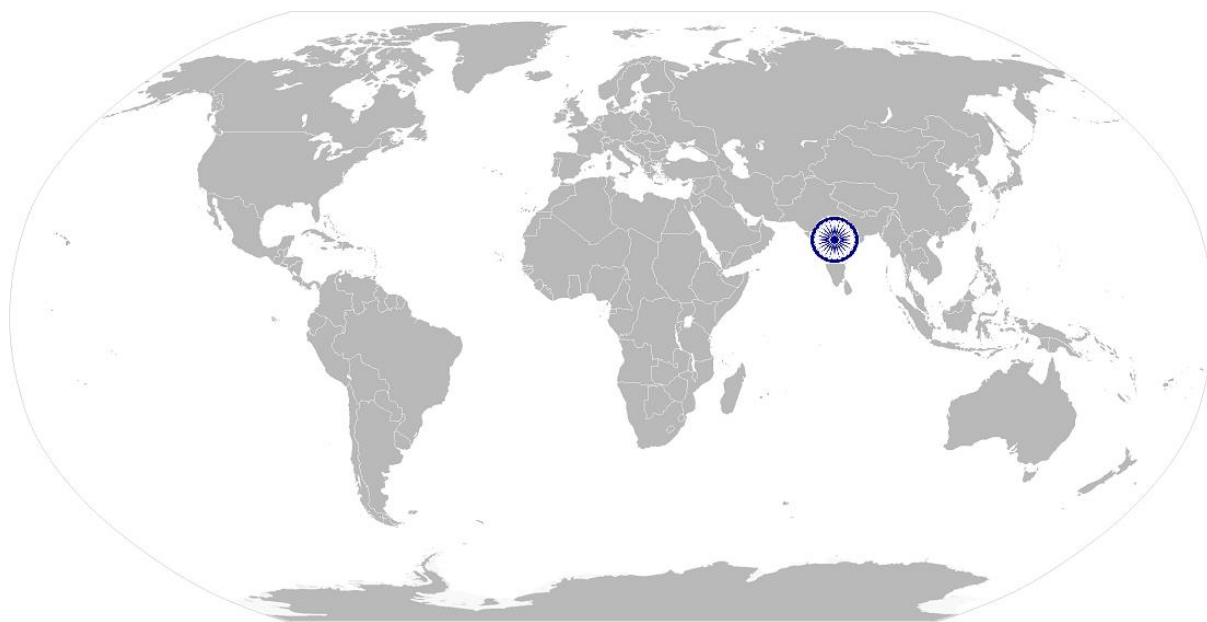
This unit is about the basics of computer and data entry like entering, updating and maintain Job work related data in the computer systems having MS Office software.

*RSC/N4504 (CPC/N0219): Basics of Computer and Data Entry*

National Occupational Standard	<b>Unit Code</b>	<b>RSC/N4504 (CPC/N0219)</b>
	<b>Unit Title (Task)</b>	<b>Basics of computer and data entry in MS OFFICE/office Open source suite Software</b>
	<b>Description</b>	This OS unit is about basics of computer and data entry like entering, updating & maintain Job work related data in the computer systems having MS Office software.
	<b>Scope</b>	This unit / task covers the following <ul style="list-style-type: none"> <li>Enter, update and maintain data in MS Office system</li> </ul>
	<b>Performance Criteria (PC) w.r.t. the Scope</b>	
	<b>Element</b>	<b>Performance Criteria</b>
	<b>Enter, update and maintain data</b>	To be competent, the user/individual on the job must be able to: PC1. Fill and process mandated forms for receiving, processing, or tracking data, enter data from source documents in to Computer application having MS OFFICE software. PC2. Verify data entered with source documents, checks for compliance and corrects all typographical errors and missing or repeated data. PC3. Maintain files of source documents or other information related to data entered. PC4. Update database information to reflect most current source information PC5. Assist in the filing and storage of security and back up data files PC6. Respond to requests for information and access relevant files
	<b>Process Compliances</b>	Comply with relevant legislation, standards, policies and procedures
	<b>Knowledge and Understanding (K)</b>	
	<b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. The data management applications/tools used by the company KA2. Data entry protocol KA3. Data integrity and security policies of the company KA4. Approved methods for carrying document control and archiving
	<b>B. Technical Knowledge</b>	The user/individual on the job needs to know and understand: KB1. Basic understanding computers and its terminology KB2. Work on MS office software
	<b>Skills (S) [Optional]</b>	
	<b>A. Core Skills/ Generic Skills</b>	<b>Reading and Writing Skills</b>
		The user/ individual on the job needs to know and understand how to: SA1. Efficiently enter data into computer applications SA2. Prepare legible reports SA3. Read & understand manuals, SOPs, instructions, memos, reports, job cards etc.
		<b>Oral Communication (Listening and Speaking skills)</b>
		The user/individual on the job needs to know and understand how to: SA4. Communicate effectively with the team members and supervisors
	<b>B. Professional Skills</b>	<b>Decision Making and Problem solving</b>
		Detect problems in day to day tasks:

*RSC/N4504 (CPC/N0219): Basics of Computer and Data Entry*

	SB1. Apply basic logic to identify data errors
	SB2. Pay attention to details
	<b>Plan and Organize</b>
	The user/individual on the job needs to know and understand how to:
	SB3. Plan assigned tasks within timeline and as per priority order specified
	<b>Judgments and Critical Thinking</b>
	The user/individual on the job needs to know and understand how to:
	SB4. Identify process improvements

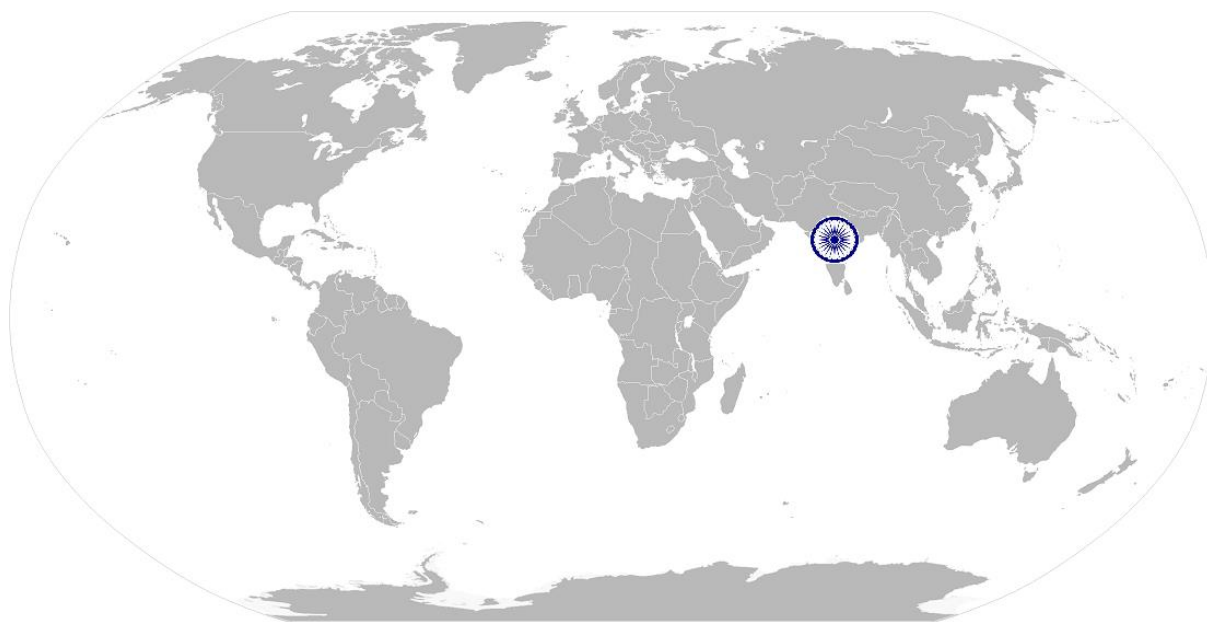




RSC/N4504 (CPC/N0219): Basics of Computer and Data Entry

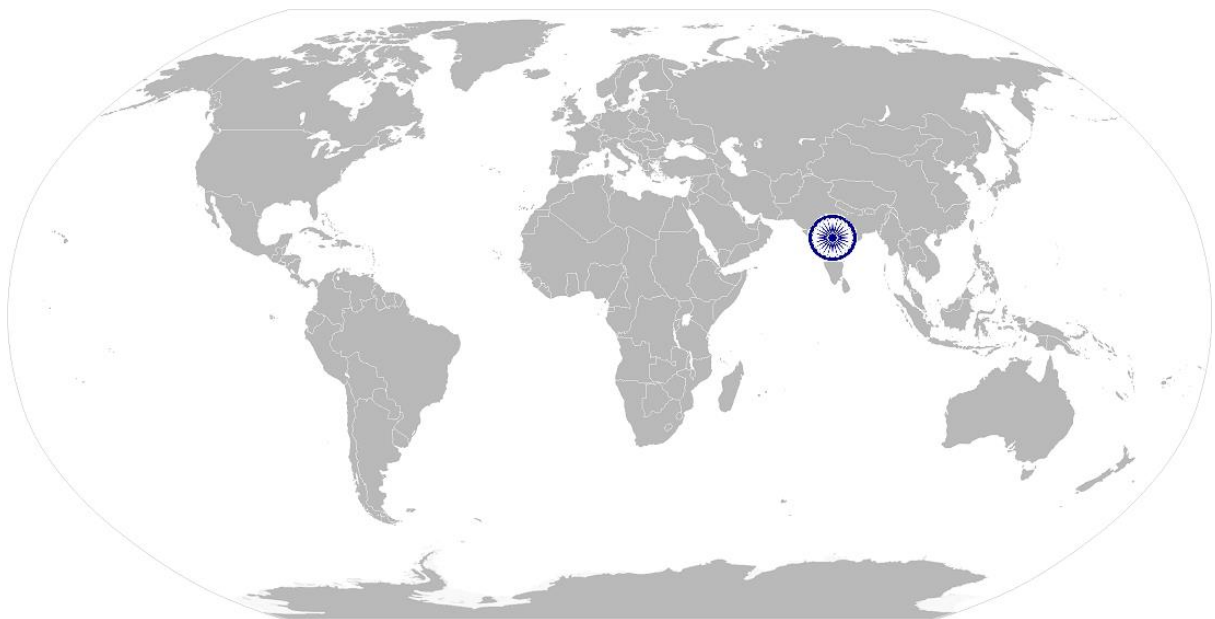
## NOS Version Control

NOS Code	RSC/N4504 (CPC/N0219)		
Credits (NSQF)	1.2	Version number	1.0
Sector	Rubber	Drafted on	18/05/2016
Sub Sector	Manufacturing / Plastics Processing	Last reviewed on	26/12/2016
Occupation	CNC Lathe	Next review date	31/12/2021



*RSC/N4108 (CPC/N0418) Basic Knowledge of Communication/soft skills*

# National Occupational Standards



## Overview

This unit is Provide basic Knowledge of behavioral science. Other soft skills include situational awareness and the ability work on computer.

*RSC/N4108 (CPC/N0418) Basic Knowledge of Communication/soft skills*

Unit Code	RSC/N4108 (CPC/N0418)
Unit Title (Task)	Basic Knowledge of Communication/soft skills
<b>Description</b>	This OS is about ensuring a Person with this attribute has the ability to work in various situations equally well and move from one situation to another with ease and grace. The ability to be diplomatic and respectful even when there are disagreements is also a key soft skill. This skill requires the employee to maintain a professional tone and demeanor even when frustrated.
<b>Scope</b>	The individual needs to understand the following: <ul style="list-style-type: none"> <li>• Basic Knowledge on functions of computer &amp; its operations.</li> <li>• Effective communication &amp; Inter-personal skills</li> </ul>
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
<b>Basic Knowledge on functions of computer &amp; its operations.</b>	<b>The individual on the job should be able to:</b> PC1. Perform basic computer operations. PC2. Learn about basic functions in a Computer
<b>Effective communication &amp; Inter-personal skills</b>	PC3. Accurately receive information and instructions from the supervisor/operator and fellow workers, getting clarification where required PC4. Accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt PC5. Display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible PC6. Consult and assist others to maximize the effectiveness and efficiency in carrying out tasks PC7. Display active listening skills while interacting with others at work PC8. Use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism PC9. Behave as a responsible person at the workplace PC10. Escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict
Knowledge and Understanding (K) w.r.t. the scope	
Element	Knowledge and Understanding
<b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)	<b>The individual on the job needs to know and understand:</b> KA1. Standards, policies, and procedures followed in the company relevant to own employment and performance conditions KA2. Reporting structure, inter-dependent functions, lines and procedures in the work area KA3. Relevant people and their responsibilities within the work area
<b>Elements and Principles of Communication</b>	KA4. Basic Study of Elements of Soft communication skills: <ul style="list-style-type: none"> <li>• Principle of Communication Process</li> <li>• Clarity</li> </ul>

*RSC/N4108 (CPC/N0418) Basic Knowledge of Communication/soft skills*

	<ul style="list-style-type: none"> <li>•Conciseness</li> <li>•Objectivity</li> <li>•Consistency</li> <li>•Completeness</li> <li>•Relevancy</li> <li>•Audience Knowledge</li> <li>•Receiver</li> <li>•Barriers</li> </ul>
<b>How does a computer work?</b>	<p>KA5. Computer functions in the following manner:</p> <ul style="list-style-type: none"> <li>•The computer accepts input</li> <li>•The computer performs useful operations</li> <li>•The computer stores data</li> <li>•The computer produces output</li> <li>•Turning the Computer On and Logging On</li> </ul>
<b>B. Technical Knowledge</b>	<p><b>The individual on the job needs to know and understand:</b></p> <p>KB1. Various categories of people that one is required to communicate and co-ordinate with in the organization</p> <p>KB2. The importance of effective communication in the workplace</p> <p>KB3. Key elements of active listening</p> <p>KB4. The value and importance of active listening and assertive communication</p> <p>KB5. The importance of tone and pitch in effective communication</p> <p>KB6. The importance of ethics for professional success</p> <p>KB7. The importance of discipline for professional success.</p> <p>KB8. The Importance of developing effective working relationships for professional success.</p> <p>KB9. Expressing and addressing grievances appropriately and effectively</p> <p>KB10. The importance and ways of managing interpersonal conflict effectively</p>

*RSC/N4108 (CPC/N0418) Basic Knowledge of Communication/soft skills*

## **NOS Version Control**

<b>NOS Code</b>	<b>RSC/N4108 (CPC/N0418)</b>		
<b>Credits (NSQF)</b>	<b>1.2</b>	<b>Version number</b>	<b>1.0</b>
<b>Sector</b>	<b>Rubber</b>	<b>Drafted on</b>	<b>18/05/2016</b>
<b>Sub Sector</b>	<b>Manufacturing / Plastics Processing</b>	<b>Last reviewed on</b>	<b>26/12/2016</b>
<b>Occupation</b>	<b>CNC Lathe</b>	<b>Next review date</b>	<b>31/12/2021</b>





*Qualifications Pack For Machine operator –CNC Lathe*

<b>CRITERIA FOR ASSESSMENT OF TRAINEES</b>	
<b>Job Role: Machine Operator –CNC Lathe</b> <b>Qualification Pack Code: RSC/Q 4201 (CPC/ Q 7003)</b> <b>Sector Skill Council: Rubber Skill Development Council</b>	
<b>Guidelines for Assessment:</b> <ol style="list-style-type: none"> <li>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.</li> <li>2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.</li> <li>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)</li> <li>4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on this criteria.</li> <li>5. To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS.</li> <li>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.</li> </ol>	

<b>Assessable Outcome</b>		<b>Marks Allocation</b>		
<b>NOS</b>	<b>Performance Criteria</b>	<b>Total</b>	<b>Theory</b>	<b>Practical</b>
<b>RSC/N4201 (CPC/ N 7011): Perform lathe operations on metal or plastic material using Conventional Centre lathe machine</b>	PC1. Understand and comply with safety, environmental & other relevant regulations and guidelines	5.5	0.5	5
	PC2. Wear personal protective equipment (PPE) like safety glasses, apron, no loose cloths/ hair, safety shoes while performing lathe operations regulations while performing CNC turning operations	6	1	5
	PC3. Ensure work area is clean and safe	5	1	4
	PC4. Ensure that machine safety guards are in place and are in correctly working condition	5	1	4
	PC5. Ensure that all tools, equipments are in a safe and usable conditions	5	1	4
	PC6. Ensure availability of job specification i.e. approved drawings, sketches, instructions from the supervisor, job instruction sheet/ job card.	5	1	4
	PC7. Read and understand the Job requirements from the job specifications and attention	5.5	0.5	5

### Qualifications Pack For Machine operator –CNC Lathe

	shall be given to the geometric tolerances			
PC8.	Check the work piece material for the dimensions and ensure that it is free from foreign objects, dirt or other contamination and is within the required size	6	1	5
PC9.	Plan to perform the turning or other lathe operations and the sequence of operations as per required job specifications	6	1	5
PC10.	Obtain all the appropriate tools and measuring instruments/ gauges required for the job	6	1	5
PC11.	Check the lathe machine for its functioning and ensure that it is ready for operation	4	0.5	3.5
PC12.	Prepare the lathe machine for the operations by mounting and setting the required work holding devices and cutting tools	3.5	0.5	3
PC13.	Clarify any doubt, if any and see necessary instruction /training on the operation of the machine whenever required	5	1	4
PC14.	Hold the work piece securely and correctly, without distortion	5	1	4
PC15.	Adjust the machine settings as per job requirement to maintain desired accuracy	4	1	3
PC16.	Adjust and set the speed and feed of the lathe machine to achieve the job specifications	4	1	3
PC17.	Operate the machine tool controls safely and correctly, in line with operational procedures both in manual and power modes.	5	1	4
PC18.	Stop the lathe machine, both in normal and emergency situations correctly by following the right procedure and should be able to restart the machine after & emergency	4	1	3
PC19.	Should be able to use the lathe machine accessories and attachments such as steady and follower rests, tail stock, taper turning attachments, profile attachments etc.	4	1	3
PC20.	Perform various lathe operations using different tools to produce components with various features.	4	1	3
PC21.	Produce components as per required quality standards and free from burrs & sharp edges	4	1	3
PC22.	Shall achieve given production targets	4	1	3
PC23.	Shall be able to apply roughing and finishing cuts, considering the effect on tool life, surface finish and dimensional accuracy	4	1	3

### Qualifications Pack For Machine operator –CNC Lathe

	PC24. Shall be able to use coolants/ cutting fluids for different combinations of work piece and tool as per different locations	4	1	3
	PC25. Shall be able to observe and report any difficulties/ discrepancies that may arise during the machine operation and carry out the corrective actions as per instructions	4	1	3
	PC26. Correctly shutting down the machine on completion of the machining operations, removing and disposing of the chips/ waste and critical parameters different locations	4	1	3
	PC27. Use of measuring instruments/ gauges to check the critical parameters	4	1	3
	PC28. Shall be able to carry out the corrective action, in the case of deviation from the required specifications	4	1	3
	PC29. Report the problem to the supervisor, if it cannot be resolved	4	1	3
	PC30. Seek guidance from the supervisor/ specialist of the problem is outside his/her area of competence	4	1	3
	<b>Sub total</b>	<b>137.5</b>	<b>28</b>	<b>109.5</b>
<b>RSC/N4202 (CPC/ N 7012): Perform turning and other lathe operations on metal or plastic work pieces using Computer Numerically Controlled Lathe Machine</b>	PC1. Understand and comply with safety, environmental & other relevant regulations and guidelines	4.5	0.5	4
	PC2. Wear personal protective equipment (PPE) like safety glasses, apron, no loose cloths/ hair, safety shoes while performing lathe operations while performing CNC turning operations	4.5	0.5	4
	PC3. Ensure work area is clean and safe	4.5	0.5	4
	PC4. Ensure that machine safety guards are in place and are in correctly working condition	4.5	0.5	4
	PC5. Ensure that all tools, equipments are in a safe and usable conditions	3.5	0.5	3
	PC6. Ensure availability of job specification i.e. approved drawings, sketches, instructions from the supervisor, job instruction sheet/ job card.	3.5	0.5	3
	PC7. Read and understand the Job requirements from the job specifications and attention shall be given to the geometric tolerances	3.5	0.5	3
	PC8. Check the work piece material for the dimensions and ensure that it is free from foreign objects, dirt or other contamination and is within the required size	3.5	0.5	3
	PC9. Plan to perform the turning or other lathe operations and the sequence of operations	3.5	0.5	3

### Qualifications Pack For Machine operator –CNC Lathe

	as per required job specifications on CNC lathe machine			
	PC10. Obtain all the appropriate tools and measuring instruments/ gauges required for the job	3.5	0.5	3
	PC11. Check the CNC lathe machine for its functioning and ensure that it is ready for operation	3.5	0.5	3
	PC12. Prepare the CNC lathe machine for the operations by mounting and setting the required work holding devices and cutting tools	3.5	0.5	3
	PC13. Clarify any doubt, if any and see necessary instruction /training on the operation of the CNC Lathe machine whenever required	3.5	0.5	3
	PC14. Hold the work piece securely and correctly, without distortion	3.5	0.5	3
	PC15. Adjust the CNC Lathe machine settings as per job requirement to maintain desired accuracy	3.5	0.5	3
	PC16. Perform daily maintenance of machine according to defined checklist, at the beginning of day's shifts.	4	1	3
	PC17. Use and extract information from engineering drawings, dimensioning and tolerances	4	1	3
	PC18. Use and extract information from reference charts, tables, graphs and Engineering standards	4	1	3
	PC19. Load and unload component(s) using pre-determined fixtures or work holding devices as per work instructions	4	1	3
	PC20. Make basic program and check correctness of program through dry run and single block check	4	1	3
	PC21. Adjust and set the speed and feed of the CNC lathe machine to achieve the job specifications	4	1	3
	PC22. Operate the machine tool controls safely and correctly, in line with operational procedures.	4	1	3
	PC23. Stop the CNC lathe machine, both in normal and emergency situations correctly by following the right procedure and should be able to restart the machine after the emergency	4	1	3
	PC24. Do first part cutting trial by setting tool offsets to get oversize part	4	1	3

### Qualifications Pack For Machine operator –CNC Lathe

	PC25. Measure the critical parameters of the machined component on the machine (without removing from the machine ), after the trial run	4	1	3
	PC26. Correct the offsets based on the measurements by accessing program edit facility in order to enter tooling data	4	1	3
	PC27. Measure the component after unloading to check for accuracy in the critical parameters as per job specifications	4	1	3
	PC28. Produce machined components that combine different turning operations and have a range of features	4	1	3
	PC29. Follow the specified machining sequence and procedure as per job specifications	4	1	3
	PC30. Interpret in-built machine alarms and respond to the same as per operating manual or specified instructions	4	1	3
	PC31. Observe for inconsistency in dimensions due to tool wear and correct the offsets accordingly	4	1	3
	PC32. Ensure that machine settings are adjusted as and when required, either by self or the setter, to maintain the required accuracy	4	1	3
	PC33. Identify when tools need replacement and replace worn tool with new tool	4	1	3
	PC34. Produce components as per required standards	4	1	3
	PC35. Report problems and seek appropriate assistance in a timely manner	3.5	1	2.5
	PC36. Complete documentation during and post operations as per organizational procedures and applicable quality management system	3	1	2
	PC37. Return the machine and all tools and equipment to the correct location on completion of activities	2	1	1
	PC38. Leave the work area in a safe and tidy condition on completion of job activities as per 5S practices	2	1	1
	PC39. Report the problem to the supervisor, if it cannot be resolved	2	1	1
	PC40. Seek guidance from the supervisor/ specialist of the problem is outside his/her area of competence	2	1	1
	<b>Sub total</b>	<b>147</b>	<b>32.5</b>	<b>114.5</b>
<b>RSC/N4101 (CPC/N0411):</b>	PC1. Wear protective clothing/equipment for specific tasks and work conditions	2.5	0.5	2
	PC2. Carry out safe working practices while dealing with	2.5	0.5	2



### Qualifications Pack For Machine operator –CNC Lathe

<b>Maintain basic health and safety practices at the workplace, 5S</b>	hazards to ensure the safety of self and others.			
	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
	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 other by sharing information on the identified risks.	2.5	0.5	2
	PC9. Follow the sorting process and check that the tools, fixtures & jigs that are lying on workstations are the ones in use and unnecessary 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 labeled 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. 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 the 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

### Qualifications Pack For Machine operator –CNC Lathe

	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. Check that 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 levelling 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
	<b>Sub total</b>	<b>40</b>	<b>10</b>	<b>30</b>
<b>RSC/N 4203(CPC/ N 7014) Effective working with others</b>	PC1. Display appropriate communication etiquette while working.	2	1	1
	PC2. Display active listening skills while interacting with others at work	2	1	1
	PC3. Demonstrate responsible and disciplined behaviors at the workplace	2	1	1
	PC4. Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	1.5	0.5	1
	PC5. Accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt	1.5	0.5	1
	PC6. Display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible	1.5	0.5	1
	PC7. Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks	1.5	0.5	1
	PC8. Escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict.	1.5	0.5	1
	<b>Sub total</b>	<b>13.5</b>	<b>5.5</b>	<b>8</b>
<b>RSC/N4504 (CPC/N0219) Basics of computer and data entry in MS OFFICE/office Open source suite Software</b>	PC1. Fill and process mandated forms for receiving, processing, or tracking data, enter data from source documents in to Computer application having MS OFFICE software	4	2	2
	PC2. Verify data entered with source documents, checks for compliance and corrects all typographical errors and missing or repeated data.	4	2	2

*Qualifications Pack For Machine operator –CNC Lathe*

	PC3. Maintain files of source documents or other information related to data entered.	4	3	1
	PC4. Update database information to reflect most current source information	4	3	1
	PC5. Assist in the filing and storage of security and back up data files	4	3	1
	PC6. Respond to requests for information and access relevant files	2	1	1
	<b>Sub total</b>	<b>22</b>	<b>14</b>	<b>8</b>
<b>RSC/N4108 (CPC/N0418): Basic Knowledge of Communication /soft skills</b>	PC1. Accurately receive information and instructions from the supervisor/operator and fellow workers, getting clarification where required	8	2	6
	PC2. Accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt			
	PC3. Display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible	4	1	3
	PC4. Basic Knowledge of consult with and assist others to maximize effectiveness and efficiency in carrying out tasks.	4	1	3
	PC5. Basic Study of Fundamental of Computers.	4	1	3
	PC6. Components of Computer: - Hardware and the software	4	1	3
	PC7. Display active listening skills while interacting with others at work	4	1	3
	PC8. Use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism	4	1	3
	PC9. Demonstrate responsible and disciplined behaviors at the workplace	4	1	3
	PC10. Escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict.	4	1	3
	<b>Sub total</b>	<b>40</b>	<b>10</b>	<b>30</b>
	<b>Total</b>	<b>400</b>	<b>100</b>	<b>300</b>