

Model Curriculum

CNC Setter cum Operator-Vertical Machining Centre

SECTOR:	CAPITAL GOODS
SUB-SECTOR:	1. Machine Tools 2. Dies, Moulds and Press Tools 3. Plastics Manufacturing Machinery 4. Textile Manufacturing Machinery 5. Process Plant Machinery 6. Electrical and Power Machinery 7. Light Engineering Goods
OCCUPATION:	Machining
REF ID:	CSC/Q0123, V1.0
NSQF LEVEL:	5



Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

CAPITAL GOODS SKILL COUNCIL

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: '**CNC Setter cum Operator- Vertical Machining Centre**'
QP No. '**CSC/Qo123 NSQF Level 5**'

Date of Issuance: **November 24th, 2017**

Valid up to*: **November 24th, 2021**

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



Authorised Signatory
(Capital Goods Skills Council)

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CNC Setter cum Operator- Vertical Machining Centre

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “CNC Setter cum Operator-Vertical Machining Centre”, in the “Capital Goods” Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	CNC Setter cum Operator-Vertical Machining Centre		
Qualification Pack Name & Reference ID. ID	CSC/Q0123, v1.0		
Version No.	1.0	Version Update Date	19/09/2018
Pre-requisites to Training	10th Standard passed, preferably. Minimum 1 year as Vertical Machine Operator.		
Training Outcomes	After completing this programme, participants will be able to: <ul style="list-style-type: none"> • Set computer numerically controlled vertical machining center to perform range of operations on metal components. • Perform range of operations on metal components using computer numerical control Vertical Machining centre. • Follow basic healthy and work safety at the workplace. • Work effectively with colleagues and supervisors. 		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of “CNC Setter cum Operator -Vertical Machining Center” Qualification Pack issued by “Capital Goods Skill Council”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p>Set Computer Numerically Controlled Vertical Machining Centre to perform a Range of Operations on Metal Components</p> <p>Theory Duration (hh:mm) 80:00</p> <p>Practical Duration (hh:mm) 160:00</p> <p>Corresponding NOS Code CSC/N0123</p>	<ul style="list-style-type: none"> • Explain various systems of measurement. • Interpret First Angle and Third Angle component drawing correctly. • State safety practices to be followed while operating CNC Vertical Machining Centre. • Explain various CNC machining operations and methods. • Describe CNC machining procedure. • Identify hazards associated while setting CNC Vertical Machining Centre. • Explain various terms used in VMC. • Interpret job specifications correctly. • State the importance of following correct machining sequence. • Describe the procedure to set work holding devices correctly. • State the properties of cutting tool material. • Describe the application of various cutting tools. • Describe factors that determine the selection and use of indexable tips. • Interpret reference charts, graphs and tables. • Identify various forms of raw material. • Define 'Feed' and 'Speed'. • Explain the factors affecting feed and speed based on the material type. • List various types of cutting fluids. • Describe characteristics of cutting fluids. • Interpret various error messages to evaluate actions to be taken. • Explain quality and accuracy standards. • Prepare the work area for the VMC setting operations. • Perform preliminary checks on the machine before the operation. • Obtain required tools and equipment. • Verify that all the measuring tools are calibrated and approved for use. • Upload latest part program onto the CNC machine. • Setup the machine as per the component to be produced. • Verify specific tool number as per the part program. • Enter all tool data to the operating program. 	<p>Training Kit (Presentations, Trainer Guide), Personal Protective Equipment (PPE), engineering drawings, CNC Controlled Vertical Machining Center – 3 axis, machine vice, angle plate, vee-block, clamps, fixtures, indexing head/device, rotary table, magnetic chucks, mills, drills, boring tools, reamers, taps, special profile cutters, allen keys, spanners, wrenches, mallet, mills, drills, boring tool, reamer, taps, special profile cutters, steel rule, micrometer (external/internal), depth gauge, vernier calliper, protractor, slip gauge, hole/bore gauge, thread gauge, radius/profile gauge, dial test indicator (DTI), surface finish equipment, template.</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> Mount work holding devices correctly and check for any backlash. Set the machine operating parameters. Put the machine into correct operating mode. Conduct trial run and perform the suggested checks. Handover the machine to the operator with all necessary documentation. 	
2	<p>Perform a Range of Operations on Metal Components Using Computer Numerical Controlled Vertical Machining Center</p> <p>Theory Duration (hh:mm) 60:00</p> <p>Practical Duration (hh:mm) 140:00</p> <p>Corresponding NOS Code CSC/N0116</p>	<ul style="list-style-type: none"> Explain safety practices to be followed while operating Vertical Machining Center (VMC). Identify required Personal Protective Equipment (PPE) required for machining operation. Locate safety mechanisms on the machine. Identify hazards associated with VMC to avoid accidents. Identify various types of materials. Identify different form of materials. Identify casted, forged and machined components. Explain mechanical properties of ferrous and non-ferrous materials. Interpret first angle and third angle engineering drawings. Interpret work instructions correctly. Explain common terms used in VMC machining. Describe various systems of measurement. Convert units from one system of measurement to another. Identify measuring equipments required for machining. Identify right kind of tool for a specific operation. List work holding devices required machining operation. Explain important characteristics of tungsten carbide, ceramic and diamond indexable tips. Explain effects of critical factors on the machining like feed and speed. Explain absolute and incremental systems of tool positioning and off setting. Explain various CNC machining operations that can be performed. Identify cutting tool based on the application. Interpret error messages displayed on the control panel. 	<p>Training Kit (Presentations, Trainer Guide), CNC Controlled Vertical Machining Center – 3 axis, allen keys, spanner, wrenches, mallet, pneumatic gun, cutting tools, scales, external micrometer, internal micrometer, depth micrometer, digital vernier, dial vernier, protractor, slip gauge, bore/hole gauge, thread gauge, plug gauge, radius/profile gauge, DTI, surface finish equipment, templates.</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> Identify commonly used hand tools. Conduct preliminary check on the machine to check for readiness. Perform simple troubleshooting activities during the machining operation. Perform basic maintenance activities. Set work piece as per the instruction. Load and unload components using pre-determined fixtures or work holding devices. Carry out trial run by taking back the tool offsets by a minimum amount keeping margin error rectification. Measure the critical parameters of the machined component on the machine after the trial run. Perform offset and radius compensation. Produce machined components that combine different operations and have a range of applicable features. Interpret in-built alarms and error codes of equipment and respond to the same as per operating manual/organizational guidelines. Inspect tool for wear and change tool as and when necessary. Fill up appropriate technical forms, activity logs as per the requirement. Follow proper communication protocol. Communicate with people in respectful manner in line with organizational policy. Perform numerical operations, geometry and calculations. Maintain current knowledge of application standards, legislation etc. Address any problems arising during the machining operation. Plan, organize and sequence work operations as per the job requirement. Work in a team to achieve better results. 	
3	<p>Health and safety</p> <p>Theory Duration (hh:mm) 10:00</p> <p>Practical Duration (hh:mm) 08:00</p> <p>Corresponding NOS Code CSC/N1335</p>	<ul style="list-style-type: none"> Explain the importance of Personal Protective Equipment (PPE). Identify appropriate PPE for the various tasks performed. Identify job site risks and hazards to avoid accidents at the work place. Hazards: sharp edged and heavy tools; heated metals; gas cylinders; welding radiation; hazardous surfaces(sharp, slippery, uneven, chipped, broken, etc.); hazardous substances(chemicals, gas, fumes, dust, etc.); physical hazards(working at heights, large and heavy objects and machines, sharp and 	<p>Training kit (Trainer guide, Presentation), leather gloves, leather apron, welding screen – helmet types, hand screen welding and safety shoes</p>

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>piercing objects, tools and machines, intense light, load noise, obstructions in corridors, by doors, blind turns, noise, over stacked shelves and packages, etc.) electrical hazards (power supply and points, loose and naked cables and wires, electrical machines and appliances, etc.)</p> <p>Possible causes of risk and accident: physical actions; reading; listening to and giving instructions; inattention; sickness and incapacity (such as drunkenness); health hazards (such as untreated injuries and contagious illness)</p> <ul style="list-style-type: none"> Identify the names and locations of people responsible for health and safety in the workplace. Identify documents that refer to health and safety in the workplace and where they are located. Carry out safe working practices while dealing with hazards to ensure the safety of self and others. <p>Safe working practices: using protective clothing and equipment; putting up and reading safety signs; handle tools in the correct manner and store and maintain them properly; keep work area clear of clutter, spillage and unsafe object lying casually; while working with electricity take all electrical precautions like insulated clothing, adequate equipment insulation, use of control equipment, dry work area, switch off the power supply when not required, etc.; safe lifting and carrying practices; use equipment that is working properly and is well maintained; take due measures for safety while working in confined places, trenches or at heights, etc. including safety harness, fall arrestors, etc.</p> <ul style="list-style-type: none"> Inspect steps and ladders for faults, set them and use them safely. <p>Ladder faults: corrosion of metal components, deterioration, splits and cracks timber components, imbalance, loose rungs, missing/ unfixed nuts or bolts, etc.</p> <p>Ladders set up: firm/level base, clip/lash down, leaning at the correct angle, etc.</p> <ul style="list-style-type: none"> Work safely in and around trenches, elevated places and confined areas. Lift heavy objects safely using correct procedures. 	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> Apply good housekeeping practices at all times. Good housekeeping practices: clean/tidy work areas, removal/disposal of waste products, protect surfaces Identify common hazard signs displayed in various areas. Various areas: on chemical containers; equipment; packages; inside buildings; in open areas and public spaces, etc. 	
4	<p>Fire Safety</p> <p>Theory Duration (hh:mm) 05:00</p> <p>Practical Duration (hh:mm) 30:00</p> <p>Corresponding NOS Code CSC/N1335</p>	<ul style="list-style-type: none"> Identify causes of fire accidents. Recognise required fire extinguisher based on the type of fire. Types of fires: Class A: e.g. ordinary solid combustibles, such as wood, paper, cloth, plastic, charcoal, etc.; Class B: flammable liquids and gases, such as gasoline, propane, diesel fuel, tar, cooking oil, and similar substances; Class C: e.g. electrical equipment such as appliances, wiring, breaker panels, etc. (These categories of fires become Class A, B, and D fires when the electrical equipment that initiated the fire is no longer receiving electricity); Class D: combustible metals such as magnesium, titanium, and sodium (These fires burn at extremely high temperatures and require special suppression agents) Use the various appropriate fire extinguishers on different types of fires correctly. Interpret fire safety signs. Inspect evacuation plan in case of fire. Identify the location of assembly point, fire exit and fire alarm. Follow reporting procedure in case of a fire. Participate in fire safety drills at the workplace. Demonstrate good housekeeping in order to prevent fire hazards. 	Training kit (Trainer guide, Presentation), Class A,B,C and D fire extinguishers.
5	<p>Emergencies, rescue and first aid procedure</p> <p>Theory Duration (hh:mm) 09:00</p> <p>Practical Duration (hh:mm)</p>	<ul style="list-style-type: none"> Follow electrical safety procedures. Use approved method to rescue a person from electrocution. State the importance of first aid. Identify the contents of a first aid kit. Administer first aid in case of minor injuries, bleeding, burns, choking, electrical shock, poisoning, etc. Demonstrate the artificial respiration and CPR process. 	Training kit (Trainer guide, Presentation), First aid kit with all contents.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	18:00 Corresponding NOS Code CSC/N1335	<ul style="list-style-type: none"> Follow correct method to move injured people and others during an emergency. Explain stages of crisis and crisis management. Participate in emergency procedures as per role. Emergency procedures: raising alarm, safe/efficient evacuation, correct means of escape, correct assembly point, roll call, correct return to work. Write an accident/incident report or dictate a report to another person and send report to person responsible. Incident Report includes details of: name, date/time of incident, date/time of report, location, environment conditions, persons involved, sequence of events, injuries sustained, damage sustained, actions taken, witnesses, supervisor/manager notified. 	
6	Working effectively with others Theory Duration (hh:mm) 20:00 Practical Duration (hh:mm) 60:00 Corresponding NOS Code CSC/N1336	<ul style="list-style-type: none"> State various categories of people that one is required to communicate and co-ordinate within the organization. Explain the importance of effective communication in the workplace. Explain the importance of teamwork in organizational and individual success. Describe various components of effective communication and active listening. Describe the barriers to effective communication. Provide and receive information to and from authorized persons accurately and within agreed timescale. Give information to others clearly, at a pace and in a manner that helps them to understand. Assist others in performing tasks in a positive and helpful manner, where required and possible. Take measures to maximize effectiveness and efficiency in carrying out tasks by consulting with and assisting others. Follow appropriate communication etiquette while working. Communication etiquette: do not use abusive language; use appropriate titles and terms of respect; do not eat or chew while talking (vice versa), use appropriate tone, pitch and language to 	Training kit (Trainer guide, Presentation)

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>convey politeness, assertiveness, care and professionalism, etc.</p> <ul style="list-style-type: none"> Apply active listening skills while interacting with others at work. Explain the importance of ethics and discipline for professional success. Describe common reasons for interpersonal conflict and ways of managing interpersonal conflict effectively. Explain the importance of developing effective working relationships for professional success. Display responsible and disciplined behaviors at the workplace. Disciplined behaviors: e.g. punctuality; completing tasks as per given time and standards; not gossiping and idling time; eliminating waste, honesty, etc. Escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict. 	
	<p>Total Duration</p> <p>Theory Duration 184:00</p> <p>Practical Duration 416:00</p>	<p>Unique Equipment Required: CNC Controlled Vertical Machining Center – 3 axis, allen keys, spanner, wrenches, mallet, pneumatic gun, cutting tools, scales, external micrometer, internal micrometer, depth micrometer, digital vernier, dial vernier, protractor, slip gauge, bore/hole gauge, thread gauge, plug gauge, radius/profile gauge, DTI, surface finish equipment, templates, Class A, B, C and D fire extinguishers, PPE, First aid kit with all contents.</p>	

Grand Total Course Duration: **600 Hours, 0 Minutes**

(This syllabus/ curriculum has been approved by [Capital Goods Skill Council](#))

Trainer Prerequisites for Job role: “CNC Setter cum Operator- Vertical Machining Centre” mapped to Qualification Pack: “CSC/Q0123 v1.0”

Sr. No.	Area	Details
1	Description	Setting of computer numerically controlled (CNC) vertical machining machines (VMC) in order to perform machining operations on metal components, as per specifications provided.
2	Personal Attributes	Basic communication, numerical and computational abilities. Openness to learning, ability to plan and organize own work and identify and solve problems in the course of working. Understanding the need to take initiative and manage self and work to improve efficiency and effectiveness
3	Minimum Educational Qualifications	Diploma /Degree in Mechanical Engineering
4a	Domain Certification	Certified for Job Role: “CNC Setter cum Operator-Vertical Machining Center” mapped to QP: “CSC/Q0123, v1.0”. Minimum accepted score is 80%
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “MEP/Q0102”. Minimum accepted as per respective SSC guidelines is 80%.
5	Experience	<ul style="list-style-type: none"> • 3-4 years of industry experience in the relevant field • 3-4 years of teaching experience

Annexure: Assessment Criteria

Criteria For Assessment Of Trainees

Job Role: CNC Setter cum Operator-Vertical Machining Centre

Qualification Pack: CSC/Q0123

Sector Skill Council: Capital Goods Skill Council

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS.
4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below).
5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on this criterion.
6. To pass the Qualification Pack, every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
7. In case of *unsuccessful completion*, the trainee may seek reassessment on the Qualification Pack.

Total Marks: 400		Compulsory	NOS	Marks Allocation	
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out of	Theory	Skills Practical
CSC/N0123 Set computer numerically controlled vertical machining center to perform a range of operations on metal components	PC1.comply with health and safety, environmental and other relevant regulations and guidelines at work	100	2	1	1
	PC2.adhere to procedures and guidelines for personal protective equipment (PPE) and other relevant safety regulations while performing VMC setting operations		3	1	2
	PC3.work following laid down procedures and instructions		2	1	1
	PC4.ensure work area is clean and safe from hazards		1	0	1
	PC5.ensure that all tools and equipment are in a safe and usable condition		1	0	1
	PC6.ensure that the components used are free from foreign objects, dirt or other contamination		1	0	1
	PC7.obtain job specification from a valid and approved source		1	0	1

PC8.read and establish job requirements from the job specification document accurately	4	2	2
PC9.report and rectify incorrect and inconsistent information in job specification documents as per organization procedures	1	0	1
PC10.prepare the work area for the VMC setting operations as per procedure or specification received	2	0	2
PC11.conduct a preliminary check of the readiness of the VMC machine	3	1	2
PC12.conduct a preliminary check of the readiness of the components and cutters	2	1	1
PC13.obtain appropriate cutting tools and hand tools and measuring tools as per job requirements	3	1	2
PC14.ensure that all measuring equipment is calibrated and approved for usage	2	0	2
PC15.extract and use information from engineering drawings and relate specifications in relation to work undertaken	3	1	2
PC16.use and extract information from reference charts, tables, graphs and standards	2	1	1
PC17.identify tool requirements from tooling layout and assess their suitability for producing various features and profiles	3	1	2
PC18.identify suitable work-holding or fixturing device as per the job requirement	3	1	2
PC19.ensure that the tools and fixtures are in usable condition (free from breakage, damage, calibration, etc.)	1	0	1
PC20.ensure the correct and latest part-program is uploaded onto the CNC system	2	0	2
PC21.pre-set the tooling using setting jigs/fixtures	3	1	2
PC22.where appropriate, seek any necessary instruction/training on the operation of the machine	1	0	1
PC23.mount and set the required work-holding devices, work-piece and cutting tools	3	1	2
PC24.check that the tools have a specific tool number in relation to the operating program	1	0	1
PC25.enter all relevant tool data to the operating program on the CNC	3	1	2
PC26.set tool datums, positions, lengths, offsets and radius compensation	4	1	3

PC27.mount the work-holding device/fixture onto the machine	4	1	3
PC28.set the work-holding device/fixture in relationship to the machine datum's and reference points	4	1	3
PC29.set the machine tool operating parameters (eg hydraulic pressure, clamping) as per the component requirements	5	2	3
PC30.place the machine into the correct operating mode, and access the program edit facility in order to enter tooling data,	4	1	3
PC31.conduct trial runs using single block run, dry run and feed and speed override controls	5	2	3
PC32.prove the program tool by tool in single block mode	4	2	2
PC33.perform the necessary checks before allowing the machine to operate in full program run mode	2	1	1
PC34.check and hand-over the machine after set-up to the machine operator along with relevant instructions and documentation	4	2	2
PC35.complete relevant documentation as per organizational procedure	1	0	1
PC36.handle the typical problems that can occur with the setting up of the tooling, work-holding devices and proving the program	2	1	1
PC37.switch the VMC machine on and off in normal and emergency situations	1	0	1
PC38.after use, return the old cutting tools, work-holding device, fixtures, instruments, drawings and verified tapes and programs back to store, safely and correctly	1	0	1
PC39.ensure that there is no damage to the tool/fixture while doing the prove-out	1	0	1
PC40.complete documentation during and post operations and submit as per organizational procedures	2	1	1
PC41.deal promptly and effectively with problems within the setter's control, and seek help and guidance from the relevant people, in case of problems that cannot be resolved	1	0	1
PC42.shut down the equipment to a safe condition on conclusion of the activities	1	0	1
PC43.leave the work area in a safe and tidy condition on completion of the setting activities	1	0	1

		Total	100	30	70
CSC/N0116 Perform a range of operations on metal components using computer numerical controlled vertical machining center	PC1.comply with health and safety, environmental and other relevant regulations and guidelines at work	100	2	1	1
	PC2.adhere to procedures and guidelines for personal protective equipment (PPE) and other relevant safety regulations while performing machining operations		3	1	2
	PC3.work following laid down procedures and instructions		1	0	1
	PC4.ensure work area is clean and safe from hazards		1	0	1
	PC5.ensure that all tools and equipment are in a safe and usable condition		1	0	1
	PC6.obtain job specification from a valid and approved source		1	0	1
	PC7.read and establish job requirements from the job specification document accurately		3	1	2
	PC8.report and rectify incorrect and inconsistent information in job specification documents as per organization procedures		2	0	2
	PC9.use and extract information from reference charts, tables, graphs and standards		3	1	2
	PC10.prepare the work area for the machining operations as per procedure or operational specification		3	1	2
	PC11.ensure that the components used are free from foreign objects, dirt or other contamination		1	0	1
	PC12.conduct a preliminary check of the readiness of the vertical machining centre		1	0	1
	PC13.obtain correct work pieces/raw materials and consumables as per job requirements		2	1	1
	PC14.obtain appropriate cutting tools, hand tools and measuring tools as per job requirements		3	1	2
	PC15.ensure that all measuring equipment is calibrated and approved for usage		2	0	2
	PC16.set work pieces as per job requirements using appropriate positioning and/or holding devices and support mechanisms		3	1	2
	PC17.where appropriate, seek any necessary instruction/training on the operation of the machine		2	0	2

PC18.check that the operating program is at the correct start point and the workpiece is clear of the machine spindle	2	0	2
PC19.switch the vertical machining center on and off in normal and emergency situations	1	0	1
PC20.load and unload component(s) using pre-determined fixtures or work holding devices as per work instructions	3	1	2
PC21.do trial run by taking back the tool offsets by a minimum amount keeping margin error rectification	2	0	2
PC22.measure the critical parameters of the machined component on the machine (without removing from the machine), after the trial run	3	1	2
PC23.correct the offsets based on the measurements by accessing program edit facility in order to enter tooling data	3	1	2
PC24.ensure accuracy in the critical parameters of the machined components by performing multiple trial runs and subsequent adjustment of offsets	3	1	2
PC25.measure the component after unloading to check for accuracy in the critical parameters as per job specifications	4	1	3
PC26.produce machined components that combine different operations and have a range of applicable features	4	2	2
PC27.follow the specified machining sequence and procedure as per job specifications	3	1	2
PC28.interpret in-built alarms and error codes of equipment and respond to the same as per operating manual/organizational guidelines	3	1	2
PC29.inspect as per frequency of inspection mentioned in the inspection plan (part of the job specifications)	3	1	2
PC30.record the measured values as per organizational procedure	2	1	1
PC31.observe for inconsistency in dimensions due to tool wear and correct the offsets accordingly	2	1	1
PC32.ensure that machine settings are adjusted as and when required, either by self or the setter, to maintain the required accuracy	4	2	2
PC33.identify when tools need resharpening/replacing	3	1	2

	PC34.remove worn out tool and replace with a suitable tool		2	0	2
	PC35.perform basic maintenance checks on the machine after operations		4	1	3
	PC36.keep finished components as well as raw material as per organizational procedure established		1	0	1
	PC37.produce components as per standards applicable to the process		4	1	3
	PC38.work to achieve production targets		2	0	2
	PC39.report conditions and seek appropriate assistance in a timely manner to address risk of failure to comply with necessary targets and specifications		2	0	2
	PC40.deal with finished components as per organizational guidelines		2	0	2
	PC41.return all tools and equipment to the correct location on completion of the machining activities		1	0	1
	PC42.update log book and complete necessary documentation during and post operations as per organizational procedures		1	0	1
	PC43.leave the work area in a safe and tidy condition on completion of job activities		2	0	2
		Total	100	25	75
CSC/N1335 Use basic health and safety practices at the workplace	PC1.use protective clothing/equipment for specific tasks and work conditions	100	4	1	3
	PC2.state the name and location of people responsible for health and safety in the workplace		3	1	2
	PC3.state the names and location of documents that refer to health and safety in the workplace		3	1	2
	PC4.identify job-site hazardous work and state possible causes of risk or accident in the workplace		5	2	3
	PC5.carry out safe working practices while dealing with hazards to ensure the safety of self and others		4	2	2
	PC6.state methods of accident prevention in the work environment of the job role		3	2	1
	PC7.state location of general health and safety equipment in the workplace		5	2	3
	PC8.inspect for faults, set up and safely use steps and ladders in general use		5	2	3
	PC9.work safely in and around trenches, elevated places and confined areas		5	2	3
	PC10.lift heavy objects safely using correct procedures		4	2	2

	PC11.apply good housekeeping practices at all times		5	2	3
	PC12.identify common hazard signs displayed in various areas		3	1	2
	PC13.retrieve and/or point out documents that refer to health and safety in the workplace		4	1	3
	PC14.use the various appropriate fire extinguishers on different types of fires correctly		3	1	2
	PC15.demonstrate rescue techniques applied during fire hazard		3	1	2
	PC16.demonstrate good housekeeping in order to prevent fire hazards		4	1	3
	PC17.demonstrate the correct use of a fire extinguisher		4	1	3
	PC18.demonstrate how to free a person from electrocution		4	1	3
	PC19.administer appropriate first aid to victims where required eg. in case of bleeding, burns, choking, electric shock, poisoning etc.		3	1	2
	PC20.demonstrate basic techniques of bandaging		3	1	2
	PC21.respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments		3	1	2
	PC22.perform and organize loss minimization or rescue activity during an accident in real or simulated environments		3	1	2
	PC23.administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases		3	1	2
	PC24.demonstrate the artificial respiration and the CPR Process		3	1	2
	PC25.participate in emergency procedures		4	1	3
	PC26.complete a written accident/incident report or dictate a report to another person, and send report to person responsible		3	1	2
	PC27.demonstrate correct method to move injured people and others during an emergency		4	2	2
		Total	100	36	64
CSC/N1336 Work effectively with others	PC1.accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	100	10	3	7

	PC2.accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt		10	3	7
	PC3.give information to others clearly, at a pace and in a manner that helps them to understand		10	3	7
	PC4.display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible		10	3	7
	PC5.consult with and assist others to maximize effectiveness and efficiency in carrying out tasks		10	3	7
	PC6.display appropriate communication etiquette while working		10	3	7
	PC7.display active listening skills while interacting with others at work		10	3	7
	PC8.use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism		10	3	7
	PC9.demonstrate responsible and disciplined behaviors at the workplace		10	3	7
	PC10.escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict		10	3	7
		Total	100	30	70