

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR CAPITAL GOODS 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





Contents

Introduction and Contacts	1
Qualifications Pack	2
Glossary of Key Terms	4
OS Units	6
Annexure: Nomenclature for QP & OS	28
Assessment Criteria	30

Introduction Qualifications Pack- Draughtsman - Mechanical

SECTOR/S: CAPITAL GOODS

SUB-SECTOR:

- 1. Machine Tools
- 2. Dies, Moulds and Press Tools
- 3. Plastics Manufacturing Machinery
- 4. Textile Manufacturing Machinery

OCCUPATION: Design

REFERENCE ID: CSC/Q0402

ALIGNED TO: NCO-2004/NIL

- 5. Process Plant Machinery
- 6. Electrical and Power Machinery
- 7. Light Engineering Goods

Brief Job Description: It involves select the appropriate equipment and drawingsoftware to use based on the type and complexity of the drawing functions tobe carried out and the use of a CAD system linked bills of material, filemanagement and associated customization of installed software including theuse of macros, menus and default settings.

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.



Job Details

Qualifications Pack Code	C	CSC/Q0402	
Job Role	Draughtsman - Mechanical [Applicable for National Scenarios]		
Credits	TBD	Version number	1.0
Sector	Capital Goods	Drafted on	14/04/2014
Sub-sector	 Machine Tools Dies, Moulds and Press Tools Plastics Manufacturing Machinery Textile Manufacturing Machinery Process Plant Machinery Electrical and Power Machinery Light Engineering Goods 	Last reviewed on	24/11/2017
Occupation	Design	Next review date	24/11/2021
NSQC Clearance on	19/05/2015		



Job Role	Draughtsman - Mechanical	
Role Description	Creation and modification of 2D mechanical engineering designusing CAD system. It also involves the detail drafting of component drawings for manufacturing, assembly, subassembly, installation, etc.	
NSQF level	4	
Minimum Educational Qualifications	10 th Standard pass, preferably	
Maximum Educational Qualifications	Not Applicable	
Prerequisite License or Training	Computer Aided Design System Training	
Minimum Job Entry Age	18 Years	
Experience	No Previous Experience Required	
Applicable National Occupational Standards (NOS)	 Compulsory: 1. <u>CSC/N0402 Make or modify 2D mechanical engineering drawings using CAD system</u> 2. <u>CSC/N1335 Use basic health and safety practices at the workplace</u> 3. <u>CSC/N1336 Work effectively with others</u> 	
Performance Criteria	As described in the relevant OS units	



Keywords /Terms	Description
Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whos components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics an interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions i an industry.
Jobrole	Job role defines a unique set of functions that together form a unique employmer opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria	Performance criteria are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack(QP)	QP comprises the set of OSs, together with the educational, training and othe criteria required to perform a job role. A QP is assigned a unique qualifications pace code.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive t specialization in a job role. There may be multiple electives within a QP for eac specialized job role. Trainees must select at least one elective for the successfu completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skill. There may be multiple options within a QP. It is not mandatory to select any of th options to complete a QP with Options.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted b an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be abl to do.
Description	Description gives a short summary of the unit content. This would be helpful t anyone searching on a database to verify that this is the appropriate OS they ar looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual mathematical have to deal with in carrying out the function which have a critical impact on quality of performance required.
Knowledge and Understanding	Knowledge and understanding are statements which together specify the technica generic, professional and organisational specific knowledge that an individual nee to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how operates, including the extent of operative knowledge managers have of the relevant areas of responsibility.
Technical	Technical knowledge is the specific knowledge needed to accomplish specific

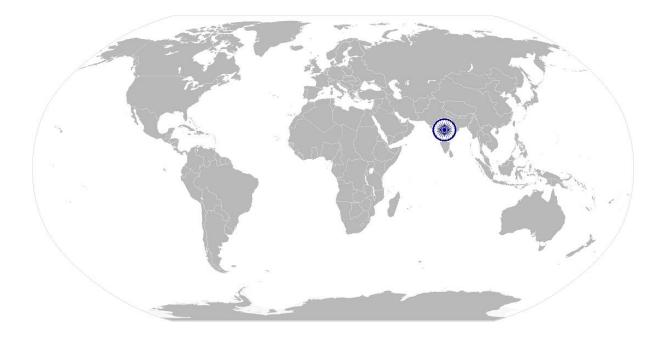


	Knowledge	designated responsibilities.
	Core Skills/ Generic Skills	Core skills or generic skills are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. In the context of the OS, these include communication related skills that are applicable to most job roles.
	Keywords/Terms	Description
	CNC	Computer Numerically Controlled
	CAD	Computer Aided Design
	2D	2 Dimensional
	3D	3 Dimensional
	CO ₂	Carbon Dioxide
	CPR	Cardiac Pulmonary Resuscitation
	ISO	International Organization For Standardization
	PPE	Personal Protective Equipment
	CD	Compact Disc
	DVD	Digital Video Disc Or Digital Versatile Disc





National Occupational Standard



Overview

This unit covers the creation and modification of 2D mechanical engineering design using CAD system. It also involves the detail drafting of drawings for manufacturing, assembly, sub-assembly, installation etc.





Unit Code	CSC/N0402
Unit Title (Task)	Make or modify 2D mechanical engineeringdrawings using CAD system
Description	This unit covers the skills and knowledge needed to set up and operate a computeraided drawing (CAD) system to produce detailed drawings for engineering activities, inaccordance with approved procedures.
Scope	This unit/task covers the following:
	Droparo for 2D mochanical orginopring drawings
	 Prepare for 2D mechanical engineering drawings Perform set-up activities
	 Make or modify 2D mechanical engineering drawings using CAD system
	i Make of modify 2D meenancal engineering drawings using CAD system
Performance Criteria(PC) w.r.t. the Scope
Element	Performance Criteria
Prepare for 2D	To be competent, the user/individual on the job must be able to:
mechanical	PC1. use appropriate sources to obtain the technical information relevant to the drawing to be created
engineering drawings	Technical information relevant to the drawing to be created: drawing brief;
	specifications (overall dimensions, materials, special procedures for
	manufacturing); drawing change or modification request; regulations;
	existing drawings/designs, sketches, notes from meetings/discussions;
	standardsreference documents (eg. limits and fits, tapping drill charts,
	contractionallowances)
	PC2. identify design features, as appropriate to the drawing being produced
	Design features: function, materials, clearance, operating environment,
	quality, aesthetics, interfaces, physical space; tolerances
	PC3. ensure that the data and information received is complete and correct
	PC4. establish the drawing requirements from the data and information received
	PC5. report and rectify incorrect and inconsistent information in job specification
	documents as per organization procedures
	PC6. access and use the correct drawing software
	PC7. select drafting equipment appropriate to the drawing method chosen
	PC8. check that all the equipment is correctly connected and in a safe and usable
	working condition
Daufamu aat uu	PC9. power up the equipment and activate the appropriate drawing software To be competent, the user/individual on the job must be able to:
•	PC10. customize system variables, menus and drawing defaults to produce the
activities	drawing to the appropriate scale
	PC11. develop macros as per approved procedures
	PC12. set up and check that all peripheral devices are connected and correctly
	Unit Title (Task) Description Scope Performance Criteria(PC Element Prepare for 2D





CSC/N0402 Make or n	nodify 2D mechanical engineeringdrawings using CAD system
	operating and interface with ERP if required is available
	Peripheral devices could be: keyboard, mouse, light pen, digitizer/tablet,
	scanner, printer, plotter, etc.
	PC13. set the drawing datum at a convenient point
	PC14. set up drawing parameters (eg. layers, line types, color, text styles) to
	company procedures or to suit the drawing produced
Make or modify 2D	To be competent, the user/individual on the job must be able to:
mechanical engineering drawings	PC15. interpret and produce mechanical drawings, using first angle orthographic projections, isometric/oblique projections, third angle orthographic
using CAD system	projections, sectional views
	PC16. apply drafting principles to produce various types of drawings that are
	consistent with applicable standards and procedures for use in various
	engineering activities
	Types of drawings: detail drawings, sub-assembly drawings, general
	arrangement drawings, installation drawings, exploded views
	Standards and procedures: organizational guidelines and procedures,
	recognized compliance agency/body standards, directives or codes of
	practice, CAD software standards/protocols, national and/or International
	standards or directives, customer standards and requirements, health,
	safety and environmental requirements
	Engineering Activities: production activities (such as processing of materials,
	fabrication, finishing, assembly, joining); installation activities (such as
	commissioning/decommissioning, site preparation, equipment installation);
	operational activities (such as movement of materials, workplace layouts,
	work-flow diagrams), maintenance activities (such as planned preventative
	maintenance, part/sub-assembly exchange)
	PC17. create a drawing template to the required standards, which includes all
	necessary detail (eg.) using various drawing tools
	Drawing template details: layers of drawings, scale, paper size, color setup,
	line types, dimension system, title, drawing number, date, text styles
	Drawing Tools: straight lines, hatching and shading on drawings, adding
	dimensions and text to drawings, producing layers of drawings, symbols and
	abbreviations, hidden detail, curved/contour lines, angled lines, circles or
	ellipses; parts lists, geometrical and dimensional tolerance, insertion of
	standard components, elevation, plane view, side view, sectional views,
	detail views
	PC18. use appropriate terminologies and techniques to create drawings, in the
	required formats, that are sufficiently and clearly detailed
	PC19. use keyboard command and pull down menus available in common CAD
	systems

NOS
National Occupational Standards



	Toury 2D mechanical engineeringurawings using CAD system
	PC20. use codes and other references that follow the required conventions
	PC21. draw temporary fasteners and rivets
	PC22. draw components details and assembly drawings
	PC23. draw piping layouts, gears and machine foundation or base
	PC24. draw working drawings of jigs and fixtures
	PC25. draw detailed drawings of dies, moulds and press tools
	PC26. dimension and label the drawing as per approved procedures
	PC27. create detailed views using various scales to meet job requirements
	PC28. ensure that drawings are checked and approved by the appropriate person
	PC29. produce hard copies of the finished drawings
	PC30. check that the drawing is correctly titled and referenced; sawing is correctly
	titled and referenced
	PC31. save the drawing to an appropriate storage medium (eg. hard drive,
	CD/DVD, external storage device)
	PC32. create a separate backup copy and place it in safe storage
	PC33_identify component parts list with part name, description of part, material
	specification or part number, quantities and other details to prepare bill of
	materials as per organizational guidelines
	PC34. deal promptly and effectively with poblems within control and seek help
	and guidance from the relevant people if you have problems that they
	cannotresolve
	PC35. ensure that changes are completed as required by organizational
	procedures
	PC36. shut down the CAD system to a safe condition on completion of the drawing
	activities
Knowledge and Underst	
A. Organizational	The user/individual on the job needs to know and understand: KA1. legislation, standards, policies, and procedures followed in the company
Context (Knowledge	relevant to own employment and performance conditions
of the company /	KA2. relevant health and safety requirements applicable in the work place
organization and its	KA3. importance of working in clean and safe environment
processes)	KA4. own job role and responsibilities and sources for information pertaining to
	employment terms, entitlements, job role and responsibilities
	KA5. reporting structure, inter-dependent functions, lines and procedures in the
	work area
	KA6. relevant people and their responsibilities within the work area
	KA7. escalation matrix and procedures for reporting work and employment
	relatedissues
	KA8. documentation and related procedures applicable in the context of
	employment and work





	KA9. importance and purpose of documentation in context of employment and
	work
B. Technical	The user/individual on the job needs to know and understand:
Knowledge	KB1. organizational procedures and information systems for retrieving and storing drawing data
	KB2. system variables that can be customized
	KB3. procedures and need for customizing identified system variables
	KB4. applicable drafting standards/procedures
	KB5. procedures and need for customizing menus and system defaults
	KB6. procedures and need for developing macros
	KB7. appropriate projection for the drawing purpose
	KB8. reasons for selecting the chosen projection
	KB9. reasons for including auxiliary views in drawings
	KB10. procedures for producing component, layout and/or assembly drawings
	KB11. drawing specifications
	KB12. common symbols used in drawings
	KB13. how and where to obtain the relevant sources and methods for obtaining
	any required technical information relevant to the drawing
	KB14. methods and procedures used to minimize the chances of infecting a
	computer with a virus
	KB15. procedure to follow in case there are corruptions or virus attacks
	KB16. practices that make systems vulnerable to corruption and damage
	KB17. basic set-up and operation of the computer system, and the peripheral
	devices that are used (eg. light pen, digitizer and tablet, printer or plotter, scanner)
	KB18. how to access the specific computer drawing software to be used, and the
	use of software manuals and related documents to aid operation of the
	relevant drawing system
	KB19. basic principles of engineering manufacturing operations that are used to produce the drawn item
	Basic principles of engineering manufacturing operations: casting and
	forging; fabrication; machining methods; joining processes; assembly and
	installation methods; limitations of the equipment/processes; kinematics
	principles relevant to manufacturing of machinery
	KB20. types of drawings that may be produced by the software
	KB20. types of drawings that may be produced by the software KB21. selection of standard components
	KB22. functionality of the component being drawn, and its interrelationship with
	other components and assemblies
	KB23. how to set up the viewing screen to show multiple views of the drawing to
	help with drawing creation





CSC/N0402 Make or n	nodify 2D mechanical engineeringdrawings using CAD system
	KB24. standards and conventions that are used for the drawings
	KB25. how to set up the drawing template parameters
	KB26. application and use of drawing tools
	KB27. how to access, recognize and use a wide range of standard components and
	symbol libraries from the CAD equipment
	KB28. need for document control
	KB29. how to save and store drawings
	KB30. need to create backup copies, and to file them in a separate and safe
	location
	KB31. how to produce hard copies of the drawings, and the advantages and
	disadvantages of printers and plotters
Skills (S)	
A. Core Skills/	Reading Skills
Generic Skills	The user/individual on the job needs to know and understand how to:
	SA1. read and interpret information correctly from various job specification
	documents, health and safety instructions, memos, etc. applicable to the job
	in English and/or local language
	Writing Skills
	The user/individual on the job needs to know and understand how to:
	SA2. fill up appropriate technical forms, process charts, activity logs as per
	organizational format in English and/or local language
	SA3. undertake numerical operations, and calculations/ formulae
	Numerical computations: addition, subtraction, multiplication,
	division, fractions and decimals, percentages and proportions, simple
	ratios and averages
	SA4. identify and draw various basic, compound and solid shapes as per
	dimensions given
	Basic shapes: square, rectangle, triangle, circle
	Compound shapes: involving squares, rectangles, triangles, circles, semi-circles, quadrants of a circle
	Solid shapes: cube, rectangular prism, cylinder
	SA5. use appropriate units and number systems to express degree of accuracy
	Units and number systems representing degree of accuracy: decimals places,
	significant figures, fractions as a decimal quantity
	SA6. interpret and express tolerance in terms of limits on dimensions
	SA7. calculation of the value of angles in a triangle
	Angles in a triangle: right-angled, isosceles, equilateral
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to:





	SA8. convey and share technical information clearly using appropriate language
	SA9. check and clarify task-related information
	SA10. liaise with appropriate authorities using correct protocol
	SA11. communicate with people in respectful form and manner in line with
	organizational protocol
B. Professional Skills	Decision Making
	NA
	Plan and Organize
	The user/individual on the job needs to know and understand how to:
	SB1. plan, prioritize and sequence work operations as per job requirements
	SB2. organize and analyze information relevant to work
	SB3. basic concepts of shop-floor work productivity including waste reduction,
	efficient material usage and optimization of time
	CustomerCentricity
	The user/individual on the job needs to know and understand how to:
	SB4. exercise restraint while expressing dissent and during conflict situations
	SB5. avoid and manage distractions to be disciplined at work
	SB6. manage own time for achieving better results
	SB7. work in a team in order to achieve better results
	SB8. identify and clarify work roles within a team
	SB9. communicate and cooperate with others in the team for better results
	SB10. seek assistance from fellow team members
	Problem Solving
	The user/individual on the job needs to know and understand how to:
	SB11. identify problems with work planning, procedures, output and behavior and
	their implications
	SB12. prioritize and plan for problem solving
	SB13. communicate problems appropriately to others
	SB14. identify sources of information and support for problem solving
	SB15. seek assistance and support from other sources to solve problems
	SB16. identify effective resolution techniques
	SB17. select and apply resolution techniques
	SB18. seek evidence for problem resolution
	Analytical Thinking
	The user/individual on the job needs to know and understand how to:
	SB19. undertake and express new ideas and initiatives to others
	SB20. modify work plan to overcome unforeseen difficulties or developments that
	occur as work progresses



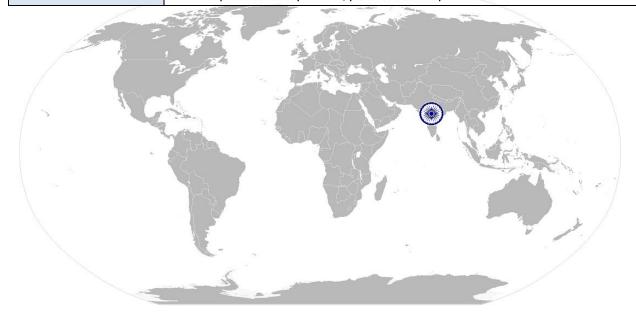


SB21. participate in improvement procedures including process, quality and internal/external customer/supplier relationships
 SB22. enhance one's competencies in new and different situations and contexts to achievemore

Critical Thinking

The user/individual on the job needs to know and understand how to:

- SB23. participate in on-the-job and other learning, training and development interventions and assessments
- SB24. clarify task related information with appropriate personnel or technical adviser
- SB25. seek to improve and modify own work practices
- SB26. maintain current knowledge of application standards, legislation, codes of practice and product/process developments







NOS Version Control

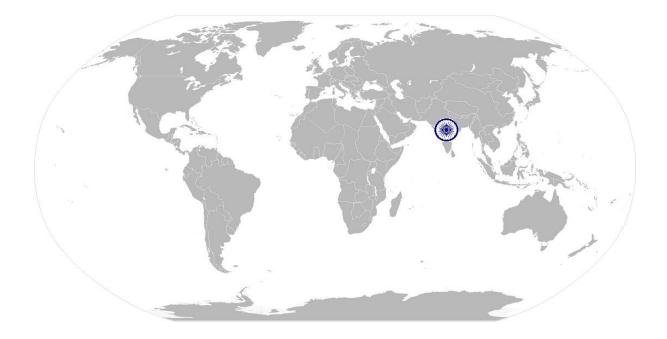
NOS Code		CSC/Q0402	
Credits	TBD	Version number	1.0
Industry	Capital Goods	Drafted on	14/04/2014
Industry Sub-sector	 Machine Tools Dies, Moulds and Press Tools Plastics Manufacturing Machinery Textile Manufacturing Machinery Process Plant Machinery Electrical and Power Machinery Electrical and Power Machinery Light Engineering Goods 	Last reviewed on	24/11/2017
Occupation	Design	Next review date	24/11/2021





CSC/N1335 Use basic health and safety practices at the workplace

National Occupational Standard



Overview

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





CSC/N1335 Use basic health and safety practices at the workplace

Unit Code	CSC/N1335	
Unit Title (Task)	Use basic health and safety practices at the workplace	
Description	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.	
Only Three (Task) Description Scope Performance Criteri Element Health and safety	 This unit/task covers the following: Health and safety Fire safety Emergencies, rescue and first-aid procedure 	
Performance Criteri	a(PC) w.r.t. the Scope	
Element	Performance Criteria	
Health and safety	 To be competent, the user/individual on the job must be able to: PC1. use protective clothing/equipment for specific tasks and work conditions Protective clothing: leather or asbestos gloves, flame proof aprons, flame proof overalls buttoned to neck, cutters (without folds), trousers, reinforced footwear, helmets/hard hats, cap and shoulder covers, ear defenders/plugs, safety boots, knee pads, particle masks, glasses/goggles/visors Equipment: hand shields, machine guards, residual current devices, shields, dust sheets, respirator PC2. state the name and location of people responsible for health and safety in the workplace PC3. state the names and location of documents that refer to health and safety in the workplace PC4. identify job-site hazardous work and state possible causes of risk or accident in the workplace PC4. identify job-site hazardous work and state possible causes of risk or accident in the workplace Hazards: sharp edged and heavy tools; heated metals; oxyfuel and gas cylinders; welding radiation; hazardous substances(chemicals, gas, oxy-fuel, fumes, dust, etc.); physical hazards(working at heights, large and heavy objects and machines, sharp and piercing objects, tolls 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.) 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 	

National Occupational Standards



CSC/N1335	Use basic health and safety practices at the workplace
	illness)
	PC5. carry out safe working practices while dealing with hazards to ensure the
	safety of self and others
	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.
	PC6. state methods of accident prevention in the work environment of the job role
	Methods of accident prevention: training in health and safety procedures;
	using health and safety procedures; use of equipment and working practices
	(such as safe carrying procedures); safety notices, advice; instruction from
	colleagues and supervisors
	PC7. state location of general health an sofety equipment in the workplace
	General health and safety equipment: fire extinguishers; first aid equipment;
	safety instruments and clothing; safety installations(eg fire exits, exhaust
	fans)
	PC8. inspect for faults, set up and safely use steps and ladders in general use
	Ladder faults: corrosion of metal components, deterioration, splits and cracks
	timber components, imbalance, loose rungs, missing/ unfixed nuts or bolts,
	etc.
	Ladders set up: firm/level base, clip/lash down, leaning at the correct angle,
	etc.
	PC10. lift heavy objects safely using correct procedures
	PC11. apply good housekeeping practices at all times
	Good housekeeping practices: clean/tidy work areas, removal/disposal of
	waste products, protect surfaces
	PC12. identify common hazard signs displayed in various areas
	Various areas: on chemical containers; equipment; packages; inside buildings;
	in open areas and public spaces, etc.
	PC13. retrieve and/or point out documents that refer to health and safety in the
	workplace
	Documents: fire notices, accident reports, safety instructions for equipment
	and procedures, company notices and documents, legal documents (eg





To be competent, the user/individual on the job must be able to: PC14. use the various appropriate fire extinguishers on different types of fires
correctly Types of fires: Class A: eg. 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 eg. 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) PC15. demonstrate rescue techniques applied during fire hazard PC16. demonstrate good housekeeping in order to prevent fire hazards
PC17, demonstrate the correct use of a fire extinguisher
 To be competent, the user/individual on the job must be able to: PC18. demonstrate how to free a person from electrocution PC19. administer appropriate first aid to victims where required eg. in case of bleeding, burns, choking, electric speck, poisoning etc. PC20. demonstrate basic techniques of bandaging PC21. respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments PC22. perform and organize loss minimization or rescue activity during an accident in real or simulated environments 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 PC24. demonstrate the artificial respiration and the CPR Process PC25. participate in emergency procedures Emergency procedures: raising alarm, safe/efficient, evacuation, correct means of escape, correct assembly point, roll call, correct return to work PC26. complete a written 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 PC27. demonstrate correct method to move injured people and others during an





CSC/N1335 Use	basic health and safety practices at the workplace		
A. Organizational	The user/individual on the job needs to know and understand:		
Context	KA1. names (and job titles if applicable), and where to find, all the people		
(Knowledge of the	responsible for health and safety in a workplace		
company /	KA2. names and location of documents that refer to health and safety in the		
organization and	workplace		
its processes)			
B. Technical	The user/individual on the job needs to know and understand:		
Knowledge	KB1. meaning of "hazards" and "risks"		
U U	KB2. health and safety hazards commonly present in the work environment and		
	related precautions		
	KB3. possible causes of risk, hazard or accident in the workplace and why risk		
	and/or accidents are possible		
	KB4. possible causes of risk and accident		
	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)		
	KB5. methods of accident prevention		
	Methods of accident prevention: training in health and safety procedures;		
	using health and safety procedures; use of equipment and working practices		
	(such as safe carrying procedures); safety notices, advice; instruction from		
	colleagues and supervisors		
	KB6. safe working practices when working with tools and machines		
	KB7. safe working practices while working at various hazardous sites		
	KB9. various dangers associated with the use of electrical equipment		
	KB10. preventative and remedial actions to be taken in the case of exposure to toxic		
	materials		
	Exposure: ingested, contact with skin, inhaled		
	Preventative action: ventilation, masks, protective clothing/ equipment);		
	Remedial action: immediate first aid, report to supervisor		
	Toxic materials: solvents, flux, lead		
	KB11. importance of using protective clothing/equipment while working		
	KB12. precautionary activities to prevent the fire accident		
	KB13. various causes of fire		
	Causes of fires: heating of metal; spontaneous ignition; sparking; electrical		
	heating; loose fires (smoking, welding, etc.); chemical fires; etc.		
	KB14. techniques of using the different fire extinguishers		
	KB15. different methods of extinguishing fire		
	KB16. different materials used for extinguishing fire		

000011005 ~ . . _ . . .





CSC/N1335 Use	basic health and safety practices at the workplace	
	Materials: sand, water, foam, CO ₂ , dry powder	
	KB17. rescue techniques applied during a fire hazard	
	KB18. various types of safety signs and what they mean	
	KB19. appropriate basic first aid treatment relevant to the condition eg. shock,	
	electrical shock, bleeding, breaks to bones, minor burns, resuscitation,	
	poisoning, eye injuries	
	KB20. content of written accident report	
	KB21. potential injuries and ill health associated with incorrect manual handing	
	KB22. safe lifting and carrying practices	
	KB23. personal safety, health and dignity issues relating to the movement of a	
	person by others	
	KB24. potential impact to a person who is moved incorrectly	
Skills (S)		
A. Core Skills/	Reading Skills	
Generic Skills	The user/ individual on the job needs to know and understand how to:	
	SA1. read and comprehend basic content to read labels, charts, signages	
	SA2. read and comprehend basic English to read manuals of operations	
	SA3. read an accident/incident report in losal language or English	
	Writing Skills	
	The user/individual on the job needs to know and understand how to: SA4. write an accident/incident report in local language or English	
	Oral Communication (Listening and Speaking skills)	
	The user/individual on the job needs to know and understand how to:	
	SA5. question coworkers appropriately in order to clarify instructions and other	
	issues	
D. Drofossional Chille	SA6. give clear instructions to coworkers, subordinates others	
B. Professional Skills	Decision Making	
	The user/individual on the job needs to know and understand how to:	
	SB1. make appropriate decisions pertaining to the concerned area of work with	
	respect to intended work objective, span of authority, responsibility, laid	
	down procedure and guidelines	
	Plan and Organize	
	The user/individual on the job needs to know and understand how to:	
	SB2. plan and organize their own work schedule, work area, tools, equipment and	
	materials to maintain decorum and for improved productivity	
	CustomerCentricity	
	CustomerCentricity	
	CustomerCentricity The user/individual on the job needs to know and understand how to:	

NOS
National Occupational Standards



CSC/N1335	Use basic health and safety practices at the workplace
	SB4. follow appropriate protocols for communication based on situation, hierarchy,
	organizational culture and practice
	SB5. ask for, provide and receive required assistance where possible to ensure
	achievement of work related objectives
	SB6. thank coworkers for any assistance received
	SB7. offer appropriate respect based on mutuality and respect for fellow
	workmanship and authority
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB8. think through the problem, evaluate the possible solution(s) and suggest an
	optimum /best possible solution(s)
	SB9. identify immediate or temporary solutions to resolve delays
	—SB10. identify sources of support that can be availed of for problem solving for
	various kind of problems
	SB11. seek appropriate assistance from other sources to resolve problems
	SB12. report problems that you cannot resolve to appropriate authority
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB13. identify cause and effect relations in their area of work
	SB14. use cause and effect relations to anticipate potential problems and their solution
Critical Thinking	
	NA





CSC/N1335 Use basic health and safety practices at the workplace

NOS Version Control

NOS Code	CSC/N1335		
Credits	TBD	Version number	1.0
Industry	Capital Goods	Drafted on	14/04/2014
Industry Sub-sector	 Machine Tools Dies, Moulds and Press Tools Plastics Manufacturing Machinery Textile Manufacturing Machinery Process Plant Machinery Electrical and Power Machinery Electrical and Power Machinery Light Engineering Goods 	Last reviewed on	24/11/2017
Occupation	Design	Next review date	- 24/11/2021





CSC/N1336

Work effectively with others

National Occupational Standard



Overview

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





CSC/N1336

Work effectively with others

Unit Code	CSC/N1336	
Unit Title (Task)	Work effectively with others This unit covers basic etiquette and competencies that a candidate is required to possess and demonstrate in their behavior and interactions with others at the workplace. These cover areas such as communication etiquette, discipline, listening etc. This unit/task covers the following: • Work effectively with others	
Description		
Scope		
Performance Criteria(P) w.r.t. the Scope	
Element	Performance Criteria	
Work effectively with others	 To be competent, the user/individual on the job must be able to: PC1. accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required PC2. accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt PC3. give information to others clearly, at a pace and in a manner that helps them to understand PC4. display helpful behavior by assisting others in performing tasks in a positive manner, where required and possible PC5. consult with and assist others to maximize effectiveness and efficiency in carrying out tasks PC6. display 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)etc. 	
	 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. demonstrate 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.	
	PC10. escalate grievances and problems to appropriate authority as per procedure to resolve them and avoid conflict	
Knowledge and Unders	standing (K)	
A. Organizational Context (Knowledge of the company / organization and	 The user/individual on the job needs to know and understand: KA1. legislation, 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 	





CSC/N1336	Work effectively with others
its processes)	KA3. relevant people and their responsibilities within the work area
	KA4. escalation matrix and procedures for reporting work and employment related
	issues
B. Technical	The user/individual on the job needs to know and understand:
Knowledge	KB1. various categories of people that one is required to communicate and co-
	ordinate with in the organization
	KB2. importance of effective communication in the workplace
	KB3. importance of teamwork in organizational and individual success
	KB4. various components of effective communication
	KB5. key elements of active listening
	KB6. value and importance of active listening and assertive communication
	KB7. barriers to effective communication
	KB8. importance of tone and pitch in effective communication
	KB9. importance of avoiding casual expletives and unpleasant terms while
	communicating professional circles
	KB10. how poor communication practices can disturb people, environment and
	cause problems for the employee, the employer and the customer
	KB11. importance of ethics for professional success
	KB12. importance of discipline for profestorial success
	KB13. what constitutes disciplined behavior for a working professional
	KB14. common reasons for interpersonal conflict
	KB15. importance of developing effective working relationships for professional
	success
	KB16. expressing and addressing grievances appropriately and effectively
	KB17. importance and ways of managing interpersonal conflict effectively
Skills (S)	
A. Core Skills/	ReadingSkills
Generic Skills	The user/ individual on the job needs to know and understand how to:
	SA1. read basic terms and terminologies to accurately interpret work related
	documents, labels, supervisor instructions in the local language
	SA2. read and interpret accurate information from various relevant work
	instructions and records
	Writing Skills
	The user/ individual on the job needs to know and understand how to:
	SA3. write clear and legible notes to self, colleagues and seniors to pass messages,
	keep records, prepare to-do lists, take down instructions
	SA4. write basic numbers, quantities and work related terminology for operational
	requirements in the local language
	Oral Communication (Listening and Speaking skills)





CSC/N1336	Work effectively with others	
	The user/individual on the job needs to know and understand how to:	
	SA5. interact with the supervisor appropriately (correct protocol and manner of	
	speaking) in order to understand the basic requirements of the product,	
	production plans and other associated requirements	
	SA6. give clear instructions to co-workers about the type of output required and	
	answer queries	
	SA7. display active listening skills while interacting with co-workers and other in	
	the workplace	
B. Professional Skills	Decision Making	
	NA	
	Plan and organize	
	The user/individual on the job needs to know and understand how to:	
	SB1. use appropriate planning to maintain a smooth relationship with fellow team	
	members	
	SB2. take steps within one's limits of authority to initiate modification in plan if the	
	circumstances require it	
	Customer centricity	
	The user/individual on the job needs to know and understand how to:	
	SB3. check that work meets customer requirements	
	SB4. deliver consistent and reliable service to internal and external customers	
	Problem Solving	
	The user/individual on the job needs to know and understand how to:	
	SB5. work with co-workers and supervisor to resolve any issues that threaten	
	disruption, increase risk, cause delays or under-achievement of quality and	
	targets as per the planned schedule	
	Analytical Thinking	
	NA	
	Critical Thinking	
	NA	
	1	





CSC/N1336

Work effectively with others

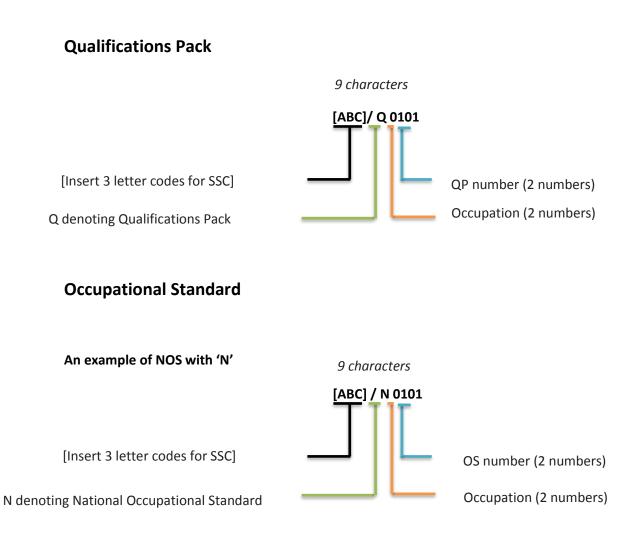
NOS Version Control

NOS Code		CSC/N1336		
Credits	TBD	Version number	1.0	
Industry	Capital Goods	Drafted on	14/04/2014	
Industry Sub-sector	 Machine Tools Dies, Moulds and Press Tools Plastics Manufacturing Machinery Textile Manufacturing Machinery Process Plant Machinery Electrical and Power Machinery Electrical and Power Machinery Light Engineering Goods 	Last reviewed on	24/11/2017	
Occupation	Design	Next review date	24/11/2021	



Annexure

Nomenclature for QP and NOS





The following acronyms/ codes have been used in the nomenclature above:

Sub-sector	Range of Occupation numbers
Machine Tools	01-13
Dies, Moulds and Press Tools	01-13
Plastic Manufacturing Machinery	01-13
Textile Manufacturing Machinery	01-13
Process Plant Machinery	01-13
Electrical and Power Machinery	01-13
Light Engineering Goods	01-13

Sequence	Description	Example
Three letters	Capital Goods	CSC
Slash	/	/
Next letter	Whether Q P or N OS	Ν
Next two numbers	Occupation code	01
Next two numbers	OS number	01



Criteria For Assessment Of Trainees

<u>Job Role</u>: Draughtsman - Mechanical <u>Qualification Pack</u>: CSC/Q0402 <u>Sector Skill Council</u>: 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 center (as per assessment criteria below).

5. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center 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.

Compulsory NOS Total Marks: 300			Marks Allocation		
Assessment outcomes	Assessment Criteria for outcomes	Total Marks	Out of	Theory	Skills Practical
CSC/N0402 Make or modify 2D mechanical	PC1. use appropriate sources to obtain the technical information relevant to the drawing to be created		2	0	2
engineering drawings using	PC2. identify design features, as appropriate to the drawing being produced		4	2	2
CAD system	PC3. ensure that the data and information received is complete and correct	100	2	0	2
	PC4. establish the drawing requirements from the data and information received		3	1	2
	PC5. report and rectify incorrect and inconsistent information in job specification documents as per organization procedures		3	1	2
	PC6. access and use the correct drawing software		2	1	1
	PC7. select drafting equipment appropriate to the drawing method chosen		3	1	2
	PC8. check that all the equipment is correctly connected and in a safe and usable working condition		1	0	1



PC9. power up the equipment and activate the appropriate drawing software	1	0	1
PC10. customize system variables, menus and drawing defaults to produce the drawing to the appropriate scale	3	1	2
PC11. develop macros as per approved procedures	4	2	2
PC12. set up and check that all peripheral devices are connected and correctly operating and interface with ERP if required is available	2	0	2
PC13. set the drawing datum at a convenient point	2	0	2
PC14. set up drawing parameters (eg. layers, line types, color, text styles) to company procedures or to suit the drawing produced	3	1	2
PC15. interpret and produce mechanical drawings, using first angle orthographic projections, isometric/oblique projections, third angle orthographic projections, sectional views	5	2	3
PC16. apply drafting principles to produce various types of drawings that are consistent with applicable standards and procedures for use in various engineering activities	5	2	3
PC17. create a drawing template to the required standards, which includes all necessary detail (eg.) using various drawing tools	5	2	3
PC18. use appropriate terminologies and techniques to create drawings, in the required formats, that are sufficiently and clearly detailed	4	2	2
PC19. use keyboard command and pull down menus available in common CAD systems	2	1	1
PC20. use codes and other references that follow the required conventions	3	1	2
PC21. draw temporary fasteners and rivets	3	1	2
PC22. draw components details and assembly drawings	4	1	3
PC23. draw piping layouts, gears and machine foundation or base	4	1	3
PC24. draw working drawings of jigs and fixtures	4	1	3
PC25. draw detailed drawings of dies, moulds and press tools	4	1	3
PC26. dimension and label the drawing as per approved procedures	4	1	3



		1	1		
	PC27. create detailed views using various scales to meet job requirements		3	1	2
	PC28. ensure that drawings are checked and approved by the appropriate person		1	0	1
	PC29. produce hard copies of the finished drawings		1	0	1
	PC30. check that the drawing is correctly titled and referenced; sawing is correctly titled and referenced		2	0	2
	PC31. save the drawing to an appropriate storage medium (eg. hard drive, CD/DVD, external storage device)		1	0	1
	PC32. create a separate backup copy and place it in safe storage		1	0	1
	PC33. identify component parts list with part name, description of part, material specification or part number, quantities and other details to prepare bill of materials as per organizational guidelines		4	2	2
	PC34. deal promptly and effectively with problems within control and seek help and guidance from the relevant people if you have problems that they cannot resolve		2	0	2
	PC35. ensure that changes are completed as required by organizational procedures		2	1	1
	PC36. shut down the CAD system to a safe condition on completion of the drawing activities		1	0	1
		Total			
CSC/N1335 Use basic health and	PC1.use protective clothing/equipment for specific tasks and work conditions		5	2	3
safety practices at the workplace	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	100	5	2	3
	PC5.carry out safe working practices while dealing with hazards to ensure the safety of self and others	100	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
					27



	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		4	1	3
	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		4	1	3
	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	2	1
	PC25.participate in emergency procedures	1	2	1	1
	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		3	1	2
		Total	100	37	63
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
effectively with	dictate a report to another person, and send report to person responsible PC27.demonstrate correct method to move injured people and others during an emergency PC1.accurately receive information and instructions from the supervisor and fellow workers, getting clarification		3	1 37	6



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