

## QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR AUTOMOTIVE 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



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## Introduction

### Qualification Pack- Draughtsman

**SECTOR:** AUTOMOTIVE

**SUB-SECTOR:** R&D

**OCCUPATION:** PRODUCT DESIGN

**JOB ROLE:** DRAUGHTSMAN

**REFERENCE ID:** ASC/Q8201

**ALIGNED TO:** NCO-2004/3118.40

**Draughtsman:** The role holder may also be called a Draughtsperson. This role entails understanding the product requirement from the internal customer and creating a graphical model in 2D and 3D to enable the manufacturer to create the product.

**Brief Job Description:** The Draughtsman has to interpret the customer /design team requirement of the product and translate the same into 3D and 2D drawings through various computer aided design techniques to create a graphical model on exact specifications for the product under design.

**Personal Attributes:** The individual should be detail oriented, observant; should be good in computing skills and analysis. The individual should be able to visualize the final output, should be creative in designing components and parts and be able to communicate well with the customers ( internal and external). The role holder should have a good vision and should not be colour blind

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Job Details	<b>Qualifications Pack Code</b>	ASC/Q8201		
	<b>Job Role</b>	Draughtsman		
	<b>Credits(NSQF)</b>	TBD	<b>Version number</b>	1.0
	<b>Industry</b>	Automotive	<b>Drafted on</b>	10/1/2014
	<b>Sub-sector</b>	R&D	<b>Last reviewed on</b>	20/1/2014
	<b>Occupation</b>	Product Design	<b>Next review date</b>	Under revision date of revised version 31-Dec-15
	<b>NSQC Clearance on</b>	05/08/15		

Job Role	Draughtsman
<b>Role Description</b>	Responsible for designing components and fixtures using manual and computer aided drafting techniques
<b>NSQF level</b>	4
<b>Minimum Educational Qualifications</b>	ITI – Mechanical
<b>Maximum Educational Qualifications</b>	Diploma in Mechanical Engineering with certification in CAD/CAM
<b>Training</b> (Suggested but not mandatory)	<ul style="list-style-type: none"> <li>• CAD/CAM Software modules</li> <li>• Measurement systems</li> <li>• Problem solving skills</li> <li>• Quality Management</li> <li>• 5S and Safety</li> </ul>
<b>Minimum Job Entry Age</b>	<p>1 ASDC recommends that candidates should seek full employment not before attaining an age of 18 years.</p> <p>2 However, as per Factories Act1948 :</p> <ul style="list-style-type: none"> <li>- No one can be employed before attaining the age of 15</li> <li>- A person between the age of 15 – 18 (both inclusive) could be employed only with employers who follow safety and security systems &amp; processes and also that the employee in this bracket will be working under supervision.</li> </ul> <p>3 Please note that under the Factories Act 1948, different States may have slightly varying provision which need to be adhered to.</p>
<b>Experience</b>	2 years in design of components and fixtures
<b>Occupational Standards (OS)</b>	<ol style="list-style-type: none"> <li>1. <a href="#">ASC/N8201:Understand processes and equipment requirement for designing and graphical modelling</a></li> <li>2. <a href="#">ASC/N8202: Perform the component/ aggregate designing operation</a></li> <li>3. <a href="#">ASC/N0006A: Maintain a safe and healthy working environment</a></li> </ol>

	4. <a href="#">ASC/N0021: Maintaining 5S at the work premises</a> <b>Optional:</b> N.A.
<b>Performance Criteria</b>	As described in the relevant NOS 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 NOS, these include communication related skills that are applicable to most job roles.
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 NOS.
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.
National Occupational Standards (NOS)	NOS 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.
Organisational Context	Organisational 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 NOS unit, which can be denoted with an 'N'
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>
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
OEM	Original Equipment Manufacturer
OS	Occupational Standard(s)
QP	Qualifications Pack

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# National Occupational Standards



## Overview

This unit is about understanding the job requirement and hence understand the activities & equipment associated with the process to complete the task.

ASC/N8201

**Understand processes and equipment requirement for designing and graphical modelling**

National Occupational Standard	<b>Unit Code</b>	ASC/N8201
	<b>Unit Title (Task)</b>	<b>Understand processes and equipment requirement for designing and graphical modelling</b>
	<b>Description</b>	This NOS unit is about understanding the job requirement and what processes need to be executed, what equipment's will be used for the job and what is the required output considering the standards specified
	<b>Scope</b>	The draughtsman will be responsible for <ul style="list-style-type: none"> <li>• understanding the process, process parameters and equipment requirements</li> <li>• escalations of any queries regarding the job</li> </ul> The job holder will various designing methods using CAD/ CAM and other software for designing the components. The role holder will interact with the product design team
	<b>Performance Criteria (PC) w.r.t. the Scope</b>	
	<b>Element</b>	<b>Performance Criteria</b>
	<b>Understand the designing requirements, designing equipment and parameters to be set for the process</b>	PC1. Ensure correct understanding of the requirements in terms of design and utility of the component PC2. Understand the methodology and process to be adopted for completing the work order through discussions with the supervisor and reading the process manuals/ Work Instructions/Standard Operating Procedures PC3. Visualize the end product required by the customer and prepare a rough sketch of the end product PC4. Correctly understand the use of various software used like CATIA, Auto –CAD, Unigraphics etc. for creating the designs and models as specified in the Work Order/ Customer PC5. Understand 5 S related to the work station/ filing of the drawings and implement 5S for workstation upkeep and upkeep of records pertaining to drawings and sketches. PC6. Understand internal systems of design records (Manual /PLM ), Change notes (ECN)
	<b>Escalations of queries on the given job</b>	PC7. Refer the queries to a competent internal specialist if they cannot be resolved by the designer on own PC8. Obtain help or advice from specialist if the problem is outside his/her area of competence or experience PC9. Confirm self-understanding with the specialist holding discussions so that all doubts & queries can be resolved before the actual process execution
	<b>Knowledge and Understanding (K) w.r.t. the scope</b>	
	<b>Element</b>	<b>Knowledge and Understanding</b>
<b>A. Organizational Context</b> (Knowledge of the company /	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> <li>KA1. relevant standards and procedures followed in the company</li> <li>KA2. different types of products manufactured by the company</li> <li>KA3. policies around Quality, Safety and 5 S</li> <li>KA4. Draughting Standards &amp; Techniques – e.g. ANSI series IS/ ISO</li> </ul>	

ASC/N8201

### Understand processes and equipment requirement for designing and graphical modelling

organization and its processes)	<p>KA5. design review process for suitability for assembly / manufacturing</p> <p>KA6. change management procedures related to drawing changes and review</p>
<b>B. Technical Knowledge</b>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. the method of reading and interpreting drawings and sketches</p> <p>KB2. how to visualize the final product output and conduct quality verification tests</p> <p>KB3. different types of designing processes and associated software like CATIA, Unigraphics</p> <p>KB4. 3D and 2D drawings and modelling techniques</p> <p>KB5. different type of views generated in engineering drawings</p> <p>KB6. different production and manufacturing related processes and equipment</p>
<b>Skills (S) [Optional]</b>	
<b>Element</b>	<b>Skills</b>
<b>Element A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. document information</p> <p>SA2. note down observations (if any) related to the design aspect</p>
	<b>Reading Skills</b>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA3. read and interpret technical customer drawings</p> <p>SA4. read software manuals and process documents to understand the software and processes better</p> <p>SA5. read internal information documents sent by internal teams</p>
	<b>Oral Communication (Listening and Speaking skills)</b>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA6. discuss task lists, schedules and activities with the supervisor</p> <p>SA7. effectively communicate with the team members</p> <p>SA8. question the customer in order to understand the nature of the problem and to clarify queries</p> <p>SA9. attentively listen with full attention and comprehend the information given by the speaker</p>
<b>B. Professional Skills</b>	<b>Plan and Organize</b>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. plan and organize the work order and jobs received from the customer</p> <p>SB2. organize all process/ equipment manuals so that sorting/ accessing information is easy</p>
	<b>Judgment and Critical Thinking</b>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB3. use common sense and make judgments during day to day basis</p> <p>SB4. use reasoning skills to identify and resolve basic problems</p> <p>SB5. use intuition and keen observation skills to detect any potential problems which could arise during operations</p>

ASC/N8201

### Understand processes and equipment requirement for designing and graphical modelling

	<b>Desire to learn and take initiatives</b>
	The user/individual on the job needs to know and understand how to: 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 timelines and quality norms
	<b>Problem Solving and Decision making</b>
	The user/individual on the job needs to know and understand how to: SB9. detect problems in day to day tasks SB10. support supervisor in using specific problem solving techniques and detailing out the problems SB11. discuss possible solution with the supervisor for problem solving

### NOS Version Control

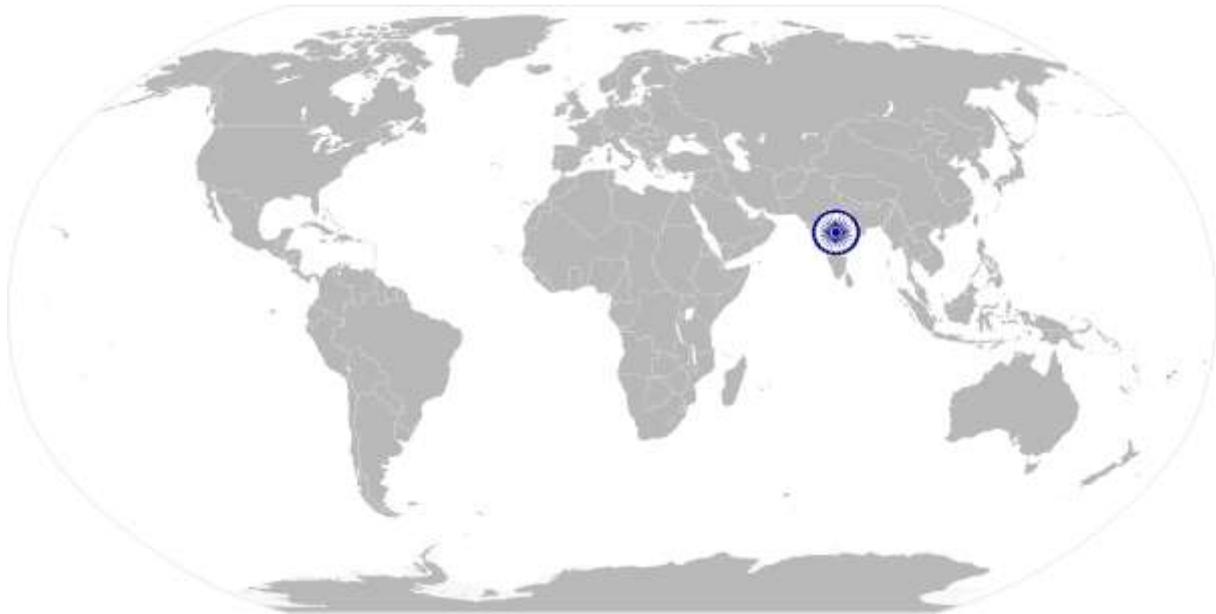
<b>NOS Code</b>	ASC/N8201		
<b>Credits(NSQF)</b>	TBD	<b>Version number</b>	1.0
<b>Industry</b>	Automotive	<b>Drafted on</b>	10/1/2014
<b>Industry Sub-sector</b>	R&D	<b>Last reviewed on</b>	20/1/2014
<b>Occupation</b>	Product Design	<b>Next review date</b>	Under revision date of revised version 31-Dec-15

ASC/N8202

Perform the component/ aggregate designing operation

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# National Occupational Standard



## Overview

This unit is about conducting the designing the given component using various design techniques

**ASC/N8202**

**Perform the component/ aggregate designing operation**

National Occupational Standard	<b>Unit Code</b>	ASC /N8202
	<b>Unit Title (Task)</b>	<b>Perform the component/ aggregate designing operation</b>
	<b>Description</b>	This NOS is about understanding the internal product design requirements and designing components using the right kinds of computer graphic techniques
	<b>Scope</b>	The draughtsman will be responsible for <ul style="list-style-type: none"> <li>• understanding the design team requirements</li> <li>• designing components using various software based techniques</li> <li>• inspect and store graphs, charts and drawing files</li> </ul> The job holder will various designing methods using CAD/ CAM and other soft wares for designing components. The role holder will interact with the product design team within R&D
	<b>Performance Criteria(PC) w.r.t. the Scope</b>	
	<b>Element</b>	<b>Performance Criteria</b>
	<b>Understanding the customer requirement</b>	PC1. Coordinate with the internal design team for understanding the component requirements including need and utility of the component PC2. Ensure that the information received from the internal customer is correct and complete PC3. Ensure that the understanding of the requirement is correct
	<b>Design the component as per customer/ National /International/Organizational specifications</b>	PC4. Understand packaging & other requirements to decide on dimensions, measurements and tolerances of the aggregate/component from system down to child component level . PC5. Create a physical drawing of the product – visualizing the final product and then creating a design/ drawing PC6. Understand the type of material which will be used for making the component PC7. Use the Geometric and Trigonometric rules/ formula provided by the supervisor to develop & design specifications for the component PC8. Work on CAD techniques to generate 3D product model from the incoming drawing or associated information of the customer PC9. Create layouts and drawing with various views to generate relationship between components and assemblies PC10. Ensure that the layout and the view created areas per requirement to create a first level of visual representation of the component PC11. Use various drawing/ drafting aids like colours, symbols etc. to highlight areas in the drawings PC12. Test the 3D model through simulation/ packaging study on feasibility of actual product as per the customer requirement PC13. Generate the 2D drawing for the actual manufacturing of the component and share the same with the product design team for their comments PC14. Ensure necessary instructions and comments are added in the drawing sheets as well as 2D/ 3D models to easy the understanding of the drawing PC15. Ensure that the drawings are completed as per the scale required for

**ASC/N8202**

**Perform the component/ aggregate designing operation**

	<p>the design process, verification through chain of dimensions/ tolerance stack up</p> <p>PC16. Co- ordinate with other departments related to the component design work stream for design review and check the correctness and validity of the drawing for production zing.</p>
<b>Inspection and storage</b>	<p>PC17. Conduct quality inspection of the drawings and sketches for various tolerances levels</p> <p>PC18. Ensure that the feedback shared by the product design team on the 2D drawings is incorporated in the final drawing/ design and the drawings are modified</p> <p>PC19. Ensure that the drawings are tagged with the right numbers &amp; codes as per the internal SOPs</p> <p>PC20. Ensure that the drawings ( hard copies &amp; soft copies) are stored in the right places which can be easily accessed by the team. Follow manual / PLM systems .</p>
<b>Knowledge and Understanding (K)</b>	
<b>A. Organizational Context</b> (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. relevant standards and procedures followed in the company</p> <p>KA2. different types of products manufactured by the company</p> <p>KA3. Quality and Safety policy of the organization</p>
<b>B. Technical Knowledge</b>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. different types of designing processes and associated software for component design – CATIA, IDEAS, Unigraphics etc.</p> <p>KB2. computer programming and drafting skills</p> <p>KB3. the method of reading and interpreting the various drawings</p> <p>KB4. 3D modelling, simulation, 2D drawings, Limits &amp; Fits, GD &amp; T etc.</p> <p>KB5. algebra and trigonometric rules and applications</p> <p>KB6. how to visualize the final product output and conduct quality verification tests</p> <p>KB7. the raw material to be used for the component designing process – raw material quantity, quality and basic raw material properties</p> <p>KB8. Internal customer interaction and internal customer need analysis/ customer requirement analysis</p> <p>KB9. how to interpret Tolerance Analysis sheet supplied by the design team</p> <p>KB10. understand various dimensional mismatches which may happen on the actual product assembly</p>
<b>Skills (S) [Optional]</b>	
<b>A. Core Skills/ Generic Skills</b>	<b>Writing Skills</b>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. document information required for creating the designs</p> <p>SA2. create drawings in 2D and 3D framework as per the Tolerance Analysis Sheet and the Customer Need Analysis</p>

**ASC/N8202**

**Perform the component/ aggregate designing operation**

	SA3. create drawing records for storage as defined in the SOPs
	<b>Reading Skills</b>
	The user/individual on the job needs to know and understand how to: SA4. read and interpret technical customer drawings SA5. read symbols and dimensions used in the drawings SA6. read software manuals and process documents to understand the software and processes SA7. read internal information documents sent by internal teams
	<b>Oral Communication (Listening and Speaking skills)</b>
	The user/individual on the job needs to know and understand how to: SA8. discuss task lists, schedules and activities with the supervisor SA9. effectively communicate with the team members SA10. question the customer in order to understand the product requirement, nature of the problem and to clarify queries SA11. attentively listen with full attention and comprehend the information given by the speaker
	<b>B. Professional Skills</b>
	<b>Plan and Organize</b>
	The user/individual on the job needs to know and understand: SB1. plan and organize the work order received from the internal customers SB2. plan and organize the design/process/quality documents received from internal customers SB3. organize all drawings and manuals so that sorting out information is fast
	<b>Analytical Thinking</b>
	The user/individual on the job needs to know and understand how to: SB4. carefully analyse the 3d simulation and 2D drawing for various customer specifications SB5. carefully do the design analysis with relevant actions as listed in SOP/WI
	<b>Creativity</b>
	The user/individual on the job needs to know and understand how to: SB6. visualize the final customer requirement including type of product, dimensions, shape, product usage, type of material to be used SB7. offer different design solutions to the customer in order to arrive at the final product design
	<b>Desire to learn and take initiatives</b>
	The user/individual on the job needs to know and understand how to: SB8. follow instructions and work on areas of improvement identified SB9. complete the assigned tasks with minimum supervision SB10. complete the job defined by the supervisor within timelines and quality norms
	<b>Problem Solving and Decision making</b>

**ASC/N8202**

**Perform the component/ aggregate designing operation**

	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB11. detect problems in day to day tasks</p> <p>SB12. support supervisor in using specific problem solving techniques and detailing out the problems</p> <p>SB13. discuss possible solution with the supervisor for problem solving</p> <p>SB12. make decisions in emergency conditions in case the supervisor is not available( as per the authority matrix defined by the organization)</p>
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**NOS Version Control**

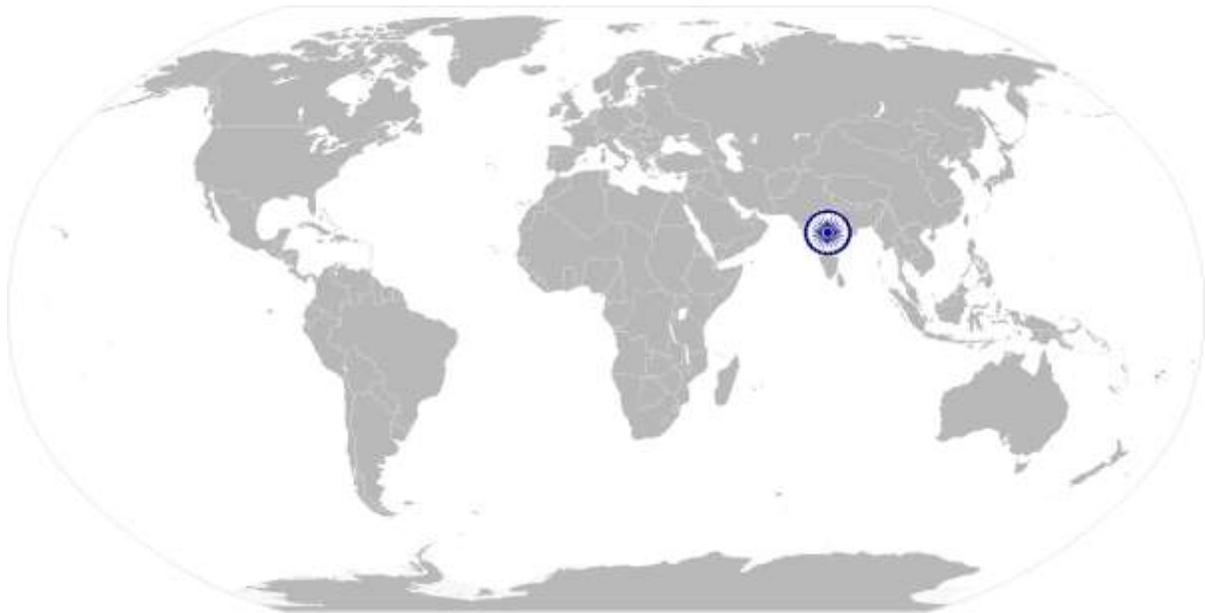
<b>NOS Code</b>	ASC/N8202		
<b>Credits(NSQF)</b>	TBD	<b>Version number</b>	1.0
<b>Industry</b>	Automotive	<b>Drafted on</b>	10/1/2014
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<b>Occupation</b>	Product Design	<b>Next review date</b>	Under revision date of revised version 31-Dec-15

ASC/N0006

Maintain a safe and healthy working environment

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# National Occupational Standards



## Overview

This unit is about establishing a Safe, Healthy and Environment friendly workplace

ASC/N0006

**Maintain a safe and healthy working environment**

National Occupational Standard	<b>Unit Code</b>	ASC/N0006
	<b>Unit Title (Task)</b>	<b>Maintain a safe and healthy working environment</b>
	<b>Description</b>	This NOS unit is about creating a Safe and Healthy work place, adhering to the safety guidelines in the working area, following practices which are not impacting the environment in a negative manner and training team members on health and safety related issues
	<b>Scope</b>	<p>The role holder will be responsible for:</p> <ul style="list-style-type: none"> <li>• identifying and reporting risks</li> <li>• creating and sustaining a safe, clean and environmental friendly work place</li> </ul> <p>This NOS will be applicable to all Automotive sector manufacturing job roles</p>
	<b>Performance Criteria (PC) w.r.t. the Scope</b>	
	<b>Element</b>	<b>Performance Criteria</b>
	<b>Identify and report the risks identified</b>	<p>PC1. Display understanding of the activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals, loud noise</p> <p>PC2. Be aware of the areas in the plant/ lab facility which are potentially hazardous/ unhygienic in nature</p> <p>PC3. Understand all risk involving and hazardous areas near the work place are marked/ tagged in order to caution the users of the work area/ machinery</p> <p>PC4. Attend awareness drives held amongst other on sharing information on the identified risks.</p> <p>PC5. Attend periodic awareness sessions are conducted</p>
	<b>Create and sustain a Safe, clean and environment friendly work place</b>	<p>PC6. Wear the recommended Personal Protective Equipment (PPE) and also ensure self-usage of the required PPEs when entering the plant premises</p> <p>PC7. Display awareness of the instructions given on the equipment manual describing the operating process of the equipment to prevent any hazard</p> <p>PC8. Be aware of the first aid safety kit at the work place/ shop floor location and the requisite items to respond to minor injuries.</p> <p>PC9. Attend all safety and fire drills to be self-aware of safety hazards and preventive techniques and ensure that the team participate in all the required safety and fire drills</p> <p>PC10. Participate in all safety related initiatives like Safety Committee participations, Safety Day Celebrations etc.</p> <p>PC11. Maintain high standards of personal hygiene at the work place</p> <p>PC12. Inform the medical officer/ HR in case of self or an employee's illness of contagious nature so that preventive</p>

ASC/N0006

**Maintain a safe and healthy working environment**

	actions can be planned for others
<b>Knowledge and Understanding (K)w.r.t. the scope</b>	
<b>Element</b>	<b>Knowledge and Understanding</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. relevant standards, procedures and policies related to Health, Safety and Environment followed in the company KA2. emergency handling procedures & hierarchy for escalation
<b>B. Technical Knowledge</b>	The user/individual on the job needs to know and understand: KB1. basic knowledge of Safety procedures( fire fighting, first aid) within the organization KB2. knowledge of various types of PPEs and their usage KB3. basic knowledge of risks/hazards associated with each occupation in the organization KB4. how to safely operate various tools and machines and risks associated with the tools/ equipment KB5. knowledge of personal hygiene and how an individual can contribute towards creating a highly safe and clean working environment
<b>Skills (S)w.r.t. the scope</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. write basic level notes and observations
	<b>Reading Skills</b>
	The user/individual on the job needs to know and understand how to: SA2. read safety instructions put up across the plant premises SA3. read safety precautions mentioned in equipment manuals and panels to understand the potential risks associated
	<b>Oral Communication (Listening and Speaking skills)</b>
	The user/individual on the job needs to know and understand how to: 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>Judgmental Thinking</b>
	The user/individual on the job needs to know and understand how to:

**ASC/N0006**

**Maintain a safe and healthy working environment**

	SB1. use common sense and make judgments during day to day basis
	SB2. use reasoning skills to identify and resolve basic problems
	<b>Persuasion skills</b>
	The user/ individual on the jobs needs to know and understand how to:
	SB3. persuade team members to wear Personal Protective Equipment as per requirement
SB4. ensure that the team understands the importance of using various machines and equipment without creating any risk to human/ machine	
SB5. train team members on various risks identified	
<b>Analytical Thinking</b>	
The user/individual on the job needs to know and understand how to:	
SB6. break the problem into smaller issues and tasks to arrive at a solution	
SB7. understand inter process relationship and establish relationship between various parts of the problem	
SB8. leverage experience to find effective solutions to problems	
SB9. use basic analytical tools to arrive at solutions	

**NOS Version Control**

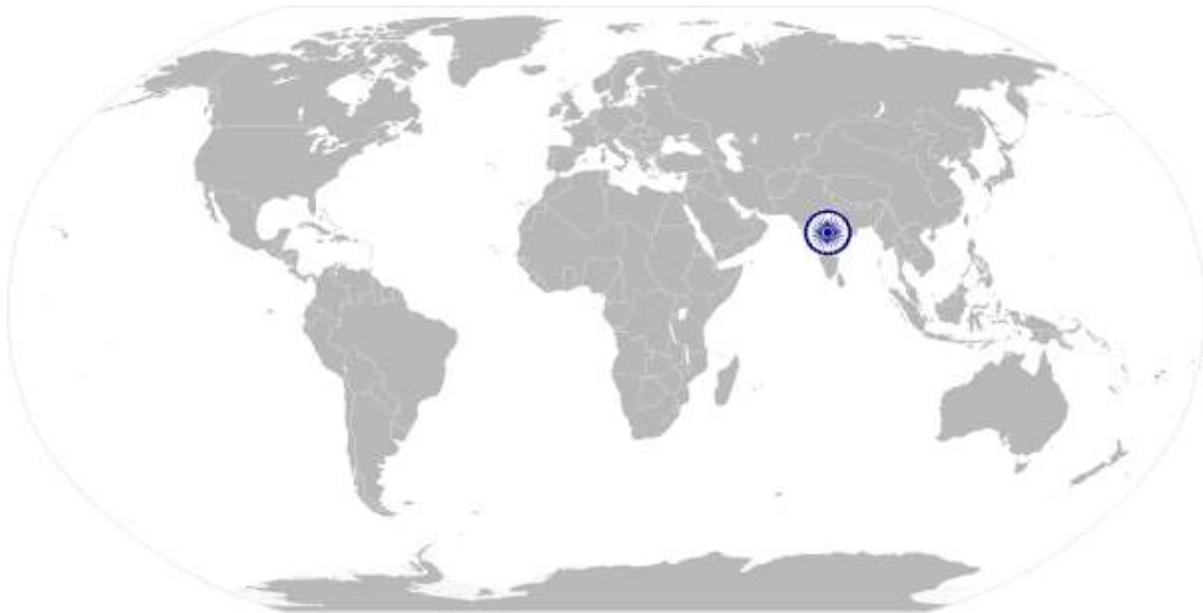
<b>NOS Code</b>	ASC/N0006C		
<b>Credits(NSQF)</b>	TBD	<b>Version number</b>	1.0
<b>Industry</b>	Automotive	<b>Drafted on</b>	16/12/2013
<b>Industry Sub-sector</b>	R&D	<b>Last reviewed on</b>	20/1/2014
<b>Occupation</b>	Product Design	<b>Next review date</b>	Under revision date of revised version 31-Dec-15

ASC/N0021

Maintain 5S at the work premises

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# National Occupational Standard



## Overview

This unit is about the understanding all principles of 5S and follow the given guidelines to ensure a clean and efficient working environment in the organization

**ASC/N0021**

**Maintain 5S at the work premises**

National Occupational Standard

<b>Unit Code</b>	<b>ASC/N0021</b>
<b>Unit Title (Task)</b>	<b>Maintain 5S at the work premises</b>
<b>Description</b>	This NOS is about ensuring all 5 S activities both at the shop floor and the office area to facilitate increase in work productivity
<b>Scope</b>	The individual needs to <ul style="list-style-type: none"> <li>Ensure sorting, streamlining &amp; organizing, storage and documentation, cleaning, standardization and sustenance across the plant and office premises of the organization</li> </ul>
<b>Performance Criteria (PC) w.r.t. the Scope</b>	
<b>Element</b>	<b>Performance Criteria</b>
<b>Ensure sorting</b>	<p>PC1. 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>PC2. Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions</p> <p>PC3. Follow the technique of waste disposal and waste storage in the proper bins as per SOP</p> <p>PC4. Segregate the items which are labelled as red tag items for the process area and keep them in the correct places</p> <p>PC5. 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>PC6. Ensure that areas of material storage areas are not overflowing</p> <p>PC7. 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>PC8. Return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area</p> <p>PC9. Follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards</p>
<b>Ensure proper documentation and storage (organizing, streamlining)</b>	<p>PC10. Follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists</p> <p>PC11. Check that the items in the respective areas have been identified as broken or damaged</p> <p>PC12. 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>

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	<p>PC13. Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions</p>
<p><b>Ensure cleaning of self and the work place</b></p>	<p>PC14. Check whether safety glasses are clean and in good condition            PC15. Keep all outside surfaces of recycling containers are clean            PC16. Ensure that the area has floors swept, machinery clean and generally clean. In case of cleaning, ensure that proper displays are maintained on the floor which indicate potential safety hazards            PC17. Check whether all hoses, cabling &amp; wires are clean, in good condition and clamped to avoid any mishap or mix up            PC18. Ensure workbenches and work surfaces are clean and in good condition            PC19. Follow the cleaning schedule for the lighting system to ensure proper illumination            PC20. Store the cleaning material and equipment in the correct location and in good condition            PC21. Ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene</p>
<p><b>Ensure sustenance</b></p>	<p>PC22. Follow the daily cleaning standards and schedules to create a clean working environment            PC23. Attend all training programs for employees on 5 S            PC24. Support the team during the audit of 5 S            PC25. Participate actively in employee work groups on 5S and encourage team members for active participation            PC26. Follow the guidelines for What to do and What not to do to build sustainability in 5S as mentioned in the 5S check lists/ work instructions</p>
<p><b>Knowledge and Understanding (K) w.r.t. the scope</b></p>	
<p><b>Element</b></p>	<p><b>Knowledge and Understanding</b></p>
<p><b>C. Organizational Context</b> (Knowledge of the company / organization and its processes)</p>	<p>The user/individual on the job needs to know and understand:            KA3. relevant standards, procedures and policies related to 5S followed in the company</p>
<p><b>D. Technical Knowledge</b></p>	<p>The user/individual on the job needs to :</p> <p>KB6. have basic knowledge of 5S procedures            KB7. know various types 5s practices followed in various areas            KB8. understand the 5S checklists provided in the department/ team            KB9. have skills to identify useful &amp; non useful items            KB10. have knowledge of labels , signs &amp; colours used as indicators            KB11. Have knowledge on how to sort and store various types of tools, equipment, material etc.            KB12. know , how to identify various types of waste products            KB13. understand the impact of waste/ dirt/ dust/unwanted</p>

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	<p>substances on the process/ environment/ machinery/ human body</p> <p>KB14. have knowledge of best ways of cleaning &amp; waste disposal</p> <p>KB15. understand the importance of standardization in processes</p> <p>KB16. understand the importance of sustainability in 5S</p> <p>KB17. have knowledge of TQM process</p> <p>KB18. have knowledge of various materials and storage norms</p> <p>KB19. understand visual controls, symbols, graphs etc.</p>
<b>Skills (S)w.r.t. the scope</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: SA8. write basic level notes and observations SA9. note down observations (if any) related to the process SA10. write information documents to internal departments/ internal teams
	<b>Reading Skills</b>
	The user/individual on the job needs to know and understand how to: SA11. read 5S instructions put up across the plant premises
	<b>Oral Communication (Listening and Speaking skills)</b>
	The user/individual on the job needs to know and understand how to: SA12. effectively communicate information to team members inform employees in the plant and concerned functions about 5S SA13. question the process head in order to understand the 5S related issues SA14. attentively listen with full attention and comprehend the information given by the speaker during 5S training programs
<b>B. Professional Skills</b>	<b>Judgmental Thinking</b>
	The user/individual on the job needs to know and understand how to: SB10. use common sense and make judgments during day to day basis SB11. use reasoning skills to identify and resolve basic problems using 5S
	<b>Persuasion</b>
	The user/ individual on the jobs needs to know and understand how to: SB12. persuade co team members to follow 5 S SB13. ensure that the co team members understand the importance of using 5 S tool
	<b>Creativity</b>

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	<p>The user/individual on the job needs to know and understand how to :</p> <p>SB14. use innovative skills to perform and manage 5 S activities at the work desk and the shop floor</p> <p>SB15. exhibit inquisitive behaviour to seek feedback and question on the existing set patterns of work</p>
	<p><b>Self –Discipline</b></p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB16. do what is right, not what is a popular practices</p> <p>SB17. follow shop floor rules&amp; regulations and avoid deviations; make 5S an integral way of life</p> <p>SB18. ensure self-cleanliness on a daily basis</p> <p>SB19. demonstrate the will to keep the work area in a clean and orderly manner</p>

**NOS Version Control**

<b>NOS Code</b>	ASC/N0021		
<b>Credits(NSQF)</b>	TBD	<b>Version number</b>	1.0
<b>Industry</b>	Automotive	<b>Drafted on</b>	1/03/2014
<b>Industry Sub-sector</b>	Manufacturing/ R&D	<b>Last reviewed on</b>	20/1/2014
<b>Occupation</b>	Product Design	<b>Next review date</b>	Under revision date of revised version 31-Dec-15

**Qualification Pack for Draughtsperson L4**

<b>Criteria for assessment of Trainees</b>
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JOB ROLE	Draughtsman / Draughtsperson L4
Qualification Pack	ASC/Q 8201
No. Of NOS	2 Role specific ,3 generic

NOS Title/ NOS Elements	NOS & Performance Criterion Description	Theory	Marks allocation	
			Viva	Practical
ASC/N 8201	<b>Understand processes and equipment requirement for designing and graphical modelling</b>			
<b>Understand the designing requirements, designing equipment and parameters to be set for the process</b>	PC1. Ensure correct understanding of the requirements in terms of design and utility of the component		10	30
	PC2. Understand the methodology and process to be adopted for completing the work order through discussions with the supervisor and reading the process manuals/ Work Instructions/Standard Operating Procedures			
	PC3. Visualize the end product required by the customer and prepare a rough sketch of the end product		40	30
	PC4. Correctly understand the use of various software used like CATIA, Auto –CAD, Unigraphics etc. for creating the designs and models as specified in the Work Order/ Customer			
	PC5. Understand 5 S related to the work station/ filing of the drawings and implement 5S for workstation upkeep and upkeep of records pertaining to drawings and sketches.			
	PC6. Understand internal systems of design records (Manual /PLM ), Change notes (ECN)			
<b>Escalations of queries on the given job</b>	PC7. Refer the queries to a competent internal specialist if they cannot be resolved by the designer on own		50	20
	PC8. Obtain help or advice from specialist if the problem is outside his/her area of competence or experience			
	PC9. Confirm self-understanding with the specialist holding discussions so that all			



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	<p>the same with the product design team for their comments</p> <p>PC14. Ensure necessary instructions and comments are added in the drawing sheets as well as 2D/ 3D models to easy the understanding of the drawing</p> <p>PC15. Ensure that the drawings are completed as per the scale required for the design process, verification through chain of dimensions/ tolerance stack up</p> <p>PC16. Co- ordinate with other departments related to the component design work stream for design review and check the correctness and validity of the drawing for production zing.</p>			
<b>Inspection and storage</b>	<p>PC17. Conduct quality inspection of the drawings and sketches for various tolerances levels</p> <p>PC18. Ensure that the feedback shared by the product design team on the 2D drawings is incorporated in the final drawing/ design and the drawings are modified</p> <p>PC19. Ensure that the drawings are tagged with the right numbers &amp; codes as per the internal SOPs</p> <p>PC20. Ensure that the drawings ( hard copies &amp; soft copies) are stored in the right places which can be easily accessed by the team. Follow manual / PLM systems .</p>		30	50
	<b>subtotal</b>		<b>100</b>	<b>200</b>
<b>ASC/N 0006</b>	<b>Maintain a safe and healthy working environment</b>	<b>Theory</b>	<b>Viva</b>	<b>Practical</b>
<b>C</b>				
<b>Identify and report the risks identified</b>	<p>PC1. Display understanding of the activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise</p> <p>PC2. Be aware of the areas in the plant/ lab facility which are potentially hazardous/ unhygienic in nature</p> <p>PC3. Understand all risk involving and hazardous areas near the work place are marked/ tagged in order to caution the users of the work area/ machinery</p> <p>PC4. Attend awareness drives held amongst other on sharing information on the</p>		20	50

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	<p>identified risks.</p> <p>PC5. Attend periodic awareness sessions are conducted</p>			
<b>Create and sustain a Safe, clean and environment friendly work place</b>	<p>PC6. Wear the recommended Personal Protective Equipment (PPE) and also ensure self-usage of the required PPEs when entering the plant premises</p> <p>PC7. Display awareness of the instructions given on the equipment manual describing the operating process of the equipment to prevent any hazard</p> <p>PC8. Be aware of the first aid safety kit at the work place/ shop floor location and the requisite items to respond to minor injuries.</p> <p>PC9. Attend all safety and fire drills to be self-aware of safety hazards and preventive techniques and ensure that the team participate in all the required safety and fire drills</p> <p>PC10. Participate in all safety related initiatives like Safety Committee participations, Safety Day Celebrations etc.</p> <p>PC11. Maintain high standards of personal hygiene at the work place</p> <p>PC12. Inform the medical officer/ HR in case of self or an employee's illness of contagious nature so that preventive actions can be planned for others</p>		50	40
	<b>subtotal</b>		<b>70</b>	<b>90</b>
<b>ASC / N 0021</b>	<b>Maintain 5S at the work premises</b>	<b>Theory</b>	<b>Viva</b>	<b>Practical</b>
<b>Ensure sorting</b>	<p>PC1. 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>PC2. Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions</p> <p>PC3. Follow the technique of waste disposal and waste storage in the proper bins as per SOP</p> <p>PC4. Segregate the items which are labelled as red tag items for the process area and keep them in the correct places</p>		10	20

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	PC5. Sort the tools/ equipment/ fasteners/ spare parts as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions PC6. Ensure that areas of material storage areas are not overflowing PC7. 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 PC8. Return the extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area PC9. Follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards		10	20
<b>Ensure proper documentation and storage ( organizing , streamlining)</b>	PC10. Follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists PC11. Check that the items in the respective areas have been identified as broken or damaged PC12. Follow the given instructions and check for labeling of fluids, oils. lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc. PC13. Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions		10	20
<b>Ensure sustenance</b>	PC14. Follow the daily cleaning standards and schedules to create a clean working environment PC15. Attend all training programs for employees on 5 S PC16. Support the team during the audit of 5 S PC17. Participate actively in employee work groups on 5S and encourage team members for active participation PC18. Follow the guidelines for What to do and What not to do to build sustainability in 5S as mentioned in the 5S check lists/ work instructions		20	30
	<b>Sub total</b>		<b>50</b>	<b>90</b>

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	<b>Total</b>	<b>225</b>	<b><u>320</u></b>	<b><u>460</u></b>