

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

Qualifications Pack-Modeller

SECTOR: AUTOMOTIVE

SUB-SECTOR: RESEARCH & DEVELOPMENT

OCCUPATION: PRODUCT DESIGNING

JOB ROLE: MODELLER

REFERENCE ID: ASC/Q8101

ALIGNED TO: NCO-2004/ Nil

Modeller: The core purpose of the role is design development through visualization of the product in three areas i.e., Clay Modelling, Digital data and Mock Up. It further includes designing the exterior of a vehicle through fixing proportions, shape, and surfaces. Exterior design is first done by a series of digital or manual drawings. Creation of full sized mock-up of the final design (body in white) is also part of this role.

Brief Job Description: Modeller is broadly responsible for visualization of the final product; develop clay model from the design, transforming the sketch into digital data i.e., three dimensional shape and building mock-up which is as close as possible to the real object. A modeller’s working characteristics will include rapid generation of plenty of styling ideas, flexibility in combing existing alternatives and creating aesthetically appealing representations.

Personal Attributes: The individual should have ability to visual the product creatively and innovatively design the same. The individual should further have passion in modelling, styling activities; analytical skills, out of box thinking, problem solving, judgement, decision making, skills etc. and awareness about global and latest trends in the automotive design area with knowledge of material used in the design and technology as well. Individual should also have sculpturing skills, understand customer wants, current trends in the market, customer preference etc.

Job Details	Qualifications Pack Code	ASC/Q8101		
	Job Role	Modeller		
	Credits(NSQF)	TBD	Version number	1.0
	Industry	Automotive	Drafted on	10/1/2014
	Sub-sector	R&D	Last reviewed on	20/1/2014
	Occupation	Modeller	Next review date	Under revision expected date of revised version 31-Dec-15
	NSQC Clearance on	05/08/15		

Job Role	Modeller
Role Description	Modeller is broadly responsible for visualization of the final product; develop clay model from the design, transforming the sketch into digital data i.e., three dimensional shape and building mock-up which is as close as possible to the real object. A modeller's working characteristics will include rapid generation of plenty of styling ideas, flexibility in combing existing alternatives and creating aesthetically appealing representations
NSQF level	6
Minimum Educational Qualifications	<ul style="list-style-type: none"> For Digital Data and Mock Up - DET/ B.E/ B.Tech. in Automobile/ Mechanical/ Mechatronics Bachelor degree in fine arts and sculpturing
Maximum Educational Qualifications	<ul style="list-style-type: none"> For Digital Data and Mock Up - M.E/ M.Tech. in Automobile/ Mechanical/ Mechatronics Modeller with experience in clay modelling, fine arts, sculptures, hand skills
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> CAD/ CAE System Application Clay Modelling – Training on fine arts, sculptures, hand skills I-DEAS Software application Milling Operations of CNC machine, SPM's Latest trends in the automotive industry Training on ergonomics Problem solving Safety& 5S
Minimum Job Entry Age	<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 Act 1948:</p> <ul style="list-style-type: none"> - No one can be provided full employment before attaining the age of 15 - A person between the age of 15 – 18 (both inclusive) could be employed only with employers who follow safety and

	<p>security systems & processes and also that the employee in this bracket will be working under supervision.</p> <p>3 Please note that under the Factories Act 1948 different States may have slightly varying provision which need to be adhered to.</p>
Experience	4-5 years in R&D automobile modelling activities
Occupational Standards (OS)	<p>ASC/N8101: Complete all modelling activities based on the rendered sketch</p> <p>ASC/ N0006C: Maintain a safe and healthy working environment</p> <p>ASC/N0022: Ensure implementation of 5S activities at the shop floor and the office area</p> <p>Optional: N.A.</p>
Performance Criteria	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.
Keywords /Terms	Description
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
OEM	Original Equipment Manufacturer
OS	Occupational Standard(s)
QP	Qualifications Pack
5 S	Technique of maintaining orderliness –Japanese terminology
CP	Control Plan
WI	Work Instructions
SQFD	Simplified Quality Function Definition
CFT	Cross Functional Team
SOR	Statement of requirements
CAD	Computer Aided Design
CAE	Computer Aided Engineering
HMI	Human Machine Interface

ASC/N8101

Complete all modelling activities based on the rendered sketch

National Occupational Standards



Overview

This Occupational Standard describes the knowledge, understanding and skills required to understand and complete all modelling activities based on rendered sketch

ASC/N8101

Complete all modelling activities based on the rendered sketch

National Occupational Standard

Unit Code	ASC/N8101
Unit Title (Task)	Complete all modelling activities based on the rendered sketch
Description	This NOS is about completing all modeling activities based on rendered sketch
Scope	<p>The modeller will be responsible for:</p> <ul style="list-style-type: none"> • Digital Data • Creation of a physical clay model • Creating a Mock-up <p>The role holder will interact with product design team, different Centre of Excellence, different CFT's team, Sourcing Team, Prototype department, product conceptualization team and others</p>
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Digital Data	<p>PC1. Based on the finalized drawing/ freehand sketch/silhouette which convey the character of the competed vehicle create a virtual 3D proportional model using CAD</p> <p>PC2. Develop a mutual understanding of all the factors influencing a proposed design and their impact on it</p> <p>PC3. Display understanding towards closely integrating design-technology convergence</p> <p>PC4. Ensure technical innovations is implemented in a way which the ultimate user experiences as functionally perfect, expedient and visually compelling</p> <p>PC5. Create a computer-generated 3D image of the drawing/ freehand sketch whose data is then used for assessing design and aerodynamics</p> <p>PC6. Ensure that the design focuses not only on the isolated outer shape of automobile parts but combinations of form and functions</p> <p>PC7. Ensure the aesthetic value of the design corresponds to ergonomic functionality and utility features as well</p> <p>PC8. Understand the impact of environmental forces</p>
Creation of a physical clay model	<p>PC9. Create a three dimensional clay model ensuring an understanding of the original intention</p> <p>PC10. Ensure use of clay, wood, resin, form urethane, POP etc. in making real-size physical model</p> <p>PC11. Use eye and hand to check the actual finished lines and surfaces when the model takes shape</p> <p>PC12. Ensure all processes pertaining to creating a physical clay model and chiselling are applied and completed to ensure smooth surface/ uniform application of clay</p>
Creating a Mock-Up	<p>PC13. Create a full sized mock-up of the final design with the use of 3 and 5 axis CNC Milling Machine</p> <p>PC14. Ensure wide range of material such plastics, wood, metal, fabrics and others in creation of a mock-up</p> <p>PC15. Ensure that the mock-up created helps understand aspects related to spaciousness, feel of the cabin, cabin accessibility, visibility and overall visual</p>

ASC/N8101

Complete all modelling activities based on the rendered sketch

	<p>friendliness</p> <p>PC16. Ensure understanding of the engineering drawing & CNC machine operations</p>
Knowledge and Understanding (K) w.r.t. the scope	
Element	Knowledge and Understanding
A. Organisational Context (Knowledge of the Company/ Organisation and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. relevant manufacturing standards and procedures followed in the company</p> <p>KA2. different types of products manufactured by the company</p> <p>KA3. organization methodology/ procedures used for product design</p> <p>KA4. management of product design as per the procedures defined by the organization</p> <p>KA5. quality norms and standards prescribed in the Quality Manual by the organization</p> <p>KA6. 5S and Safety norms practiced in the organization</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. fine arts, sculpturing and hand skills for clay modelling</p> <p>KB2. fundamentals of machines and mechanics</p> <p>KB3. application of relevant principles of functionality, ergonomics, aesthetics etc.</p> <p>KB4. mixing of raw material for sculpturing/ modelling</p> <p>KB5. uniform application of raw material</p> <p>KB6. knowledge of different materials/ chemical process used in product design</p> <p>KB7. latest technologies in auto industry</p> <p>KB8. latest regulations in auto industry</p> <p>KB9. basic Arithmetic and calculation methods for tolerance limits</p> <p>KB10. metallurgical properties of metals used for different processes</p> <p>KB11. the methods of using instruments like Vernier callipers, Micrometres, rulers and other inspection tools</p> <p>KB12. how to read and interpret sketches and engineering drawings</p> <p>KB13. how to visually represent the final product output and hence decide on the key steps to be followed</p>
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Writing skills and reading Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. document information from the manuals, discussion notes, process charts etc.</p> <p>SA2. create small notes/ work documents/ diagrams for operators and helpers to help them understand the process</p> <p>SA3. write inter departmental notes/ memos or make suitable entries in the online system</p> <p>SA4. read equipment manuals and process documents to understand the equipment and processes better</p> <p>SA5. read internal information memos sent by internal customers (other functions within the organization)</p>
	Oral Communication (Listening and Speaking skills)
	<p>The user/individual on the job needs to know and understand how to:</p>

ASC/N8101

Complete all modelling activities based on the rendered sketch

	<p>SA6. discuss task lists, schedules, and work-loads with the team members</p> <p>SA7. answer the queries raised by the team as well as intercompany departments</p> <p>SA8. attentively listen with full attention the queries and grievances raised by the team and comprehend the information given by the speaker</p>
B. Professional Skills	<p>Analytical thinking</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. break the problem into smaller issues and tasks to arrive at a solution</p> <p>SB2. understand inter process relationship and establish relationship between various parts of the problem</p> <p>SB3. leverage experience to find effective solutions to problems</p> <p>SB4. use organizations analytical tools to arrive at solutions</p>
	<p>Plan and Organise</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB5. plan, organize and prioritize the work with Engineering /R & D, Marketing department</p> <p>SB6. organize information, standards manuals etc. so that sorting becomes easy</p> <p>SB7. reorganize resources in case of change of plans</p>
	<p>Judgment and Critical Thinking</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB8. use common sense and make judgments during day to day basis</p> <p>SB9. use reasoning skills to identify and resolve problems</p> <p>SB10. use intuition to detect any potential problems which could arise during operations</p>
	<p>Ownership</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB11. accept additional responsibility for self and the team</p> <p>SB12. encourage self and other to take greater responsibilities</p> <p>SB13. identify obstacles and bottlenecks in the process and on own find basic level solutions for removing these obstacles</p>
	<p>Problem solving and decision making</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SB14. gather information skilfully from multiple sources</p> <p>SB15. analyse information in depth and identifies the problem in a timely manner</p> <p>SB16. develop alternate solutions and resolves problems in early stages</p> <p>SB17. work tireless in spite of repeat activities in a diligent manner to resolve problems on a day to day basis</p> <p>SB18. use previous experience in resolving problems and taking decisions</p> <p>SB19. make timely and independent decisions within the boundaries of the delegation matrix of the organization</p>
	<p>Initiative taking</p> <p>The user/ individual on the job needs to know and understand how to</p> <p>SB20. clearly establish a goal for self or others to accomplish</p> <p>SB21. without instructions from the manager, self-manage the work</p> <p>SB22. take additional responsibilities to make sure that the work is completed on time</p>

ASC/N8101

Complete all modelling activities based on the rendered sketch

	Customer Orientation
	The user/ individual on the job needs to know and understand how to SB23. identify the needs of the customer SB24. ensure that the product designed meets the expectation of the customer SB25. understands importance of customer feedback and drives customer focus
	Out of Box thinking
	The user/ individual on the job needs to know and understand how to: SB26. familiarise with leading practices available in the market SB27. think independently on new approaches to manufacturing process, material management, data management and team management SB28. represent any new ideas/ approaches on process improvement and productivity improvement to the seniors in the team
	Team work and collaboration
The user/ individual on the job needs to know and understand how to: SB29. contribute to building a positive team spirit SB30. exhibit objectivity & openness to others' views SB31. collaborate with stakeholders to achieve the desired state of final result	

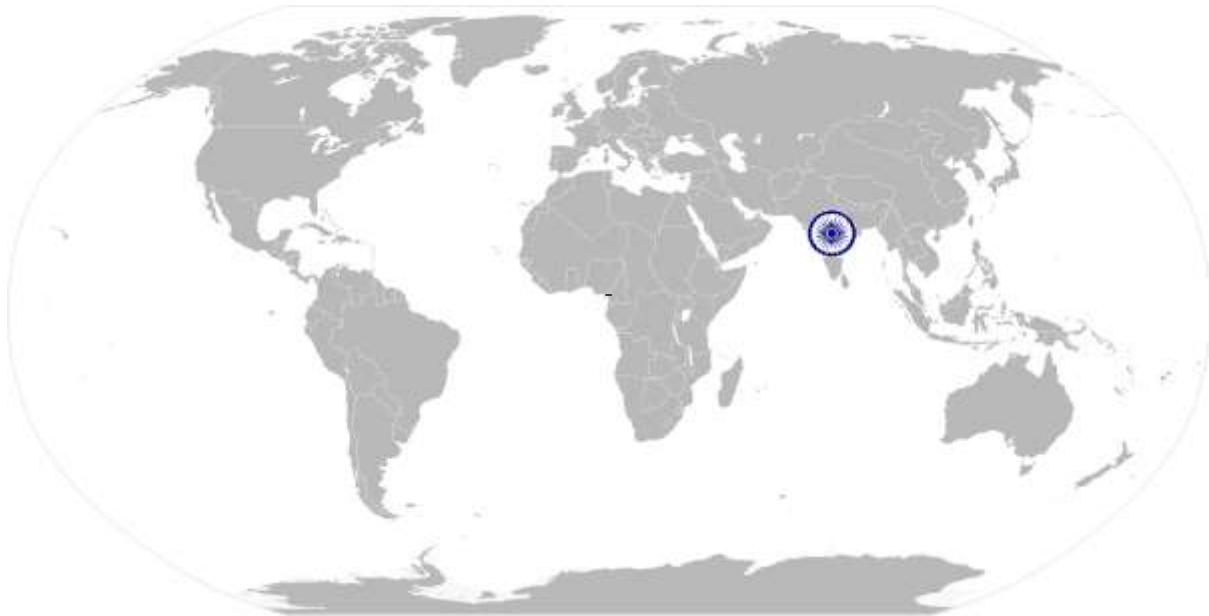
NOS Version Control

NOS Code	ASC/N8101		
Credits(NSQF)	TBD	Version number	1.0
Industry	Automotive	Drafted on	10/1/2014
Industry Sub-sector	R&D	Last reviewed on	20/1/2014
Occupation	Modeller	Next review date	Under revision expected date of revised version 31-Dec-15

ASC/N0006

Maintain a Safe and Healthy working environment

National Occupational Standard



Overview

This unit is about maintaining a Safe and Healthy working environment

ASC/N0006

Maintain a Safe and Healthy working environment

National Occupational Standard	Unit Code	ASC/N0006
	Unit Title (Task)	Maintain a safe and healthy working environment
	Description	This NOS 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
	Scope	<p>The role holder will be responsible for:</p> <ul style="list-style-type: none"> identifying and reporting risks creating and sustaining a safe, clean and environmental friendly work place <p>This NOS will be applicable to all Automotive sector manufacturing job roles</p>
	Performance Criteria (PC) w.r.t. the Scope	
	Element	Performance Criteria
	Display awareness to the potential safety risks	<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>
	Display awareness towards maintaining a Safe, clean and environment friendly work place	<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>
	Knowledge and Understanding (K)w.r.t. the scope	

ASC/N0006

Maintain a Safe and Healthy working environment

Element	Knowledge and Understanding
A. Organizational Context (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. Technical Knowledge	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
Skills (S)w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. write basic level notes and observations SA2. note down observations (if any) related to the process SA3. write information documents to internal departments/ internal teams
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA4. read safety instructions put up across the plant premises SA5. read safety precautions mentioned in equipment manuals and panels to understand the potential risks associated
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA6. effectively communicate information to team members SA7. Inform employees in the plant and concerned functions about SA8. events, incidents & potential risks observed related to Safety, Health and Environment. SA9. question the process head/ safety team in order to understand the safety related issues SA10. attentively listen with full attention and comprehend the SA11. information given by the speaker during safety drills and training programs
B. Professional Skills	Judgmental Thinking
	The user/individual on the job needs to know and understand how to: SB1. use common sense and make judgments during day to day basis

ASC/N0006

Maintain a Safe and Healthy working environment

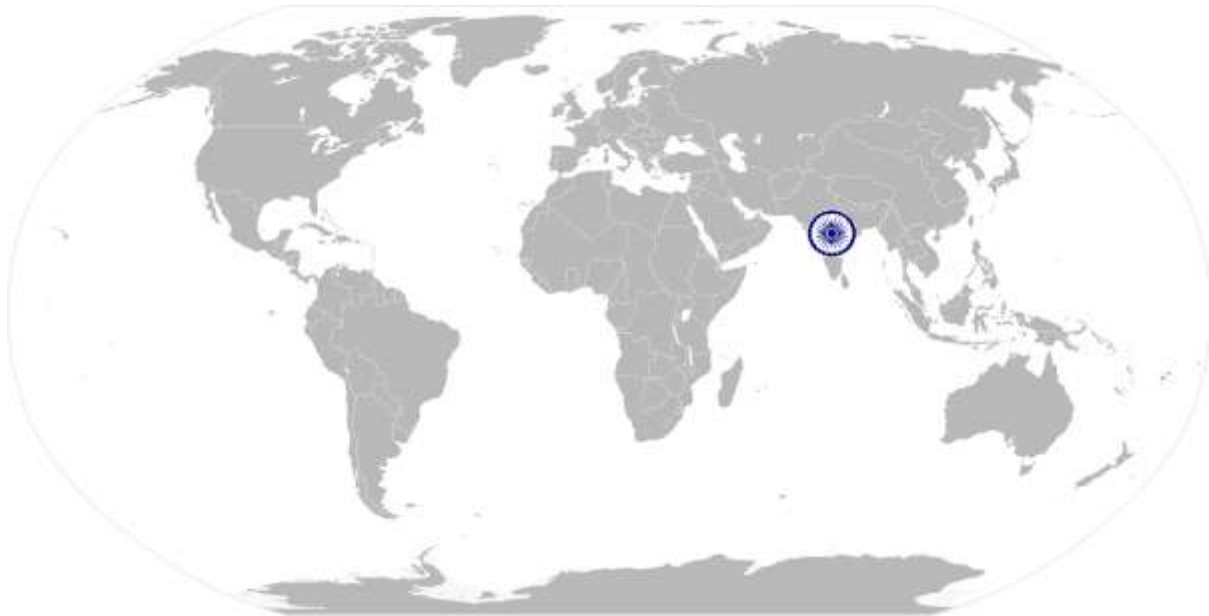
	SB2. use reasoning skills to identify and resolve basic problems
	Persuasion skills
	The user/ individual on the jobs needs to know and understand how to:
	SB3. persuade team members to wear Personal Protective Equipment as per requirement
	SB4. ensure that the team understands the importance of using various machines and equipment without creating any risk to human/ machine
	SB5. train team members on various risks identified
	Analytical Thinking
	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

NOS Code	ASC/N0006		
Credits(NSQF)	TBD	Version number	1.0
Industry	Automotive	Drafted on	16/12/2013
Industry Sub-sector	R&D	Last reviewed on	17/12/2013
Occupation	Modeller	Next review date	Under revision expected date of revised version 31-Dec-15

ASC/N0022: Ensure implementation of 5S activities at the shop floor and the office area

National Occupational Standard



Overview

This unit is about the implementing the various principles of 5S and ensure that the given guidelines are followed to ensure a clean and efficient working environment in the organization

ASC/N0022: Ensure implementation of 5S activities at the shop floor and the office area

National Occupational Standard	Unit Code	ASC/N0022
	Unit Title (Task)	Ensure implementation of 5S activities at the shop floor & the office area
	Description	This NOS is about overseeing the implementation of all 5 S activities both at the shop floor and the office area by the team members and training the team in implementation of the 5S principles
	Scope	The individual needs to <ul style="list-style-type: none"> Ensure sorting, streamlining/ organizing, storage and documentation, systematic cleaning, standardization and sustenance across the plant and office premises of the organization as given in the organization guidelines
	Performance Criteria (PC) w.r.t. the Scope	
	Element	Performance Criteria
	Ensure proper sorting of items at the work place	PC1. Ensure all recyclable materials are put in designated containers PC2. Ensure no Tools, fixtures & jigs are lying on workstations unless in use and no un-necessary items is lying on workbenches or work surfaces unless in use PC3. Ensure that the operators and other team members are segregating the waste in hazardous/ Non Hazardous waste as per the sorting work instructions PC4. Ensure that all the operators are following the technique of waste disposal and waste storage in the designated bins PC5. Segregate the items which are labelled at red tag items for the process area and keep them in the correct places PC6. Ensure that all the tools/ equipment/ fasteners/ spare parts are arranged as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions PC7. Check for return of any type of extra material and tools to the designated sections and make sure that no additional material/ tool is lying near the work area PC8. Oversee removal of unnecessary equipment, storage, furniture, unneeded inventory, supplies, parts and material PC9. Ensure that areas of material storage areas are not overflowing PC10. Ensure proper stacking and storage of 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
	Ensure proper documentation and storage – streamlining & organizing the workplace	PC11. Ensure that the team follows the given instructions and checks for labelling of fluids, oils, lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc. PC12. Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions PC13. Ensure that organizing the workplace takes place with due

ASC/N0022: Ensure implementation of 5S activities at the shop floor and the office area

	<p>considerations to the principles of wasted motions, ergonomics, work & method study .</p>
Ensure cleaning of self and the work place	<p>PC14. Ensure that the area has floors swept, machinery clean and is generally neat and tidy. In case of cleaning, ensure that correct displays are maintained on the floor which indicate potential safety hazards</p> <p>PC15. Ensure workbenches and work surfaces are clean and in good condition</p> <p>PC16. Ensure adherence to the cleaning schedule for the lighting system to ensure proper illumination</p> <p>PC17. Ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene</p>
Ensure standardization	<p>PC18. Ensure that daily cleaning standards and schedules to create a clean working environment are followed across the plant</p> <p>PC19. Oversee that various cleaning and organizing tasks have been developed and assigned for the work area</p> <p>PC20. Ensure logical and user friendly documentation and file management for all activities across the plant and create guidelines around standardization of processes</p> <p>PC21. Ensure timely creation and sharing of the 5S checklists</p> <p>PC22. Ensure that the 5S manual are available as per the timelines</p>
Ensure sustenance	<p>PC23. Ensure team cooperation during the audit of 5 S activities</p> <p>PC24. Ensure that workmen are periodically trained to address challenges related to 5S</p> <p>PC25. Participate actively in employee work groups on 5S and encourage team members for active participation</p> <p>PC26. Oversee that the staff/operators are trained and fully understand 5s procedures</p> <p>PC27. Ensure that all the guidelines for What to do and What not to do to build sustainability in 5S are mentioned in the 5S check lists/ work instructions and are easily searchable</p> <p>PC28. Ensure continuous training of the team members on 5S in order to increase their awareness and support implementation</p> <p>PC29. Ensure that all visual controls, notice boards, symbols etc. at the manufacturing place are created, working and are put up as per the requirement</p>
Knowledge and Understanding (K) w.r.t. the scope	
Element	Knowledge and Understanding
C. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA3. relevant standards, procedures and policies related to 5S followed in the company</p>

ASC/N0022: Ensure implementation of 5S activities at the shop floor and the office area

D. Technical Knowledge	<p>The user/individual on the job needs to :</p> <p>KB6. have basic knowledge of 5S procedures</p> <p>KB7. know various types 5s practices followed in various areas</p> <p>KB8. understand the 5S checklists provided in the department/ team</p> <p>KB9. have skills to identify useful & non useful items</p> <p>KB10. have knowledge of labels , signs & colours used as indicators</p> <p>KB11. Have knowledge on how to sort and store various types of tools, equipment, material etc.</p> <p>KB12. know , how to identify various types of waste products</p> <p>KB13. understand the impact of waste/ dirt/ dust/unwanted substances on the process/ environment/ machinery/ human body</p> <p>KB14. have knowledge of best and environment protective ways of cleaning & 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>
Skills (S)w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA12. write basic level notes and observations</p> <p>SA13. note down observations (if any) related to the process</p> <p>SA14. write information documents to internal departments/ internal teams</p>
	Reading Skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA15. read 5S instructions put up across the plant premises</p>
	Oral Communication (Listening and Speaking skills)
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA16. effectively communicate information to team members inform employees in the plant and concerned functions about 5S</p> <p>SA17. question the process head in order to understand the 5S related issues</p> <p>SA18. attentively listen with full attention and comprehend the information given by the speaker during 5S training programs</p>
B. Professional Skills	Judgmental Thinking
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB10. use common sense and make judgments during day to day basis</p> <p>SB11. use reasoning skills to identify and resolve basic problems using 5S</p>

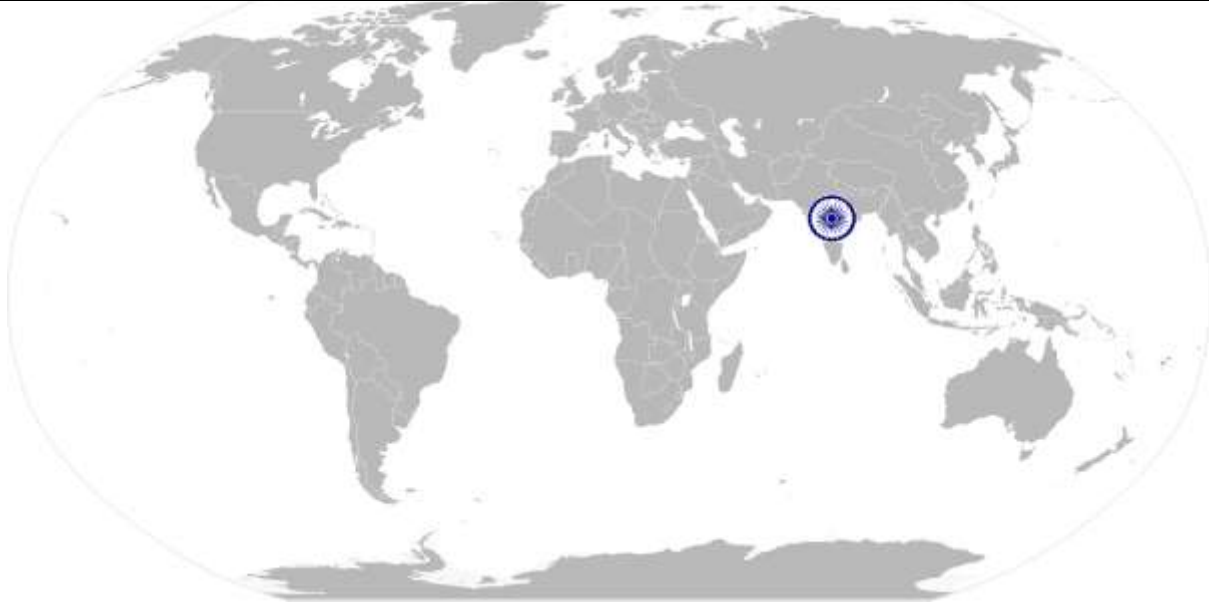
ASC/N0022: Ensure implementation of 5S activities at the shop floor and the office area

	Persuasion
	The user/ individual on the jobs needs to know and understand how to: SB12. persuade team members to follow 5 S SB13. ensure that the team members understand the importance of using 5 S tool
	Creativity
	The user/individual on the job needs to know and understand how to : SB14. use innovative skills to perform and manage 5 S activities at the work desk and the shop floor SB15. exhibit inquisitive behaviour to seek feedback and question on the existing set patterns of work emerge, techniques in CA/CI around 5 S work practices
	Self –Discipline
	The user/individual on the job needs to know and understand how to: SB16. do what is right, not what is a popular practice SB17. follow shop floor rules& regulations and avoid deviations SB18. lead by example in the plant premises while performing activities related to 5S SB19. ensure self-cleanliness on a daily basis SB20. demonstrate the will to keep the work area in a clean and orderly manner
	Ownership
	The user/individual on the job needs to know and understand how to: SB21. accept additional responsibility for self and the team SB22. encourage self and other to take greater responsibilities for managing 5S SB23. identify obstacles and bottlenecks in the process and find basic level solutions for removing these obstacles
	Decision making
	The user/individual on the job needs to know and understand how to: SB24. use previous experience in resolving problems and taking decisions SB25. make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization

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NOS Version Control

NOS Code	ASC/N0022		
Credits(NSQF)	TBD	Version number	1.0
Industry	Automotive	Drafted on	1/03/2014
Industry Sub-sector	Manufacturing/ R&D	Last reviewed on	15/03/2014
Occupation	Modeller	Next review date	Under revision expected date of revised version 31-Dec-15



Criteria for assessment of Trainees
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JOB ROLE	Modeller
Qualification Pack	ASC/Q 8101
No. Of NOS	1 Role specific ,2 generic

Assessable Outcomes	Assessment criteria	Marks Allocation		
		Theory	Viva	Practical
ASC/N8101	Complete all modelling activities based on rendered sketch			
Digital Data	PC1. Based on the finalized drawing/ freehand sketch/silhouette which convey the character of the competed vehicle create a virtual 3D proportional model using CAD PC2. Develop a mutual understanding of all the factors influencing a proposed design and their impact on it PC3. Display understanding towards closely integrating design-technology convergence PC4. Ensure technical innovations is implemented in a way which the ultimate user experiences as functionally perfect, expedient and visually compelling PC5. Create a computer-generated 3D image of the drawing/ freehand sketch whose data is then used for assessing design and aerodynamics PC6. Ensure that the design focuses not only on the isolated outer shape of automobile parts but combinations of form and functions PC7. Ensure the aesthetic value of the design corresponds to ergonomic functionality and utility features as well PC8. Understand the impact of environmental forces		30	100
Creation of a physical clay model	PC9. Create a three dimensional clay model ensuring an understanding of the original intention PC10. Ensure use of clay, wood, resin, form urethane, POP etc. in making real-size physical model PC11. Use eye and hand to check the actual finished lines and surfaces when the model takes shape PC12. Ensure all processes pertaining to creating a physical clay model and chiselling are applied and completed to ensure smooth surface/ uniform application of clay		30	100

<p>Creating a Mock-Up</p>	<p>PC13. Create a full sized mock-up of the final design with the use of 3 and 5 axis CNC Milling Machine</p> <p>PC14. Ensure wide range of material such plastics, wood, metal, fabrics and others in creation of a mock-up</p> <p>PC15. Ensure that the mock-up created helps understand aspects related to spaciousness, feel of the cabin, cabin accessibility, visibility and overall visual friendliness</p> <p>PC16. Ensure understanding of the engineering drawing & CNC machine operations</p>		<p>30</p>	<p>100</p>
	<p>Subtotal</p>	<p>210</p>	<p>90</p>	<p>300</p>
<p>ASC/N0006C</p>	<p>Maintain a safe and healthy working environment</p>			
<p>Display awareness to the potential safety risks</p>	<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>		<p>10</p>	<p>30</p>
<p>Display awareness towards maintaining a Safe, clean and environment friendly work place</p>	<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</p>		<p>5</p>	<p>20</p>

	<p>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>			
	Subtotal	35	15	50
ASC/N0022	Ensure implementation of 5S activities at the shop floor & the office area			
Ensure proper sorting of items at the work place	<p>PC1. Ensure all recyclable materials are put in designated containers</p> <p>PC2. Ensure no Tools, fixtures & jigs are lying on workstations unless in use and no unnecessary items is lying on workbenches or work surfaces unless in use</p> <p>PC3. Ensure that the operators and other team members are segregating the waste in hazardous/ Non Hazardous waste as per the sorting work instructions</p> <p>PC4. Ensure that all the operators are following the technique of waste disposal and waste storage in the designated bins</p> <p>PC5. Segregate the items which are labelled at red tag items for the process area and keep them in the correct places</p> <p>PC6. Ensure that all the tools/ equipment/ fasteners/ spare parts are arranged as per specifications/ utility into proper trays, cabinets, lockers as mentioned in the 5S guidelines/ work instructions</p> <p>PC7. Check for return of any type of extra material and tools to the designated sections and make sure that no</p>		2	10

	<p>additional material/ tool is lying near the work area</p> <p>PC8. Oversee removal of unnecessary equipment, storage, furniture, unneeded inventory, supplies, parts and material</p> <p>PC9. Ensure that areas of material storage areas are not overflowing</p> <p>PC10. Ensure proper stacking and storage of 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>			
Ensure proper documentation and storage – streamlining & organizing the workplace	<p>PC11. Ensure that the team follows the given instructions and checks for labeling of fluids, oils, lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc.</p> <p>PC12. Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions</p> <p>PC13. Ensure that organizing the workplace takes place with due considerations to the principles of wasted motions, ergonomics, work & method study .</p>		3	10
Ensure cleaning of self and the work place	<p>PC14. Ensure that the area has floors swept, machinery clean and is generally neat and tidy. In case of cleaning, ensure that correct displays are maintained on the floor which indicate potential safety hazards</p> <p>PC15. Ensure workbenches and work surfaces are clean and in good condition</p> <p>PC16. Ensure adherence to the cleaning schedule for the lighting system to ensure proper illumination</p> <p>PC17. Ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene</p>		2	10
Ensure standardization	<p>PC18. Ensure that daily cleaning standards and schedules to create a clean working environment are followed across the plant</p> <p>PC19. Oversee that various cleaning and organizing tasks have been developed and assigned for the work area</p> <p>PC20. Ensure logical and user friendly</p>		3	10

	<p>documentation and file management for all activities across the plant and create guidelines around standardization of processes</p> <p>PC21. Ensure timely creation and sharing of the 5S checklists</p> <p>PC22. Ensure that the 5S manual are available as per the timelines</p>			
Ensure sustenance	<p>PC23. Ensure team cooperation during the audit of 5 S activities</p> <p>PC24. Ensure that workmen are periodically trained to address challenges related to 5S</p> <p>PC25. Participate actively in employee work groups on 5S and encourage team members for active participation</p> <p>PC26. Oversee that the staff/operators are trained and fully understand 5s procedures</p> <p>PC27. Ensure that all the guidelines for What to do and What not to do to build sustainability in 5S are mentioned in the 5S check lists/ work instructions and are easily searchable</p> <p>PC28. Ensure continuous training of the team members on 5S in order to increase their awareness and support implementation</p> <p>PC29. Ensure that all visual controls, notice boards, symbols etc. at the manufacturing place are created, working and are put up as per the requirement</p>		5	10
	Subtotal	35	15	50
	Total Marks	280	120	400