Automotive Skills Development Council

QUALIFICATIONS PACK - OCCUPATIONAL STANDARDS FOR AUTOMOTIVE INDUSTRY

Contents

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-Industrial Engineer (Workstation Design)

SECTOR: AUTOMOTIVE

SUB-SECTOR: MANUFACTURING

OCCUPATION: INDUSTRIAL ENGINEERING

JOB ROLE : INDUSTRIAL ENGINEER- WORKSTATION DESIGN

REFERENCE ID: ASC/Q6402

ALIGNED TO : NCO-2004/Nil

Brief Job Description: Individuals at this job need to design develop and implement the layout for the workstations used for manufacturing processes by positioning the tools, equipments and manpower along with alignment of the material flow accordingly in order to minimize both human and machine movement and ensure optimal efficiency of the human-machine combination.

Personal Attributes: This job requires the individual to work independently and be comfortable in making decisions pertaining to his/her area of work. The individual should be result oriented and be able to closely co-ordinate with the engineers working for all aspects of Process . The individual should also be able to demonstrate skills for information ordering, oral expression, mathematical

Job Details

Qualifications Pack Code	**ASC/Q 6402**		
Job Role	**Industrial Engineer –Workstation Design**		
Credits(NSQF) [*OPTIONAL*]	**TBD**	**Version number**	**1.1**
Sector	**Automotive**	**Drafted on**	**13.08.13**
Sub-sector	**Manufacturing Support**	**Last reviewed on**	**23.09.13**
Occupation	**Industrial Engineering**	**Next review date**	**30.09.15**

Job Role	**Industrial Engineer – Workstation Design**
Role Description	Applying concepts of stress analysis, ergonomics and motion economy along with simulation and modeling techniques for design , development and implementation of workstations for manufacturing processes
NSQF level	4
Minimum Educational Qualifications*	B. Tech/ BE in Industrial / Production / Mechanical Engineering
Maximum Educational Qualifications*	
Training (Suggested but not mandatory)	• Basic fundamentals training courses for stress analysis • Simulation tools usage for workstation design and development • Application of Ergonomics to Industrial Operations
Experience	minimum 4-5 years
Applicable National Occupational Standards (NOS)	**Compulsory:** ASC/N6404. Acquire information about process, equipments , manpower and identify the constraints ASC/N6405. Design the model workstation layout for the process ASC/N6406. Validate the layout through simulation and implement ASC/N0006A Maintain a safe and healthy working environment at the workplace ASC/N0021 Maintaining 5S at the work premises Optional N.A.
Performance Criteria	As described in the relevant OS units

Acronyms

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 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.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or an area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of OS.
Sub-function	Sub-functions are sub-activities essential to fulfill the achieving the objectives of the function.
Job role	Job role defines a unique set of functions that together form a unique employment 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 (OS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a 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 quality of performance required.
Knowledge and Understanding	Knowledge and understanding are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.
Organisational Context	Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical knowledge is the specific knowledge needed to accomplish specific 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. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.

Keywords /Terms	Description
NOS	National Occupational Standard(s)
NVQF	National Vocational Qualifications Framework
NSQF	National Skills Qualifications Framework
NVEQF	National Vocational Education Qualifications Framework
QP	Qualifications Pack
BO	Bought Out (Parts)
BOM	Bills of Material
SCM	Supply Chain Management
SAP	System Application and Products
CRM	Customer Relationship Management
SRM	Supplier Relationship Management
MRP	Material Requirement Planning
PPC	Production Planning and Control
SS	Strategic Sourcing
RFQ	Request for Quotation
HSE	Health , Safety and Environment
ECN/PCN	Engineering Change Note/ Process Change Note
PPAP	Production Part Approval Process
PO	Purchase Order
HIRA	Hazard Identification and Risk Assessment
TS	TS 16949 Quality Management system
APQP	Advanced Product Quality Planning
MSA	Measurement System Analysis
SPC	Statistical Process Control
NPD	New Product Development

ASC/N6404. Acquire information about process, equipments, manpower and identify the constraints

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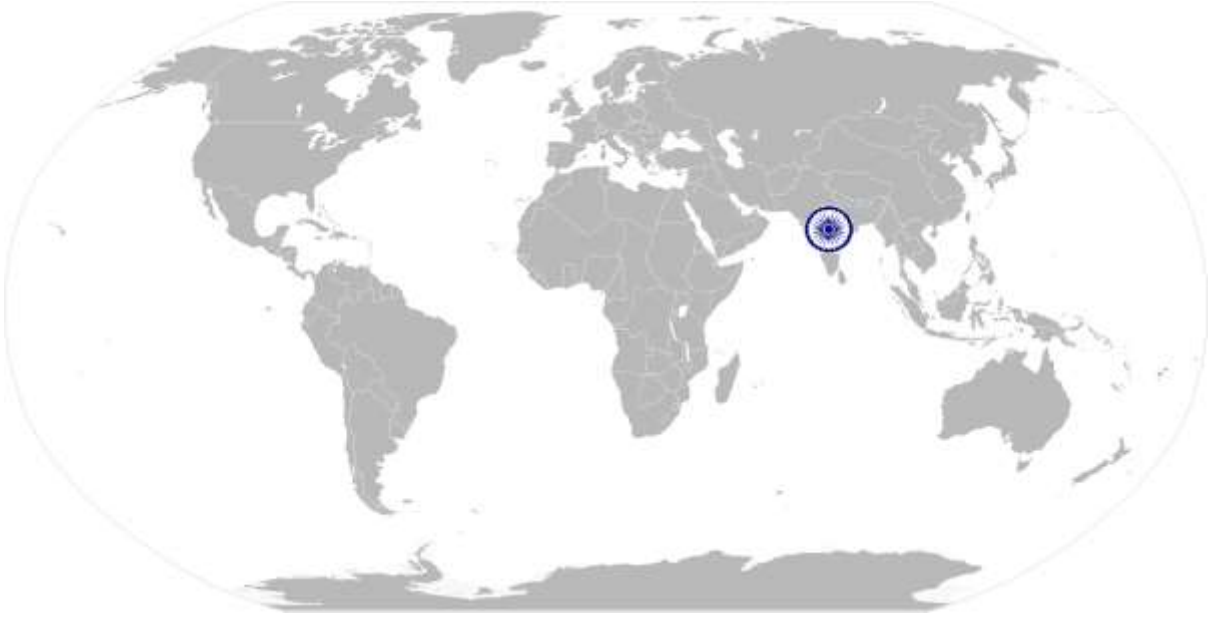
National Occupational Standards



Overview

This unit is about validation of the developed workstation model layout with the help of simulation techniques and thereby implementing the same for the process in consideration.

ASC/N6404. Acquire information about process, equipments, manpower and identify the constraints

National Occupational Standard

Unit Code	**ASC/N6404**
Unit Title (Task)	**Acquire information about process, equipments , manpower and identify the constraints**
Description	This OS unit is about the industrial engineer studying and acquiring all the information related to the process and material flow , tools, equipments and the manpower deployment along with the ergonomics being followed in order to make a model workstation layout
Scope	The unit/ task covers the following: • Analyzing the material flow of a shop floor process • Studying the tools and equipments positioning for the process • Assessing the manpower requirements and its deployment as per process • Thoroughly observing the ergonomic constraints in the process

Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Analysis of the material flow	PC1. Study in depth the process to be followed for the workstation and prepare a process chart. PC2. Interact with the shop floor workers and prepare a complete flow chart depicting the flow of material and information throughout the process and also gain knowledge about the media in use for it. PC3. Perform a time study and calculate the TAKT time of the process along with the individual cycle times of sub processes. PC4. Record all these observations for further analysis.
Study of the tools and equipments	PC5. Walk through the process at shop floor and carefully study the tools and equipments positioning layout. PC6. Then specific to workstation process , envisage the arrangement of tools and equipments in a manner that minimizes their movement for process PC7. Draft a pictorial layout of the tools and equipments positioning for the typical workstation for each process- family. PC8. Should be able to carry out this exercise at the time of NPD / capacity expansion etc . at Design / Planning stage so that improvements can be planned in advance.
Assessment of manpower requirements	PC9. Study the manpower allocation plan thoroughly and collect key insights about the workforce requirements and the nature of work being done by them PC10. Conduct a time and motion study and capture images for worker posture at

ASC/N6404. Acquire information about process, equipments, manpower and identify the constraints

	different stages of process PC11. Record the observations for further analysis.
Ergonomic constraint analysis	PC12. Thoroughly observe the workers posture and motions using motion study to identify the key ergonomic constraints of the process PC13. Record your observations for further analysis
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization & its processes)	The user/individual on the job needs to know and understand: KA1. Company manufacturing processes KA2. Existing layout for the processes KA3. Sequence of operations for each process KA4. Workstation planning methodology being followed in the company KA5. Future capacity expansions plans (if any) of the company
B. Technical Knowledge	The individual on the job needs to have knowledge of: KB1. Complete knowledge of the process in consideration KB2. Engineering drawings of existing layout KB3. Operation of machinery and equipments being used for the process KB4. Manpower deployment plan for process KB5. Material and information flow of the process KB6. Capacity utilization levels and the cost of manufacturing being incurred KB7. Media of information flow like SAP, ERP etc followed for process KB8. Ergonomic weak and strong points of the process
Skills (S) [Optional]	
A. Core Skills/ Generic Skills	**Basic reading and writing skills**
	SB1. The user/ individual on the job needs to know and understand how to: SB2. Read the information displayed at the workplace. SB3. Draft a pictorial representation of the existing process layout for better comprehension SB4. Read the engineering drawings and gather key insights for workstation designing SB5. Observe the worker posture carefully for capturing images SB6. Compile all the data related to information acquisition in form of presentations and reports
	Communication skills
	The user/individual on the job needs to know and understand how to: SB7. Communicate with shop floor workers gathering inputs/requirements SB8. Spell out effectively the findings of the study to the higher management in meetings
	Teamwork and multitasking

ASC/N6404. Acquire information about process, equipments, manpower and identify the constraints

	The user/individual on the job needs to know and understand how to: SB9. Interact with workers and gather all the information related to process requirements SB10. Share operation knowledge with co-workers SB11. Coordinate with the workstation planning/ process engineering department team and ensure timely analysis for workstation designing SB12. Collate data from various third parties involved (if any) for the workstation facilities construction
B. Professional Skills	**Plan and Organize**
	The user/individual on the job needs to know and understand how to: SB1. Plan the execution of time and motion study for getting key process information for workstation designing in an effective and on timely basis
	Critical thinking
	The user/individual on the job needs to know and understand how to: SB2. Analyze the way in which the existing process is in operation and think of more economic and feasible measures for process operation efficiency improvement through a workstation designing/modification

ASC/N6404. Acquire information about process, equipments, manpower and identify the constraints

NOS Code	ASC/N6404		
Credits(NSQF) [*OPTIONAL*]	TBD	Version number	1.0
Industry	Automotive	Drafted on	13.08.13
Industry Sub-sector	Manufacturing Support	Last reviewed on	23.09.13
Occupation	Industrial Engineering	Next review date	30.09.15

NOS Version Control

ASC/N6405. Design the model workstation layout for the process

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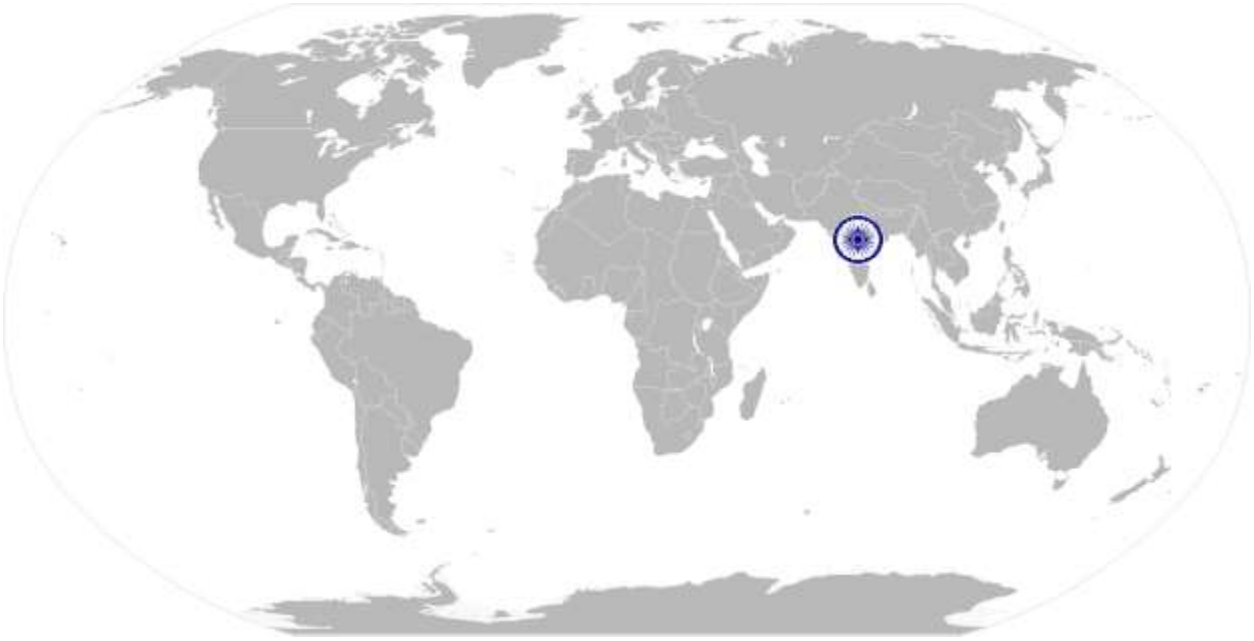
National Occupational Standards



Overview

This unit is about workstation layout designing and modeling based on the inputs from process information acquisition and time motion study in order to develop a safe, convenient and economic workstation.

ASC/N6405. Design the model workstation layout for the process

National Occupational Standard

Unit Code	**ASC/N6405**
Unit Title (Task)	**Design the model workstation layout for the process**
Description	This OS unit is about the industrial engineer drafting , designing and developing the model workstation layout for the process in consideration ensuring minimization of human effort involved and achieve optimal economic and ergonomic efficiency
Scope	The unit/ task covers the following: • Assessment of the effect of various factors on the worker employed for process • Developing a workstation model through software • Uploading captured images during motion study in computers and creating a virtual worker in computer based on the images dimensions • Transferring the virtual worker to the workstation model in computer and creating environment for simulation

Performance Criteria(PC) w.r.t. the Scope	
Element	**Performance Criteria**
Assessment of each factor on posture	PC1. Using Design of Experiments (DOE) computer software , assess the effect of three factors namely , the working height , working position and tool on the worker posture PC2. Based on the time and motion study conducted earlier , conduct another study with the help of two most experienced workers during which the above three factors are varied one by one and same sequence of process steps are followed PC3. Record all the observations related to cycle time for each process step for further analysis
Development of model workstation layout	PC4. Develop a model workstation based on the existing dimensions using software ,e.g. CATIA or co-ordinate with process design engineer responsible for the activity
Virtual worker creation	PC5. Based on the captured posture images , calculate the various ergonomic worker dimensions like the neck angle , arm angle , trunk angle etc. PC6. Use the dimensions of the uploaded worker images to calculate the body dimensions of the virtual worker PC7. Based on the body dimensions , create a virtual worker in software e.g. RULA
Simulation environment creation	PC8. Transfer the computerized workstation model into software e.g. RULA PC9. Position the virtual worker in the workstation model in software in such a way that a complete virtual workstation is prepared

ASC/N6405. Design the model workstation layout for the process

Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization & its processes)	The user/individual on the job needs to know and understand: KA1. Company manufacturing processes KA2. Existing layout for the processes KA3. Workstation Designing standards followed in the organization KA4. Third parties (if any) involved in construction of workstations for the organization KA5. Workstation planning methodology being followed in the company
B. Technical Knowledge	The individual on the job needs to have knowledge of: KB1. Complete knowledge of the process in consideration KB2. Engineering drawings of existing workstation layout KB3. Operation of machinery and equipments being used for the process KB4. Complete knowledge of material and information flow for the process KB5. All the latest software tools like CATIA, RULA etc. for designing KB6. All the geometric ergonomic worker dimensions knowledge and its calculation procedure

Skills (S) [Optional]	
A. Core Skills/ Generic Skills	**Basic reading and writing skills**
	The user/ individual on the job needs to know and understand how to: SA1. Understand the drawings of layout SA2. Observe the worker posture images and envisage the ergonomic constraints SA1. Compile all the data related to workstation layout design and development in form of reports and presentations
	Communication skills
	The user/individual on the job needs to know and understand how to: SA2. Communicate the new workstation layout design and development to the higher management in meetings for their support
	Teamwork and multitasking
	The user/individual on the job needs to know and understand how to: SA3. Interact with workers and conduct the time and motion study in an effective manner SA4. Coordinate with the workstation planning department team and ensure workstation model layout designing on timely basis SA3. Collate resources from various third parties involved (if any) for the facility layout implementation
B. Professional Skills	**Plan and Organize**
	The user/individual on the job needs to know and understand how to: SB1. Plan the execution of workstation layout design and development in an effective manner and on timely basis SB2. Plan & Co-ordinate simultaneous working with process engineering team

ASC/N6405. Design the model workstation layout for the process

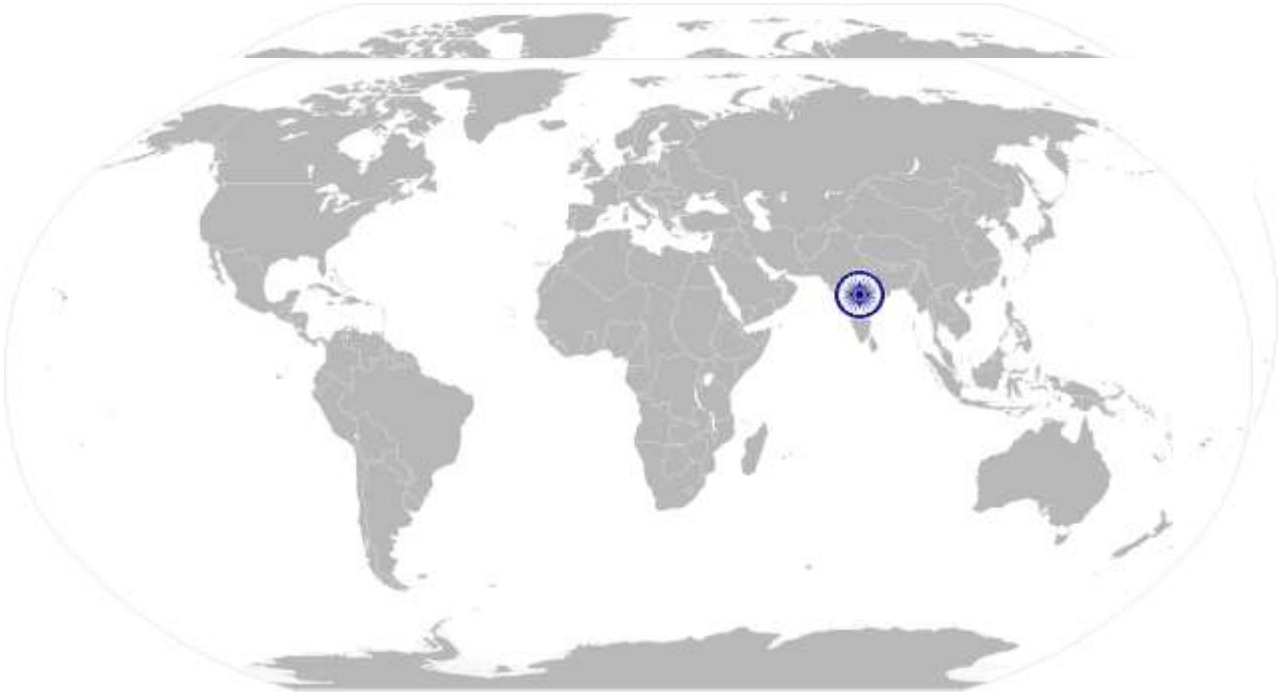
	members for NPD and CI projects.
	Critical thinking
	The user/individual on the job needs to know and understand how to: SB3. Analyze the ergonomic geometry to identify the points of improvement and take suitable measures for addressing the same in the new workstation model
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB1. Assess the problem, evaluate the possible solution(s) and use an optimum /best possible solution(s) SB2. Identify immediate or temporary solutions to resolve delays and crisis situations
	Reflective thinking
	The user/individual on the job needs to know and understand: SB3. How to learn from past mistakes to resolve technical and non-technical problems

ASC/N6405. Design the model workstation layout for the process

NOS Version Control

NOS Code	**ASC/N6405**		
Credits(NSQF) [*OPTIONAL*]	**TBD**	**Version number**	**1.0**
Industry	**Automotive**	**Drafted on**	**13.08.13**
Industry Sub-sector	**Manufacturing Support**	**Last reviewed on**	**23.09.13**
Occupation	**Industrial Engineering**	**Next review date**	**30.09.15**

National Occupational Standards



Overview

This unit is about the arrangement of manpower, equipments, machinery and other resources to facilitate the implementation of the newly designed layout for the process in consideration.

National Occupational Standard

ASC/N 6406 Validate the layout through simulation& implement

Unit Code	ASC/N6406
Unit Title (Task)	**Validate the layout through simulation and implement**
Description	This OS unit is about the industrial engineer validating the developed workstation model through simulation techniques and implementing the finalized layout at shop floor for the process in consideration
Scope	This unit/ task covers the following: • Validating the workstation model through simulation • Implementation of the new layout
Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Validation through simulation	PC1. Vary the three parameters namely the working height , working position and tool or equipment positioning one by one in form of sets and run the simulation in software e.g. RULA for the virtual workstation. PC2. Observe the variation in each set and by a method of trial and error , finalize the best workstation dimensions keeping in mind convenience and ergonomics
Implementation of new layout	PC3. Implement / co-ordinate with the team for new workstation layout as per the finalized model following the protocol of the organization for facilitating the physical construction of the workstation. PC4. Monitor the functioning of newly constructed workstation on a periodic basis and sort out the discrepancies arising during same
Knowledge and Understanding (K) w.r.t. the scope	
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. Company manufacturing processes KA2. Existing layout for the processes KA3. Workstation Designing standards followed in the organization KA4. Third parties (if any) involved in construction of workstations for the organization
B. Technical Knowledge	The individual on the job needs to have knowledge of: KB1. Complete knowledge of the process in consideration KB2. Engineering drawings of existing workstation layout KB3. Operation of machinery and equipments being used for the process KB4. Complete knowledge of material and information flow for the process KB5. All the latest software tools like CATIA, RULA etc. for designing and simulation KB6. All the geometric ergonomic worker dimensions knowledge and its calculation procedure KB7. Hazards' assessment of risks & impact KB8. Introduction to TS 16949

ASC/N 6406 Validate the layout through simulation& implement

	KB9. Complete Knowledge of APQP
Skills (S) w.r.t. the scope	
Element	**Skills**
A. Core Skills/ Generic Skills	**Reading and Writing skills**
	The user/ individual on the job needs to know and understand how to: SA1. Understand the drawings of workstation layout SA2. Observe the worker posture during simulation and envisage the ergonomic constraints SA1. Compile all the data related to workstation layout design and development in form of reports and presentations
	Communication skills
	The user/individual on the job needs to know and understand how to: SA2. Communicate the new workstation layout design and development to the higher management in meetings for their support SA3. Communicate with design and validation team members of process engineering for simultaneous working.
	Team work and multi tasking
	The user/individual on the job needs to know and understand how to: SA4. Interact with workers and conduct the time and motion study in an effective manner SA5. Coordinate with the workstation planning/ process engineering department team and ensure workstation model layout designing on timely basis SA6. Collate resources from various third parties involved (if any) for the facility layout implementation
B. Professional Skills	**Plan & Organize**
	The user/individual on the job needs to know and understand how to: SB1. Plan the execution of workstation layout simulation and implementation in an effective manner and on timely basis
	Critical thinking
	The user/individual on the job needs to know and understand how to: SB2. Analyze the implementation of the finalized workstation layout design and think of measures to resolve the issues arising after same
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB3. Assess the problem, evaluate the possible solution(s) and use an optimum /best possible solution(s) SB4. Identify immediate or temporary solutions to resolve delays and crisis situations
	Reflective thinking
	The user/individual on the job needs to know and understand:

ASC/N 6406 Validate the layout through simulation& implement

	SB5. How to learn from past mistakes to resolve technical and non-technical problems

NOS Code	**ASC/N6406**		
Credits(NSQF)	**TBD**	**Version number**	**1.0**
Industry	**Automotive**	**Drafted on**	**13.08.13**
Industry Sub-sector	**Manufacturing Support**	**Last reviewed on**	**23.09.13**
Occupation	**Industrial Engineering**	**Next review date**	**30.09.15**

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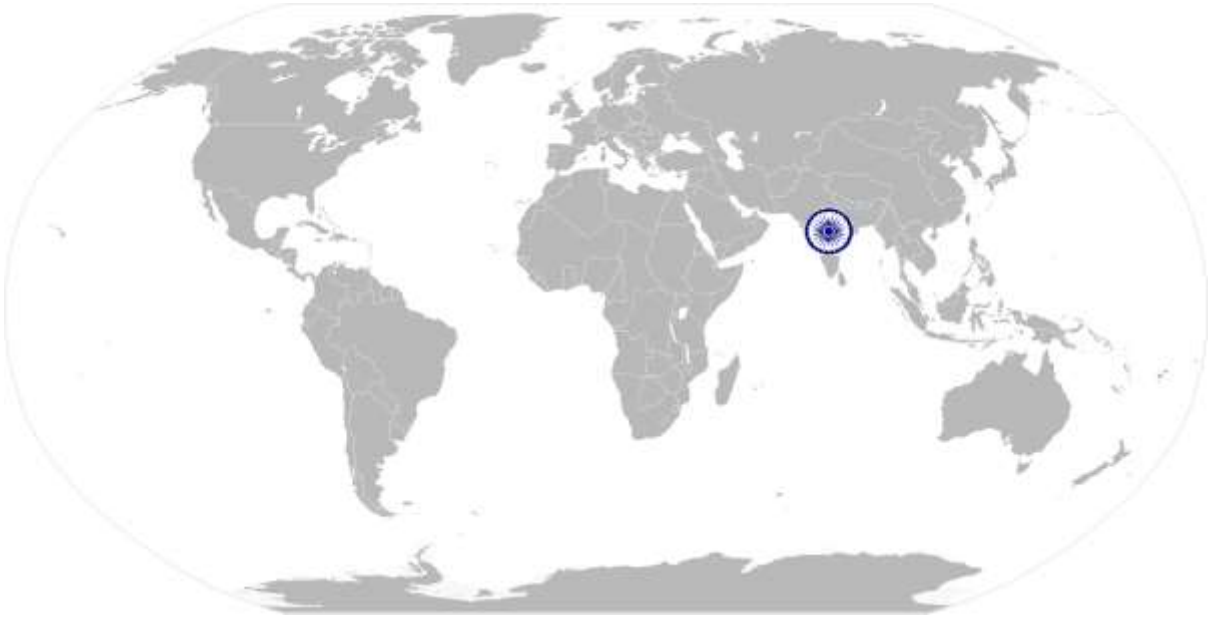
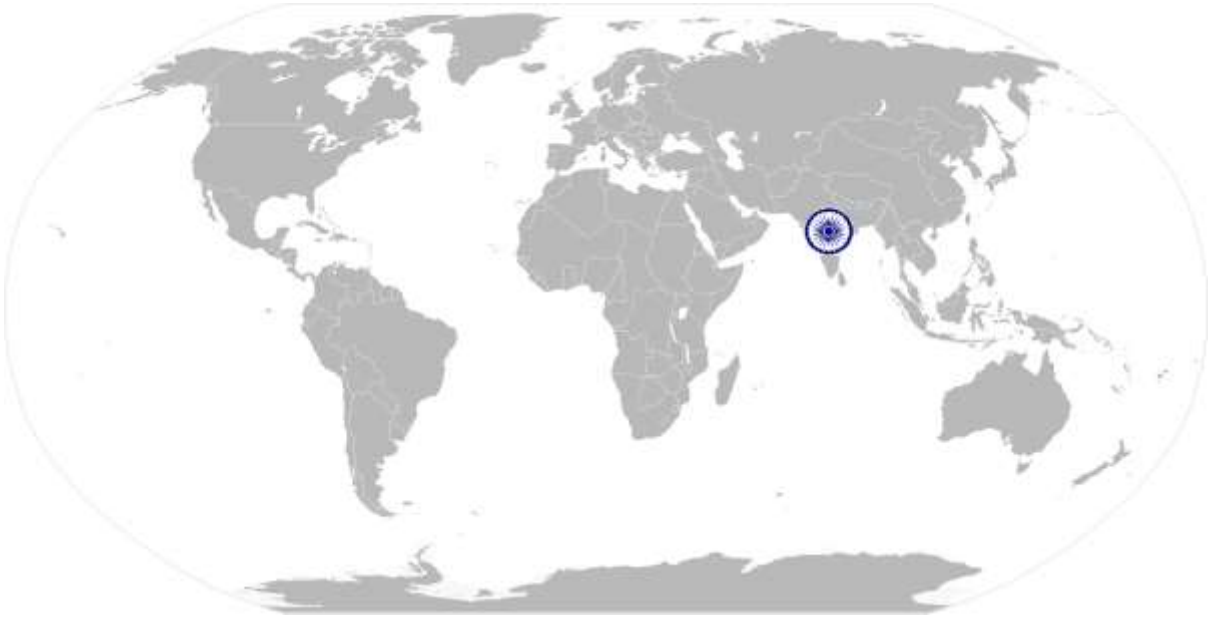


National Occupational Standards



Overview

This unit is about establishing a Safe, Healthy and Environment friendly workplace at the organization shop floor

ASC/N 0006 Maintain a healthy, safe and secure working environment

National Occupational Standard

Unit Code	ASC/N0006A
Unit Title (Task)	**Maintain a safe and healthy working environment at the work place**
Description	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
Scope	The role holder will be responsible for • identifying and reporting of risks • creating and sustaining a safe, clean and environment friendly work place This NOS will be applicable to all Automotive sector manufacturing job roles
Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Identify and report the risks identified	PC1. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise PC2. Identify areas in the plant which are potentially hazardous/ unhygienic in nature PC3. Conduct regular checks on machine health to identify potential hazards due to wear and tear of machine PC4. Inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc PC5. Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations PC6. Create awareness amongst other by sharing information on the identified risks
Create and sustain a Safe, clean and environment friendly work place	PC7. Support the Safety team and the supervisor in creating the risk mitigation plan PC8. Follow the instructions given on the equipment manual describing the operating process of the equipments PC9. Follow the Safety, Health and Environment related practices developed by the organization PC10. Operate the machine using the recommended Personal Protective Equipments (PPE) and ensure team members also use the related PPEs at the workplace PC11. Maintain a clean and safe working environment near the work place and ensure there is no spillage of chemicals, production waste, oil, solvents etc PC12. Attend all safety and fire drills to be self aware of safety hazards and preventive techniques PC13. Maintain high standards of personal hygiene at the work place

ASC/N 0006 Maintain a healthy, safe and secure working environment

	PC14. Ensure that the waste disposal is done in the designated area and manner as per organization SOP. PC15. Inform appropriately 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
Knowledge and Understanding (K) w.r.t. the scope	
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. basic knowledge of various types of PPEs and their usage KB3. basic knowledge of risks/hazards associated with each occupation in the organization KB4. knowledge of personal hygiene and how an individual an 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
	Reading Skills
	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
	Oral Communication (Listening and Speaking skills)
	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. Professional Skills	**Judgmental Thinking**
	The user/individual on the job needs to know and understand how to:

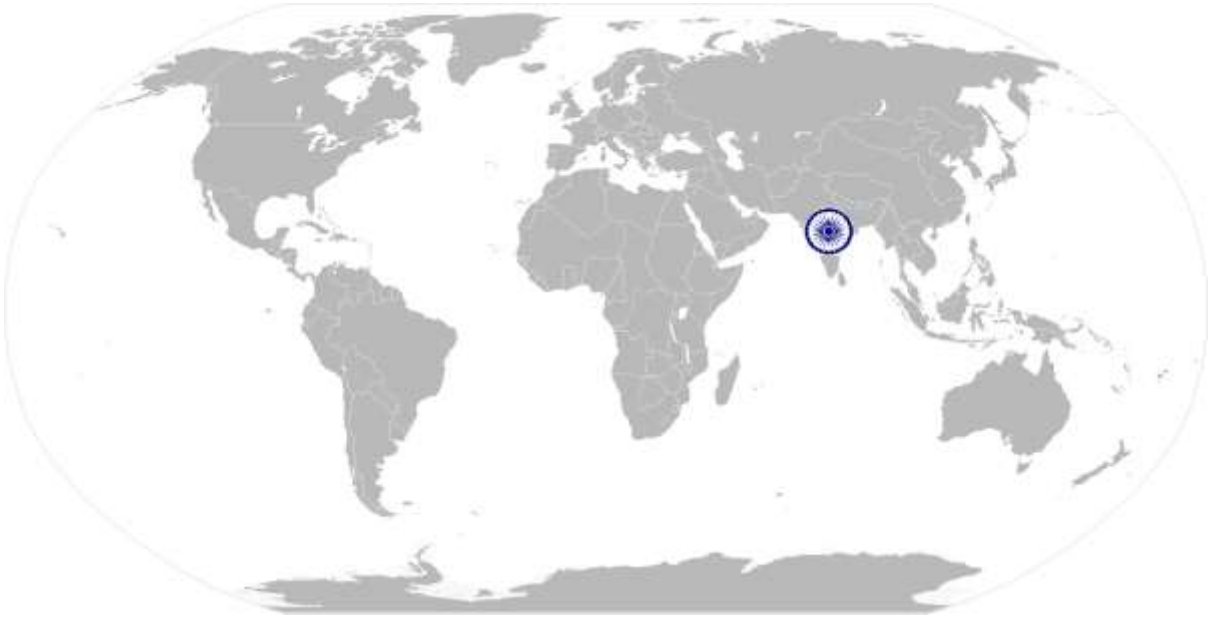
ASC/N 0006 Maintain a healthy, safe and secure working environment

SB1. use common sense and make judgments during day to day basis
SB2. use reasoning skills to identify and resolve basic problems

NOS Version Control

NOS Code	**ASC/N0006A**		
Credits(NSQF)	**TBD**	**Version number**	**1**
Industry	**Automotive**	**Drafted on**	**15/08/2013**
Industry Sub-sector	**Manufacturing**	**Last reviewed on**	**25/08/2013**
Occupation	**All**	**Next review date**	**25/08/2015**

ASC/N 0006 Maintain a healthy, safe and secure working environment



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/N 0021. Maintain 5 S activities in the work premises

National Occupational Standard

Unit Code	ASC/N0021
Unit Title (Task)	**Maintaining 5S in the work premises**
Description	This NOS is about ensuring all 5 S activities both at the shop floor and the office area to facilitate increase in work productivity
Scope	The individual needs to • Ensure sorting, streamlining & organizing, storage and documentation, cleaning, standardization and sustenance across the plant and office premises of the organization
Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Ensure sorting	PC1. Follow the sorting process and check that the tools, fixtures & jigs that are lying on workstations are the ones in use and un-necessary items are not cluttering the workbenches or work surfaces. PC2. Ensure segregation of waste in hazardous/ non Hazardous waste as per the sorting work instructions PC3. Follow the technique of waste disposal and waste storage in the proper bins as per SOP PC4. Segregate the items which are labelled as red tag items for the process area and keep them in the correct places 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
Ensure proper documentation and storage (organizing , streamlining)	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 labelling of fluids, oils. lubricants, solvents, chemicals etc. and proper storage of the same to avoid spillage, leakage, fire etc.

ASC/N 0021. Maintain 5 S activities in the work premises

	PC13. Make sure that all material and tools are stored in the designated places and in the manner indicated in the 5S instructions
Ensure cleaning of self and the work place	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 & 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
Ensure sustenance	PC1. Follow the daily cleaning standards and schedules to create a clean working environment PC2. Attend all training programs for employees on 5 S PC3. Support the team during the audit of 5 S PC4. Participate actively in employee work groups on 5S and encourage team members for active participation PC5. 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
Knowledge and Understanding (K) w.r.t. the scope	
Element	**Knowledge and Understanding**
C. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA3. relevant standards, procedures and policies related to 5S followed in the company
D. Technical Knowledge	The user/individual on the job needs to : KB5. have basic knowledge of 5S procedures KB6. know various types 5s practices followed in various areas KB7. understand the 5S checklists provided in the department/ team KB8. have skills to identify useful & non useful items KB9. have knowledge of labels , signs & colours used as indicators KB10. Have knowledge on how to sort and store various types of tools, equipment, material etc. KB11. know , how to identify various types of waste products KB12. understand the impact of waste/ dirt/ dust/unwanted substances

ASC/N 0021. Maintain 5 S activities in the work premises

	on the process/ environment/ machinery/ human body KB13. have knowledge of best ways of cleaning & waste disposal KB14. understand the importance of standardization in processes KB15. understand the importance of sustainability in 5S KB16. have knowledge of TQM process KB17. have knowledge of various materials and storage norms KB18. understand visual controls, symbols, graphs etc.
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: 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
	Reading Skills
	The user/individual on the job needs to know and understand how to: SA11. read 5S instructions put up across the plant premises
	Oral Communication (Listening and Speaking skills)
	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. Professional Skills	**Judgmental Thinking**
	The user/individual on the job needs to know and understand how to: SB3. use common sense and make judgments during day to day basis SB4. use reasoning skills to identify and resolve basic problems using 5S
	Persuasion
	The user/ individual on the jobs needs to know and understand how to: SB5. persuade co team members to follow 5 S SB6. ensure that the co team members understand the importance of using 5 S tool
	Creativity

ASC/N 0021. Maintain 5 S activities in the work premises

	The user/individual on the job needs to know and understand how to : SB7. use innovative skills to perform and manage 5 S activities at the work desk and the shop floor SB8. exhibit inquisitive behaviour to seek feedback and question on the existing set patterns of work
	Self –Discipline
	The user/individual on the job needs to know and understand how to: SB9. do what is right, not what is a popular practices SB10. follow shop floor rules & regulations and avoid deviations; make 5S an integral way of life SB11. ensure self-cleanliness on a daily basis SB12. demonstrate the will to keep the work area in a clean and orderly manner

NOS Version Control

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