

Qualification Pack



Modeller

QP Code: ASC/Q8101

Version: 1.0

NSQF Level: 5

Automotive Skills Development Council || Automotive Skills Development Council, Sat Paul Mittal Building, 1/6, Siri Institutional Area
August Kranti Marg (Khel Gaon Marg) New Delhi - 110049

Qualification Pack

Contents

ASC/Q8101: Modeller	3
<i>Brief Job Description</i>	3
Applicable National Occupational Standards (NOS)	3
<i>Compulsory NOS</i>	3
<i>Qualification Pack (QP) Parameters</i>	3
ASC/N0006: Maintain a safe and healthy working environment	5
ASC/N0022: Ensure implementation of 5S activities at the shop floor & the office area	10
ASC/N8101: Complete all modelling activities based on the rendered sketch	18
Assessment Guidelines and Weightage	25
<i>Assessment Guidelines</i>	25
<i>Assessment Weightage</i>	25
Acronyms	27
Glossary	28

ASC/Q8101: Modeller

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 modellers 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

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [ASC/N0006: Maintain a safe and healthy working environment](#)
2. [ASC/N0022: Ensure implementation of 5S activities at the shop floor & the office area](#)
3. [ASC/N8101: Complete all modelling activities based on the rendered sketch](#)

Qualification Pack (QP) Parameters

Sector	Automotive
Sub-Sector	Research & Development
Occupation	Product Design
Country	India
NSQF Level	5
Aligned to NCO/ISCO/ISIC Code	NCO-2015/2144.0802

Qualification Pack

Minimum Educational Qualification & Experience	B.E./B.Tech (in Automobile/Mechanical/Mechatronics, for Digital Data and Mock Up) with 3-5 years of experience R&D automobile modelling activities OR Graduate (in fine arts and sculpturing) with 3-5 years of experience R&D automobile modelling activities
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	CAD/ CAE System Application Clay Modelling Training on fine arts, sculptures, hand skills I-DEAS Software application Milling Operations of CNC machine, SPMs Latest trends in the automotive industry Training on ergonomics Problem solving Safety & 5S
Minimum Job Entry Age	18 Years
Last Reviewed On	20/01/2014
Next Review Date	30/06/2020
Deactivation Date	30/06/2020
NSQC Approval Date	05/08/2015
Version	1.0

Qualification Pack

ASC/N0006: 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

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

Elements and Performance Criteria

Identify and report the risks identified

To be competent, the user/individual on the job must be able to:

- PC1..** Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise
- PC2.** Inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc
- PC3.** Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations
- PC4.** Create awareness amongst other by sharing information on the identified risks

Create and sustain a Safe, clean and environment friendly work place

To be competent, the user/individual on the job must be able to:

- PC5..** Follow the instructions given on the equipment manual describing the operating process of the equipments
- PC6..** Follow the Safety, Health and Environment related practices developed by the organization
- PC7.** Operate the machine using the recommended Personal Protective Equipments (PPE)
- PC8. .** Maintain a clean and safe working environment near the work place and ensure there is no spillage of chemicals, production waste, oil, solvents etc
- PC9.** Maintain high standards of personal hygiene at the work place
- PC10.** Ensure that the waste disposal is done in the designated area and manner as per organization SOP.
- PC11.** Inform appropriately the medical officer/ HR in case of self or an employees illness of contagious nature so that preventive actions can be planned for others

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant standards, procedures and policies related to Health, Safety and Environment followed in the company

Qualification Pack

- KU2.** basic knowledge of Safety procedures(fire fighting, first aid) within the organization
- KU3.** knowledge of various types of PPEs and their usage
- KU4.** basic knowledge of risks/hazards associated with each occupation in the organization
- KU5.** how to safely operate various tools and machines and risks associated with the tools/ equipment
- KU6.** knowledge of personal hygiene and how an individual can contribute towards creating a highly safe and clean working environment

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write basic level notes and observations
- GS2.** read safety instructions put up across the plant premises
- GS3.** read safety precautions mentioned in equipment manuals and panels to understand the potential risks associated
- GS4.** effectively communicate information to team members
- GS5.** inform employees in the plant and concerned functions about events, incidents & potential risks observed related to Safety, Health and Environment.
- GS6.** question operator/ supervisor in order to understand the safety related issues
- GS7.** attentively listen with full attention and comprehend the information given by the speaker during safety drills and training programs
- GS8.** use common sense and make judgments during day to day basis
- GS9.** use reasoning skills to identify and resolve basic problems
- GS10.** use common sense and make judgments during day to day basis
- GS11.** use reasoning skills to identify and resolve basic problems

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Identify and report the risks identified</i>	8	23	-	-
PC1.. Identify activities which can cause potential injury through sharp objects, burns, fall, electricity, gas leakages, radiation, poisonous fumes, chemicals ,loud noise	3	6	-	-
PC2. Inform the concerned authorities about the potential risks identified in the processes, workplace area/ layout, materials used etc	2	6	-	-
PC3. Inform the concerned authorities about machine breakdowns, damages which can potentially harm man/ machine during operations	2	6	-	-
PC4. Create awareness amongst other by sharing information on the identified risks	1	5	-	-
<i>Create and sustain a Safe, clean and environment friendly work place</i>	17	52	-	-
PC5.. Follow the instructions given on the equipment manual describing the operating process of the equipments	3	7	-	-
PC6.. Follow the Safety, Health and Environment related practices developed by the organization	3	8	-	-
PC7. Operate the machine using the recommended Personal Protective Equipments (PPE)	3	8	-	-
PC8. . Maintain a clean and safe working environment near the work place and ensure there is no spillage of chemicals, production waste, oil, solvents etc	2	8	-	-
PC9. Maintain high standards of personal hygiene at the work place	2	7	-	-
PC10. Ensure that the waste disposal is done in the designated area and manner as per organization SOP.	3	8	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. Inform appropriately the medical officer/ HR in case of self or an employees illness of contagious nature so that preventive actions can be planned for others	1	6	-	-
NOS Total	25	75	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0006
NOS Name	Maintain a safe and healthy working environment
Sector	Automotive
Sub-Sector	Manufacturing
Occupation	Maintenance
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	15/09/2013
Next Review Date	15/09/2015
NSQC Clearance Date	20/07/2015

Qualification Pack

ASC/N0022: 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 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

Elements and Performance Criteria

Ensure proper sorting of items at the work place

To be competent, the user/individual on the job must be able to:

- 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

To be competent, the user/individual on the job must be able to:

- 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

Qualification Pack

- PC13.** ensure that organizing the workplace takes place with due considerations to the principles of wasted motions, ergonomics, work & method study .

Ensure cleaning of self and the work place

To be competent, the user/individual on the job must be able to:

- 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
- PC15..** ensure workbenches and work surfaces are clean and in good condition
- PC16..** ensure adherence to the cleaning schedule for the lighting system to ensure proper illumination
- PC17..** ensure all recyclable materials are put in designated containers

Ensure standardization

To be competent, the user/individual on the job must be able to:

- PC18.** ensure that daily cleaning standards and schedules to create a clean working environment are followed across the plant
- PC19..** ensure all recyclable materials are put in designated containers
- PC20. .** ensure logical and user friendly documentation and file management for all activities across the plant and create guidelines around standardization of processes
- PC21.** ensure timely creation and sharing of the 5s checklists
- PC22.** ensure that the 5s manual are available as per the timelines

Ensure sustenance

To be competent, the user/individual on the job must be able to:

- PC23.** ensure team cooperation during the audit of 5 s activities
- PC24.** ensure that workmen are periodically trained to address challenges related to 5s
- PC25..** participate actively in employee work groups on 5s and encourage team members for active participation
- PC26..** oversee that the staff/operators are trained and fully understand 5s procedures
- 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
- PC28.** ensure continuous training of the team members on 5s in order to increase their awareness and support implementation
- 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

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant standards, procedures and policies related to 5S followed in the company
- KU2.** have basic knowledge of 5S procedures
- KU3.** know various types 5s practices followed in various areas
- KU4.** understand the 5S checklists provided in the department/ team
- KU5.** have skills to identify useful & non useful items

Qualification Pack

- KU6.** have knowledge of labels , signs & colours used as indicators
- KU7.** Have knowledge on how to sort and store various types of tools,equipment, material etc
- KU8.** know , how to identify various types of waste products
- KU9.** understand the impact of waste/ dirt/ dust/unwantedsubstances on the process/ environment/ machinery/ humanbody
- KU10.** have knowledge of best and environment protective ways ofcleaning & waste disposal
- KU11.** understand the importance of standardization in processes
- KU12.** understand the importance of sustainability in 5S
- KU13.** have knowledge of TQM process
- KU14.** have knowledge of various materials and storage norms
- KU15.** understand visual controls, symbols, graphs etc

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write basic level notes and observations
- GS2.** note down observations (if any) related to the process
- GS3.** write information documents to internal departments/ internal teams
- GS4.** read 5S instructions put up across the plant premises
- GS5.** effectively communicate information to team members inform employees in the plant and concerned functions about 5S
- GS6.** question the process head in order to understand the 5S related issues
- GS7.** attentively listen with full attention and comprehend the information given by the speaker during 5S training programs
- GS8.** use common sense and make judgments during day to day basis
- GS9.** use reasoning skills to identify and resolve basic problems using 5S
- GS10.** persuade team members to follow 5 S
- GS11.** ensure that the team members understand the importance of using 5 S tool
- GS12.** use innovative skills to perform and manage 5 S activities at the work desk and the shop floor
- GS13.** 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
- GS14.** do what is right, not what is a popular practice
- GS15.** follow shop floor rules& regulations and avoid deviations
- GS16.** lead by example in the plant premises while performing activities related to 5S
- GS17.** ensure self-cleanliness on a daily basis
- GS18.** demonstrate the will to keep the work area in a clean and orderly manner
- GS19.** accept additional responsibility for self and the team
- GS20.** encourage self and other to take greater responsibilities for managing 5S
- GS21.** identify obstacles and bottlenecks in the process and find basic level solutions for removing these obstacles

Qualification Pack

- GS22.** use previous experience in resolving problems and taking decisions
- GS23.** make timely and independent decisions on the line/ shift within the boundaries of the delegation matrix of the organization

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure proper sorting of items at the work place</i>	10	25	-	-
PC1.. ensure all recyclable materials are put in designated containers	1	2.5	-	-
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	1	2.5	-	-
PC3. ensure that the operators and other team members are segregating the waste in hazardous/ non hazardous waste as per the sorting work instructions	1	2.5	-	-
PC4. ensure that all the operators are following the technique of waste disposal and waste storage in the designated bins	1	2.5	-	-
PC5.. segregate the items which are labelled at red tag items for the process area and keep them in the correct places	1	2.5	-	-
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	1	2.5	-	-
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	1	2.5	-	-
PC8. . oversee removal of unnecessary equipment, storage, furniture, unneeded inventory, supplies, parts and material	1	2.5	-	-
PC9. ensure that areas of material storage areas are not overflowing	1	2.5	-	-
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	1	2.5	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure proper documentation and storage - streamlining & organizing the workplace</i>	3	7.5	-	-
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	1	2.5	-	-
PC12. make sure that all material and tools are stored in the designated places and in the manner indicated in the 5s instructions	1	2.5	-	-
PC13. ensure that organizing the workplace takes place with due considerations to the principles of wasted motions, ergonomics, work & method study .	1	2.5	-	-
<i>Ensure cleaning of self and the work place</i>	4	10	-	-
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	1	2.5	-	-
PC15.. ensure workbenches and work surfaces are clean and in good condition	1	2.5	-	-
PC16.. ensure adherence to the cleaning schedule for the lighting system to ensure proper illumination	1	2.5	-	-
PC17.. ensure all recyclable materials are put in designated containers	1	2.5	-	-
<i>Ensure standardization</i>	5	12.5	-	-
PC18. ensure that daily cleaning standards and schedules to create a clean working environment are followed across the plant	1	2.5	-	-
PC19.. ensure all recyclable materials are put in designated containers	1	2.5	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC20. . ensure logical and user friendly documentation and file management for all activities across the plant and create guidelines around standardization of processes	1	2.5	-	-
PC21. ensure timely creation and sharing of the 5s checklists	1	2.5	-	-
PC22. ensure that the 5s manual are available as per the timelines	1	2.5	-	-
<i>Ensure sustenance</i>	7	16	-	-
PC23. ensure team cooperation during the audit of 5 s activities	1	2.5	-	-
PC24. ensure that workmen are periodically trained to address challenges related to 5s	1	2.5	-	-
PC25.. participate actively in employee work groups on 5s and encourage team members for active participation	1	2	-	-
PC26.. oversee that the staff/operators are trained and fully understand 5s procedures	1	2	-	-
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	1	2.5	-	-
PC28. ensure continuous training of the team members on 5s in order to increase their awareness and support implementation	1	2	-	-
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	1	2.5	-	-
NOS Total	29	71	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0022
NOS Name	Ensure implementation of 5S activities at the shop floor & the office area
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	6
Credits	TBD
Version	1.0
Last Reviewed Date	15/03/2014
Next Review Date	15/03/2016
NSQC Clearance Date	

Qualification Pack

ASC/N8101: Complete all modelling activities based on the rendered sketch

Description

This NOS is about completing all modelling activities based on rendered sketch

Scope

The modeller will be responsible for: Digital Data Creation of a physical clay model Creating a Mock-up 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

Elements and Performance Criteria

Digital Data

To be competent, the user/individual on the job must be able to:

- 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

Creation of a physical clay mode

To be competent, the user/individual on the job must be able to:

- 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

Creating a MockUp

To be competent, the user/individual on the job must be able to:

- PC13..** create a full sized mock-up of the final design with the use of 3 and 5 axis CNC milling machine

Qualification Pack

- PC14..** ensure wide range of material such plastics, wood, metal, fabrics and others in creation of a mock-up
- PC15..** ensure that the mock-up created helps understand aspects related to spaciousness, feel of the cabin, cabin accessibility, visibility and overall visual friendliness
- PC16..** ensure understanding of the engineering drawing & CNC machine operations

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** relevant manufacturing standards and procedures followed in the company
- KU2.** different types of products manufactured by the company
- KU3.** organization methodology/ procedures used for product design
- KU4.** management of product design as per the procedures defined by the organization
- KU5.** quality norms and standards prescribed in the Quality Manual by the organization
- KU6.** 5S and Safety norms practiced in the organization
- KU7.** fine arts, sculpturing and hand skills for clay modelling
- KU8.** fundamentals of machines and mechanics
- KU9.** application of relevant principles of functionality, ergonomics, aesthetics etc
- KU10.** mixing of raw material for sculpturing/ modelling
- KU11.** uniform application of raw material
- KU12.** knowledge of different materials/ chemical process used in product design
- KU13.** latest technologies in auto industry
- KU14.** latest regulations in auto industry
- KU15.** basic Arithmetic and calculation methods for tolerance limits
- KU16.** metallurgical properties of metals used for different processes
- KU17.** the methods of using instruments like Vernier callipers, Micrometres, rulers and other inspection tools
- KU18.** how to read and interpret sketches and engineering drawings
- KU19.** how to visually represent the final product output and hence decide on the key steps to be followed

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** document information from the manuals, discussion notes, process charts etc.
- GS2.** create small notes/ work documents/ diagrams for operators and helpers to help them understand the process
- GS3.** write inter departmental notes/ memos or make suitable entries in the online system
- GS4.** read equipment manuals and process documents to understand the equipment and processes better

Qualification Pack

- GS5.** read internal information memos sent by internal customers (other functions within the organization)
- GS6.** discuss task lists, schedules, and work-loads with the team members
- GS7.** answer the queries raised by the team as well as intercompany departments
- GS8.** attentively listen with full attention the queries and grievances raised by the team and comprehend the information given by the speaker
- GS9.** break the problem into smaller issues and tasks to arrive at a solution
- GS10.** understand inter process relationship and establish relationship between various parts of the problem
- GS11.** leverage experience to find effective solutions to problems
- GS12.** use organizations analytical tools to arrive at solutions
- GS13.** plan, organize and prioritize the work with Engineering /R & D, Marketing department
- GS14.** organize information, standards manuals etc. so that sorting becomes easy
- GS15.** reorganize resources in case of change of plans
- GS16.** use common sense and make judgments during day to day basis
- GS17.** use reasoning skills to identify and resolve problems
- GS18.** use intuition to detect any potential problems which could arise during operations
- GS19.** accept additional responsibility for self and the team
- GS20.** encourage self and other to take greater responsibilities
- GS21.** identify obstacles and bottlenecks in the process and on own find basic level solutions for removing these obstacles
- GS22.** gather information skilfully from multiple sources
- GS23.** analyse information in depth and identifies the problem in a timely manner
- GS24.** develop alternate solutions and resolves problems in early stages
- GS25.** work tireless in spite of repeat activities in a diligent manner to resolve problems on a day to day basis
- GS26.** use previous experience in resolving problems and taking decisions
- GS27.** make timely and independent decisions within the boundaries of the delegation matrix of the organization
- GS28.** clearly establish a goal for self or others to accomplish
- GS29.** without instructions from the manager, self-manage the work
- GS30.** take additional responsibilities to make sure that the work is completed on time
- GS31.** identify the needs of the customer
- GS32.** ensure that the product designed meets the expectation of the customer
- GS33.** understands importance of customer feedback and drives customer focus
- GS34.** familiarise with leading practices available in the market
- GS35.** think independently on new approaches to manufacturing process, material management, data management and team management
- GS36.** represent any new ideas/ approaches on process improvement and productivity improvement to the seniors in the team
- GS37.** contribute to building a positive team spirit
- GS38.** exhibit objectivity & openness to others views

Qualification Pack

GS39. collaborate with stakeholders to achieve the desired state of final result

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Digital Data</i>	17	35	-	-
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	2	6	-	-
PC2.. develop a mutual understanding of all the factors influencing a proposed design and their impact on it	2	4	-	-
PC3.. display understanding towards closely integrating design-technology convergence	2	4	-	-
PC4.. ensure technical innovations is implemented in a way which the ultimate user experiences as functionally perfect, expedient and visually compelling	2	4	-	-
PC5.. create a computer-generated 3d image of the drawing/ freehand sketch whose data is then used for assessing design and aerodynamics	2	6	-	-
PC6.. ensure that the design focuses not only on the isolated outer shape of automobile parts but combinations of form and functions	2	4	-	-
PC7.. ensure the aesthetic value of the design corresponds to ergonomic functionality and utility features as well	2	4	-	-
PC8.. understand the impact of environmental forces	3	3	-	-
<i>Creation of a physical clay mode</i>	7	19	-	-
PC9.. create a three dimensional clay model ensuring an understanding of the original intention	2	5	-	-
PC10.. ensure use of clay, wood, resin, form urethane, pop etc. in making real-size physical model	2	5	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11.. use eye and hand to check the actual finished lines and surfaces when the model takes shape	1	5	-	-
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	2	4	-	-
<i>Creating a MockUp</i>	6	16	-	-
PC13.. create a full sized mock-up of the final design with the use of 3 and 5 axis CNC milling machine	2	4	-	-
PC14.. ensure wide range of material such plastics, wood, metal, fabrics and others in creation of a mock-up	2	4	-	-
PC15.. ensure that the mock-up created helps understand aspects related to spaciousness, feel of the cabin, cabin accessibility, visibility and overall visual friendliness	1	4	-	-
PC16.. ensure understanding of the engineering drawing & CNC machine operations	1	4	-	-
NOS Total	30	70	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N8101
NOS Name	Complete all modelling activities based on the rendered sketch
Sector	Automotive
Sub-Sector	Manufacturing and R&D
Occupation	Modeller
NSQF Level	5
Credits	TBD
Version	1.0
Last Reviewed Date	20/01/2014
Next Review Date	20/01/2016
NSQC Clearance Date	

Qualification Pack

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

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

Recommended Pass % : 75

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
ASC/N0006.Maintain a safe and healthy working environment	25	75	-	-	100	15
ASC/N0022.Ensure implementation of 5S activities at the shop floor & the office area	29	71	-	-	100	15
ASC/N8101.Complete all modelling activities based on the rendered sketch	30	70	-	-	100	70

Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
Total	84	216	-	-	300	100

Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training

Qualification Pack

Glossary

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.
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 (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of 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.

Qualification Pack

Knowledge and Understanding (KU)	Knowledge and Understanding (KU) 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 (GS)	Core skills or Generic Skills (GS) 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.
Electives	Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.
Options	Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.