

Qualification Pack



Executive, Proto Manufacturing

QP Code: ASC/Q6501

Version: 1.0

NSQF Level: 4

Automotive Skills Development Council || 153, Gr Floor, Okhla Industrial Area, Phase - III, Leela Building
New Delhi - 110020

Qualification Pack

Contents

ASC/Q6501: Executive, Proto Manufacturing	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/N0021: Maintain 5S at the work premises	10
ASC/N6501: Develop the prototype for existing product modification	17
ASC/N6502: Develop the prototype based on future business plan	22
Assessment Guidelines and Weightage	26
<i>Assessment Guidelines</i>	26
<i>Assessment Weightage</i>	27
Acronyms	28
Glossary	29

Qualification Pack

ASC/Q6501: Executive, Proto Manufacturing

Brief Job Description

Individuals at this job need to coordinate with different departments and functions for Manufacturing and R&D of prototype vehicle/parts that will finally be used for testing and validation.

Personal Attributes

The individual should be willing to work at shop floor for long hours. The individual should possess coordination and interpersonal skills. The individual should also be able to demonstrate skills for information ordering, imagination, analytical reasoning, technology, customer orientation, oral expression and comprehension.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [ASC/N0006: Maintain a safe and healthy working environment](#)
2. [ASC/N0021: Maintain 5S at the work premises](#)
3. [ASC/N6501: Develop the prototype for existing product modification](#)
4. [ASC/N6502: Develop the prototype based on future business plan](#)

Qualification Pack (QP) Parameters

Sector	Automotive
Sub-Sector	R & D Support
Occupation	Testing and Validation
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3115.0301

Qualification Pack

Minimum Educational Qualification & Experience	B.Tech (Mechanical/Automobile Engineering) with 2-3 years of experience R&D department pertaining to Proto Manufacturing OR Diploma (Mechanical/Automobile Engineering) with 2-3 years of experience R&D department pertaining to Proto Manufacturing
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	Compulsory: operational knowledge of design tools CAD/CAE/PRO-E, MS Office, 3D modeling and simulation techniques, Rapid prototyping, Production processes in the organization/ vendors Voluntary: Information flow systems like ERP/SAP/PLM
Minimum Job Entry Age	18 Years
Last Reviewed On	23/09/2013
Next Review Date	24/09/2021
Deactivation Date	24/09/2021
NSQC Approval Date	20/07/2015
Version	1.0
Reference code on NQR	2015/AUT/ASDC/00584
NQR 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:

Qualification Pack

- KU1.** relevant standards, procedures and policies related to Health, Safety and Environment followed in the company
- 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
Deactivation Date	NA
NSQC Clearance Date	20/07/2015

Qualification Pack

ASC/N0021: Maintain 5S at 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

Elements and Performance Criteria

Ensure sorting

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

- PC1..** follow the sorting process and check that the tools, fixtures & jigs that are lying on workstations are the ones in use and unnecessary 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
- PC10.** follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists

Ensure proper documentation and storage (organizing , streamlining)

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

- 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
- 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

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

Qualification Pack

- 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

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

- PC22.** follow the daily cleaning standards and schedules to create a clean working environment
- PC23.** attend all training programs for employees on 5 s
- PC24.** support the team during the audit of 5 s
- PC25.** participate actively in employee work groups on 5s and encourage team members for active participation
- PC26.** follow the guidelines for what to do and what not to do to build sustainability in 5s as mentioned in the 5s check lists/ work instructions

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
- KU6.** have knowledge of labels , signs & colours used as indicators
- KU7.** 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/unwanted substances on the process/ environment/ machinery/ human body
- KU10.** have knowledge of best ways of cleaning & 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.

Qualification Pack

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.** read 5S instructions put up across the plant premises
- GS4.** effectively communicate information to team members inform employees in the plant and concerned functions about 5S
- GS5.** question the process head in order to understand the 5S related issues
- GS6.** attentively listen with full attention and comprehend the information given by the speaker during 5S training programs
- GS7.** use common sense and make judgments during day to day basis
- GS8.** use reasoning skills to identify and resolve basic problems using 5S
- GS9.** persuade co team members to follow 5 S
- GS10.** ensure that the co team members understand the importance of using 5 S tool
- GS11.** use innovative skills to perform and manage 5 S activities at the work desk and the shop floor
- GS12.** exhibit inquisitive behaviour to seek feedback and question on the existing set patterns of work
- GS13.** do what is right, not what is a popular practices
- GS14.** follow shop floor rules& regulations and avoid deviations; make 5S an integral way of life
- GS15.** ensure self-cleanliness on a daily basis
- GS16.** demonstrate the will to keep the work area in a clean and orderly manner

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure sorting</i>	10	30	-	-
PC1.. follow the sorting process and check that the tools, fixtures & jigs that are lying on workstations are the ones in use and unnecessary items are not cluttering the workbenches or work surfaces.	1	3	-	-
PC2.. ensure segregation of waste in hazardous/ non hazardous waste as per the sorting work instructions	1	3	-	-
PC3.. follow the technique of waste disposal and waste storage in the proper bins as per sop	1	3	-	-
PC4.. segregate the items which are labelled as red tag items for the process area and keep them in the correct places	1	3	-	-
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	1	3	-	-
PC6. . ensure that areas of material storage areas are not overflowing	1	3	-	-
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	1	3	-	-
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	1	3	-	-
PC9. follow the floor markings/ area markings used for demarcating the various sections in the plant as per the prescribed instructions and standards	1	3	-	-
PC10. follow the proper labeling mechanism of instruments/ boxes/ containers and maintaining reference files/ documents with the codes and the lists	1	3	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure proper documentation and storage (organizing , streamlining)</i>	3	9	-	-
PC11. check that the items in the respective areas have been identified as broken or damaged	1	3	-	-
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	1	3	-	-
PC13. make sure that all material and tools are stored in the designated places and in the manner indicated in the 5s instructions	1	3	-	-
<i>Ensure cleaning of self and the work place</i>	8	24	-	-
PC14. check whether safety glasses are clean and in good condition	1	3	-	-
PC15. keep all outside surfaces of recycling containers are clean	1	3	-	-
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	1	3	-	-
PC17.. check whether all hoses, cabling & wires are clean, in good condition and clamped to avoid any mishap or mix up	1	3	-	-
PC18.. ensure workbenches and work surfaces are clean and in good condition	1	3	-	-
PC19. follow the cleaning schedule for the lighting system to ensure proper illumination	1	3	-	-
PC20. store the cleaning material and equipment in the correct location and in good condition	1	3	-	-
PC21. ensure self-cleanliness - clean uniform, clean shoes, clean gloves, clean helmets, personal hygiene	1	3	-	-
<i>Ensure sustenance</i>	4	12	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC22. follow the daily cleaning standards and schedules to create a clean working environment	1	3	-	-
PC23. attend all training programs for employees on 5 s	0.5	2	-	-
PC24. support the team during the audit of 5 s	1	3	-	-
PC25. participate actively in employee work groups on 5s and encourage team members for active participation	0.5	2	-	-
PC26. follow the guidelines for what to do and what not to do to build sustainability in 5s as mentioned in the 5s check lists/ work instructions	1	2	-	-
NOS Total	25	75	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N0021
NOS Name	Maintain 5S at the work premises
Sector	Automotive
Sub-Sector	Generic
Occupation	Generic
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	15/03/2014
Next Review Date	15/03/2016
Deactivation Date	NA
NSQC Clearance Date	NA

Qualification Pack

ASC/N6501: Develop the prototype for existing product modification

Description

This OS unit is about the individual coordinating for developing prototype for the existing product modification based on field investigation reports

Scope

The unit/ task covers the following:

- coordinate and work with R&D for design release
- in-house and sourcing from vendor for proto parts
- proto manufacturing for testing and validation

Elements and Performance Criteria

Design release for proto parts/vehicle

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

- PC1..** coordinate internally with r&d for the design release of proto vehicle/parts of the existing model
- PC2..** check what are the changes in product have been made by R&D with respect to existing model in terms of - product design changes - product dimensional changes- product material strength/composition changes
- PC3..** ensure co-ordination & communication/documentation of those changes suggested by r&d team for in-house and vendor sourcing of the required parts
- PC4..** sign off the proto- stage after release as per SOP

In-house and sourcing from vendor for proto parts

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

- PC5..** check based on the change suggested whether modified part is being manufactured in-house or sourced from different vendor
- PC6..** release the modified part design to in-house manufacturing unit or to the vendor depending upon from where modified part can be sourced
- PC7..** coordinate with in-house manufacturing unit and vendor for timeline for delivering modified parts based on parts modification feasibility
- PC8..** ensure that parts are getting delivered to the r&d department meeting the timeline requirement

Coordinate for Proto manufacturing and validation

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

- PC9..** coordinate with production team for proto manufacturing as per design released by r&d department; ensure adequate numbers as may be required for customer/ verification and validation are planned.
- PC10..** based on production schedule inform the time line to the testing and validation team for proto testing and validation
- PC11..** handover the proto vehicle/part to the testing validation team after production of the same

Qualification Pack

- PC12..** co-ordinate with materials lab, qa, standards room etc for verification of the dimensional and material /special characteristics as necessary for the change in the design at appropriate stage.
- PC13..** keep records maintaining traceability to facilitate interpretation of test results later.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** product portfolio of organization
- KU2.** the manufacturing processes of organization
- KU3.** the list of approved vendors for the outsourced materials
- KU4.** protocol for communication with various department
- KU5.** personnel and other HR policies of the organization
- KU6.** good understanding of prototyping and testing process
- KU7.** understanding on homologation and validation process
- KU8.** knowledge in tools like CAD, CAM,PRO -E etc
- KU9.** information systems like SAP, ERP,PLM etc.

Generic Skills (GS)

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

- GS1.** read and understand the usage of different parts in the vehicle
- GS2.** good product knowledge and strong coordination skill
- GS3.** document all the prototyping activities findings in form of MS Word documents , MS Excel spreadsheets etc.
- GS4.** communicate with the concerned departments for gathering part/component drawings and other related information
- GS5.** follow up with concerned manufacturing unit on the progress of prototype development
- GS6.** work effectively with the NPD team members for ensuring proto manufacturing in a timely and efficient manner
- GS7.** share operation knowledge with colleagues and peers
- GS8.** escalate on immediate basis in case parts are timely not available in-house or at the vendor end
- GS9.** work with punctuality and commitment
- GS10.** identify problems (technical and non-technical), disruptions and delays

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Design release for proto parts/vehicle</i>	10	24	-	-
PC1.. coordinate internally with r&d for the design release of proto vehicle/parts of the existing model	2	6	-	-
PC2.. check what are the changes in product have been made by R&D with respect to existing model in terms of - product design changes - product dimensional changes- product material strength/composition changes	3	6	-	-
PC3.. ensure co-ordination & communication/documentation of those changes suggested by r&d team for in-house and vendor sourcing of the required parts	3	6	-	-
PC4.. sign off the proto- stage after release as per SOP	2	6	-	-
<i>In-house and sourcing from vendor for proto parts</i>	10	21	-	-
PC5.. check based on the change suggested whether modified part is being manufactured in-house or sourced from different vendor	3	6	-	-
PC6.. release the modified part design to in-house manufacturing unit or to the vendor depending upon from where modified part can be sourced	2	5	-	-
PC7.. coordinate with in-house manufacturing unit and vendor for timeline for delivering modified parts based on parts modification feasibility	3	5	-	-
PC8.. ensure that parts are getting delivered to the r&d department meeting the timeline requirement	2	5	-	-
<i>Coordinate for Proto manufacturing and validation</i>	10	25	-	-
PC9.. coordinate with production team for proto manufacturing as per design released by r&d department; ensure adequate numbers as may be required for customer/ verification and validation are planned.	2	5	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10.. based on production schedule inform the time line to the testing and validation team for proto testing and validation	2	5	-	-
PC11.. handover the proto vehicle/part to the testing validation team after production of the same	2	5	-	-
PC12.. co-ordinate with materials lab, qa, standards room etc for verification of the dimensional and material /special characteristics as necessary for the change in the design at appropriate stage.	2	6	-	-
PC13.. keep records maintaining traceability to facilitate interpretation of test results later.	2	4	-	-
NOS Total	30	70	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N6501
NOS Name	Develop the prototype for existing product modification
Sector	Automotive
Sub-Sector	R & D Support
Occupation	Testing And Validation
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	27/09/2013
Next Review Date	30/09/2015
Deactivation Date	NA
NSQC Clearance Date	NA

Qualification Pack

ASC/N6502: Develop the prototype based on future business plan

Description

This OS unit is about the individual coordinating with different department and functions for developing the prototype based on organization future business plan

Scope

This unit/ task covers the following:

Elements and Performance Criteria

Coordinate with R&D for new proto design release

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

- PC1.** coordinate internally with R&D for the design release of proto vehicle/parts of the new product based on customer/market requirement
- PC2.** see the simulation of the complete product for better understanding about the new proto
- PC3.** support in evaluating the design from manufacturing/assembly line perspective on the early stage of the project
- PC4.** coordinate in bridging the gap, if any, related to new proto development between design team and product team
- PC5.** ensure documentation of new product requirement suggested by R&D team
- PC6.** sign off the proto- stage after release of SOP

Sourcing of new proto parts

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

- PC7.** check and record what are new product required for new proto manufacturing
- PC8.** coordinate with strategic sourcing for development and sourcing of new parts as per design release
- PC9.** order the parts for prototype assembly according to design release
- PC10.** coordinate with in-house manufacturing unit and vendor for timeline for delivering modified parts based on parts modification feasibility
- PC11.** ensure parts are getting delivered to the R&D department meeting the timeline requirement

Coordinate for Proto manufacturing and validation

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

- PC12.** coordinate with production team for new proto manufacturing as per design released by R&D department; ensure adequate numbers as may be required for customer/ verification and validation are planned.
- PC13.** based on production schedule inform the time line to the testing and validation team for proto testing and validation

Qualification Pack

PC14. handover the proto vehicle/part to the testing validation team after production of the same Co-ordinate with Materials Lab, QA, standards Room etc for verification of the dimensional and material / special characteristics as necessary for the change in the design at appropriate stage . Keep records maintaining traceability to facilitate interpretation of test results later.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** roles, responsibilities and scope of work for different departments
- KU2.** product portfolio of organization
- KU3.** the manufacturing processes of organization
- KU4.** the list of approved vendors for the outsourced materials
- KU5.** protocol for communication with various department
- KU6.** Personnel and other HR policies of the organization
- KU7.** good understanding of prototyping and testing process
- KU8.** understanding on homologation and validation process
- KU9.** knowledge in tools like CAD, CAM,CAE,PRO-E etc
- KU10.** information systems like SAP, ERP etc
- KU11.** knowledge of simulation software, DFMEA, APQP

Generic Skills (GS)

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

- GS1.** read and understand the usage of different parts in the vehicle
- GS2.** good product knowledge and strong coordination skill
- GS3.** document all the prototyping activities findings in form of MS Word documents , MS Excel spreadsheets etc.
- GS4.** communicate with the concerned departments for gathering part/component
- GS5.** follow up with concerned manufacturing unit on the progress of product medication
- GS6.** writing and reading skill to communicate the modification suggested
- GS7.** work effectively with the team members for ensuring proto manufacturing in a timely and efficient manner
- GS8.** share operational knowledge with colleagues and peers
- GS9.** work on escalation on immediate basis in case parts are timely not available in-house or at the vendor end
- GS10.** work with punctuality and commitment
- GS11.** identify problems (technical and non-technical), disruptions and delays

Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Coordinate with R&D for new proto design release</i>	15	31	-	-
PC1. coordinate internally with R&D for the design release of proto vehicle/parts of the new product based on customer/market requirement	2	5	-	-
PC2. see the simulation of the complete product for better understanding about the new proto	4	5	-	-
PC3. support in evaluating the design from manufacturing/assembly line perspective on the early stage of the project	4	6	-	-
PC4. coordinate in bridging the gap, if any, related to new proto development between design team and product team	2	6	-	-
PC5. ensure documentation of new product requirement suggested by R&D team	2	5	-	-
PC6. sign off the proto- stage after release of SOP	1	4	-	-
<i>Sourcing of new proto parts</i>	9	26	-	-
PC7. check and record what are new product required for new proto manufacturing	2	5	-	-
PC8. coordinate with strategic sourcing for development and sourcing of new parts as per design release	2	5	-	-
PC9. order the parts for prototype assembly according to design release	2	5	-	-
PC10. coordinate with in-house manufacturing unit and vendor for timeline for delivering modified parts based on parts modification feasibility	2	6	-	-
PC11. ensure parts are getting delivered to the R&D department meeting the timeline requirement	1	5	-	-
<i>Coordinate for Proto manufacturing and validation</i>	6	13	-	-

Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. coordinate with production team for new proto manufacturing as per design released by R&D department; ensure adequate numbers as may be required for customer/ verification and validation are planned.	2	4	-	-
PC13. based on production schedule inform the time line to the testing and validation team for proto testing and validation	1	4	-	-
PC14. handover the proto vehicle/part to the testing validation team after production of the same Co-ordinate with Materials Lab, QA, standards Room etc for verification of the dimensional and material / special characteristics as necessary for the change in the design at appropriate stage . Keep records maintaining traceability to facilitate interpretation of test results later.	3	5	-	-
NOS Total	30	70	-	-

Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	ASC/N6502
NOS Name	Develop the prototype based on future business plan
Sector	Automotive
Sub-Sector	R & D Support
Occupation	Testing And Validation
NSQF Level	4
Credits	TBD
Version	1.0
Last Reviewed Date	27/09/2013
Next Review Date	30/09/2015
Deactivation Date	NA
NSQC Clearance Date	NA

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.

Qualification Pack

7. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Minimum Aggregate Passing % at QP Level : 70

(**Please note:** Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

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/N0021.Maintain 5S at the work premises	25	75	-	-	100	15
ASC/N6501.Develop the prototype for existing product modification	30	70	-	-	100	35
ASC/N6502.Develop the prototype based on future business plan	30	70	-	-	100	35
Total	110	290	-	-	400	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.