



Model Curriculum

QP Name: Armourer – Sheet metal worker

QP Version: 1.0

NSQF Level: 2.0

Model Curriculum Version: 1.0

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Table of Contents

| | |
|--|----|
| Training Parameters..... | 3 |
| Program Overview | 4 |
| Training Outcomes..... | 4 |
| Compulsory Modules | 4 |
| Module 1: Introduction to the role of an Armourer – Sheet Metal Worker | 6 |
| Module 2: Health and safety Practices | 7 |
| Module 3: Process of coordinating with co-workers to achieve work efficiency | 10 |
| Module 4: Perform sheet metal cutting, forming and assembly operations | 12 |
| Module 5: Financial and Legal Literacy..... | 15 |
| Module 6: Essential Digital Skills..... | 16 |
| Annexure..... | 17 |
| Trainer Requirements | 18 |
| Assessor Requirements..... | 19 |
| Assessment Strategy | 20 |
| References | 21 |
| Glossary..... | 22 |
| Acronyms and Abbreviations..... | 23 |

Training Parameters

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|---|---|
| Sector | Capital Goods |
| Sub-Sector | Light Engineering Goods |
| Occupation | Armourer – Sheet metal worker |
| Country | India |
| NSQF Level | 2.0 |
| Aligned to NCO/ISCO/ISIC Code | NCO-2015/NIL |
| Minimum Educational Qualification and Experience | Ability to read and write with 1 year or relevant experience. |
| Pre-Requisite License or Training | NA |
| Minimum Job Entry Age | 18 years |
| Last Reviewed On | |
| Next Review Date | |
| NSQC Approval Date | |
| QP Version | 1.0 |
| Model Curriculum Creation Date | |
| Model Curriculum Valid Up to Date | |
| Model Curriculum Version | |
| Minimum Duration of the Course | 40 Hours 00 Minutes |
| Maximum Duration of the Course | 40 Hours 00 Minutes |

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills.

- Interpret drawing/work instructions/SOPs for identification of raw material, tools and equipment required for various operations performed by Armourer – Sheet Metal worker.
- Carry out activities such as lifting of workpiece, inspection of tools and equipments etc.
- Carry out cutting, forming and assembling activities on sheet metal to make various types of armours.
- Work effectively and efficiently as per schedules and timelines.
- Implement safety practices.
- Optimize the use of resources to ensure less wastage and maximum conservation.

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

| NOS and Module Details | Theory Duration | Practical Duration | On-the-Job Training Duration (Mandatory) | On-the-Job Training Duration (Recommended) | Total Duration |
|--|-----------------|--------------------|--|--|----------------|
| Bridge Module | 02:00 | 00:00 | 0:00 | 00:00 | 02:00 |
| Module 1: Introduction to the role of an Armourer – Sheet Metal Worker | 02:00 | 0:00 | 00:00 | 00:00 | 02:00 |
| Follow the health and safety practices at work NOS Version- 2.0 NSQF Level- 3 | 02:00 | 04:00 | 0:00 | 0:00 | 06:00 |
| Module 2: Health and safety practices | 02:00 | 04:00 | 0:00 | 00:00 | 06:00 |
| Coordinate with co-workers to achieve work efficiency NOS Version-2.0 NSQF Level- 3 | 03:00 | 04:00 | 0:00 | 00:00 | 07:00 |
| Module 3: Process of coordinating with co-workers to achieve work efficiency | 03:00 | 04:00 | 0:00 | 00:00 | 07:00 |
| Perform sheet metal cutting, forming and assembly operations NOS Version No. – 1.0 NSQF Level – 2.5 | 06:00 | 09:00 | 0:00 | 00:00 | 15:00 |
| Module 4: Perform sheet metal cutting, forming and assembly to make armours | 06:00 | 09:00 | 0:00 | 00:00 | 15:00 |

| | | | | | |
|---|--------------|--------------|-------------|--------------|--------------|
| DGT/VSQ/N0101 - Employability Skills (3hours) NOS Version No. – 1.0 NSQF Level – 2 | 04:00 | 06:00 | 0:00 | 00:00 | 10:00 |
| Module 5: Financial and Legal Literacy | 02:00 | 03:00 | 0:00 | 00:00 | 05:00 |
| Module 6: Essential Digital Skills | 02:00 | 03:00 | 0:00 | 00:00 | 05:00 |
| Total Duration | 17:00 | 23:00 | 0:00 | 00:00 | 40:00 |

Module Details

Module 1: Introduction to the role of an Armourer – Sheet Metal Worker

Bridge module

Terminal Outcomes:

- Discuss the role and responsibilities of a Blacksmith.

| Duration: 02:00 | Duration: 00:00 |
|---|-----------------------------------|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • List the role and responsibilities of an Armourer – Sheet Metal Worker. • Discuss the job opportunities of an Armourer – Sheet Metal Worker. • Describe the size and scope of the capital good industry and its sub-sectors. • Explain about Indian capital goods manufacturing market. • Discuss the standards and procedures involved in the different operations of forging. | |
| Classroom Aids: | |
| Whiteboard, marker pen, projector, standard checklists and schedules | |
| Tools, Equipment and Other Requirements | |
| | |

Module 2: Health and safety Practices

Mapped to CSC/N1335 v2.0

Terminal Outcomes:

- Demonstrate ways to maintain personal health and safety.
- Explain how to check the first aid box, firefighting and safety equipment.
- Explain the importance of following the fire safety guidelines.
- Explain the importance of following the emergency and first-aid procedures.

| Duration: 02:00 | Duration: 04:00 |
|---|---|
| <p>Theory – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Explain the recommended practices to be followed to ensure protection from infections and transmission to others, such as the use of hand sanitiser and face mask. • Explain the importance and process of checking the work conditions, assessing the potential health and safety risks, and take appropriate measures to mitigate them. • Explain the importance of following the manufacturer’s instructions and workplace safety guidelines while working on heavy machinery, tools and equipment. • Explain the importance of ensuring the first aid box is updated with the relevant first aid supplies. • Describe the process of checking and testing the firefighting and various safety equipment to ensure they are in a usable condition. • Explain the use of different types of fire extinguishers to extinguish different types of fires. • State the recommended practices to be followed for safe rescue during a fire emergency. • Explain how to request assistance from the fire department to extinguish a serious fire. • Explain the appropriate practices to be followed during workplace emergencies to ensure safety and minimise loss to organisational property. • Explain the importance of ensuring easy access to firefighting and safety equipment. • Explain various causes of fire in different work environments and the recommended precautions to be taken to prevent fire accidents. | <p>Practical – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Demonstrate the use of appropriate Personal Protective Equipment (PPE) relevant to the task and work conditions. • Demonstrate how to handle hazardous materials safely. • Demonstrate the process of testing the firefighting and various safety equipment to ensure they are in usable condition. • Demonstrate the process of recycling and disposing of different types of waste appropriately. • Demonstrate how to use the appropriate type of fire extinguisher to extinguish different types of fires safely. • Demonstrate how to administer appropriate first aid to the injured personnel. • Demonstrate the process of performing Cardiopulmonary Resuscitation (CPR) on a potential victim of cardiac arrest. • Demonstrate the process of carrying out appropriate documentation following a health and safety incident at work, including all the required information. |

- Describe different methods of extinguishing fire.
- List different materials used for extinguishing fire.
- Explain the applicable rescue techniques to be followed during a fire emergency.
- Explain different types of first aid treatment to be provided for different types of injuries.
- State the potential injuries associated with incorrect manual handling.
- Explain how to move an injured person safely.
- State various hazards associated with the use of various machinery, tools, implements, equipment and materials.
- Explain the importance of ensuring no obstruction and free access to fire exits.
- Explain how to free a person from electrocution safely.
- Explain how to administer appropriate first aid to an injured person.
- Explain how to perform Cardiopulmonary Resuscitation (CPR).
- Explain the importance of coordinating with the emergency services to request urgent medical assistance for persons requiring professional medical attention or hospitalization.
- State the appropriate documentation to be carried out following a health and safety incident at work, and the relevant information to be included.
- Explain the importance and process of reviewing the health and safety conditions at work regularly or following an incident.
- Explain the importance and process of implementing appropriate changes to improve the health and safety conditions.

Classroom Aids

Computer, Projection Equipment, PowerPoint Presentation and Software.

Tools, Equipment and Other Requirements

Personal Protective Equipment, Cleaning Equipment and Materials, Sanitizer, Soap, Mask

Module 3: Process of coordinating with co-workers to achieve work efficiency

Mapped to CSC/N1336 v2.0

Terminal Outcomes:

- Demonstrate ways to work and communicate effectively with co-workers.
- Discuss ways to promote diversity and inclusion at the workplace.

| Duration: 01:00 | Duration: 02:00 |
|---|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Explain the importance and process of effective communication in the workplace. • Explain the barriers to effective communication and how to overcome them. • Explain the importance of active listening in the work environment. • State the appropriate techniques to be followed for active listening. • Explain the importance of tone and pitch ineffective communication. • Explain the importance of avoiding casual expletives and unpleasant terms while communicating professional circles. • State the common reasons for interpersonal conflict and how to resolve them. • Explain the importance of developing effective working relationships for professional success. • Describe the process of expressing and addressing grievances appropriately and effectively. • Explain the importance and process of planning daily tasks to ensure their timely completion and efficient use of time. • Explain the importance of adhering to the limits of authority at work. • Explain the importance of coordinating with co-workers to achieve work objectives efficiently. • Explain the importance of providing appropriate information clearly and systematically in work documents. • Explain the importance and process of mentoring and assisting subordinates in the execution of their work responsibilities. • Explain the importance and process of efficient and timely dissemination of information to the authorized personnel. • Explain the procedure to report | <ul style="list-style-type: none"> • Demonstrate the process of preparing the relevant documents and reports as per the supervisor's instructions, providing appropriate information clearly and systematically. • Demonstrate how to mentor and assist subordinates in the execution of their work responsibilities. • Demonstrate the process of using various resources efficiently to ensure maximum utilization and minimum wastage. • Demonstrate how to communicate clearly and politely to ensure effective communication with co-workers. • Demonstrate appropriate verbal and non-verbal communication that is respectful of genders and disability. |

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| inappropriate behavior e.g., harassment. | |
| Classroom Aids: | |
| Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop | |
| Tools, Equipment and Other Requirements | |
| NA | |

Module 4: Perform sheet metal cutting, forming and assembling operations

Terminal Outcomes:

- Identify tools and equipment required for sheet metal cutting, forming and assembling operations.
- Perform sheet metal cutting, forming and assembling operations for making different types of armours.

| Duration: 06:00 | Duration: 09:00 |
|--|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Discuss organizational standards and procedures (including reporting and documentation) to be followed for carrying out sheet metal forming work. • List the information to be obtained from interpreting instructions received from supervisor. • List the tools, equipment, measuring instruments and material required during sheet metal cutting, forming and assembly operation in order to make different types of armours. • Describe the precautions to be taken and safe practices to be followed while performing various sheet metal cutting, forming and assembly. • Describe marking out process and various marking out methods. • Describe various sheet metal cutting, forming and assembly operations. • Elucidate the factors for selecting the method of sheet metal cutting, forming and assembly as per the work requirements. • List the commonly occurring problems and their remedies in the fabricated armours. • State the importance of disposing of the waste, scrap etc. after task completion. | <ul style="list-style-type: none"> • Show how to arrange tools, equipment, measuring instruments and material used in the work process. • Apply appropriate industrial practices measures to check the tools, equipment, measuring instruments and material for desired functioning and calibration before use. • Show how to prepare the sheet metal for marking out. • Show how to mark the dimensions, range of features and templates on sheet metal. • Demonstrate organizational procedure of obtaining approval from supervisor on marked out features and correcting errors as per feedback received for making Armours. • Demonstrate the procedure to carry out sheet metal cutting, forming and assembly operations on the metal sheet. • Demonstrate use of cutting hand and manually operated machine tools to cut the metal sheet. • Demonstrate the procedure of various forming operations to produce sheet metal components of required shapes. • Perform steps to report to the supervisor about any problems faced or anticipated during the complete process. • Employ appropriate practices to clean and store the tools, equipment and process auxiliaries safely. • Prepare sample records consisting of information such as the type of tasks performed. |

Classroom Aids:

Whiteboard, marker pen, projector

Tools, Equipment and Other Requirements

- Basic toolbox, Work bench with vice
- Tin snip, hacksaw, trepanning, bench shears, files, pneumatic tools, guillotine, pillar drill, cropping machine, Nibbling machine, mechanical saw, rotary shears Hammers, mallets, stakes, formers, wooden blocks, external micrometer, vernier calliper, Surface finish equipment, rules, squares, callipers, protractors, depth micrometer, depth vernier, feeler gauge, bore/hole gauge, slip gauge, radius/profile gauge, thread gauge, height gauge, Soldering equipment, brazing, equipment, mechanical fasteners
- Handbook, job orders, work order, completion material requests, and Technical Reference Books.
- **Safety materials:** Fire extinguisher, welding helmet, Leather sleeves, leather safety gloves, leather aprons, safety glasses with side shields, ear plug, safety shoes and first-aid kit
- **Cleaning material:** Tip cleaner, wire brush (M.S.), cleaning agents, cleaning cloth, waste container, dustpan and brush set, liquid soap, hand towel

Module 6: Financial and Legal Literacy

Mapped to DGT/VSQ/N0101

Terminal Outcomes:

- Describe ways of managing expenses, income, and savings.

| Duration: <01:30> | Duration: <02:15> |
|--|---|
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> Discuss the significance of using financial products and services safely and securely. Explain the importance of managing expenses, income, and savings. Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws | <ul style="list-style-type: none"> Demonstrate ways of managing expenses, income, and savings. |
| Classroom Aids: | |
| Whiteboard, marker pen, projector | |
| Tools, Equipment and Other Requirements | |
| | |

Module 13: Essential Digital Skills

*Mapped to
DGT/VSQ/N0101*

Terminal Outcomes:

- Demonstrate procedure of operating digital devices and associated applications safely.

| | |
|--|---|
| Duration: <01:30> | Duration: <02:15> |
| Theory – Key Learning Outcomes | Practical – Key Learning Outcomes |
| <ul style="list-style-type: none"> • Discuss the significance of using internet for browsing, accessing social media platforms, safely and securely | <ul style="list-style-type: none"> • Show how to operate digital devices and use the associated applications and features, safely and securely |
| Classroom Aids: | |
| Whiteboard, marker pen, projector | |
| Tools, Equipment and Other Requirements | |
| | |