



Model Curriculum

NOS Name: Overhead Gantry crane operator

NOS Code: CSC/N1205

QP Version: 1.0

NSQF Level: 4

Model Curriculum Version: 1.0

Capital Goods & Strategic Skill Council || 39, 1st Floor, Samyak Tower, Pusa Rd, Block 9A, WEA Karol Bagh, New Delhi – 110001 || email: ceo@cgssc.org

Table of Contents

Contents

Training Parameters	3
Training Outcomes	4
Compulsory Modules	4
Module Details	5
Module 1: Prepare for and perform crane operation safely as per SOP	5
Module 2: Perform inspection and maintenance on Overhead Crane	6
Trainer Requirements	8
Assessor Requirements	9
Assessment strategy	10
Glossary	11
Acronyms and Abbreviations	12

Training Parameters

Sector	Capital Goods and manufacturing
Sub-Sector	Plastics Manufacturing Machinery, Electrical and Power Machinery, Process Plant Machinery, Light Engineering Goods, Machine Tools, Dies, Moulds and Press Tools, Textile Manufacturing Machinery, Defence Equipment, Ship Building & Repair, Fire Fighting & Safety Equipment, Homeland Security
Occupation	Shop Floor Management
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 8343.0501
Minimum Educational Qualification and Experience	<ul style="list-style-type: none"> • 10th grade Pass with 2-year NTC in relevant field • 12th grade pass with science with 1 years of relevant experience • 10th grade Pass with 3 years of relevant experience • Previous relevant qualification of NSQF Level 3.5 with 1.5 years of relevant experience
Pre-Requisite License or Training	Nil
Minimum Job Entry Age	18 years
Last Reviewed On	31 st January 2024
Next Review Date	31 st January 2027
NSQC Approval Date	31 st January 2024
NOS Version	1.0
Model Curriculum Creation Date	31 st January 2024
Model Curriculum Valid Up to Date	31 st January 2027
Model Curriculum Version	1.0
Minimum Duration of the Course	30 Hours
Maximum Duration of the Course	30 Hours

Program Overview

Training Outcomes

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
CSC/N1205: Overhead Gantry crane operator NOS Version No. 1.0 NSQF Level 4	10:00	20:00	00:00	00:00	30:00
Module 1: Prepare for and perform crane operation safely as per SOP	06:00	12:00	00:00	00:00	18:00
Module 2: Perform inspection and maintenance on Overhead Crane	04:00	08:00	00:00	00:00	12:00
Total Duration	10:00	20:00	00:00	00:00	30:00

Module Details

Module 1: Prepare for and perform crane operation safely as per SOP

Bridge module, aligned to CSC/N1205

Terminal Outcomes:

- Perform crane operation as per SOP.
- Explain safety measures to be followed during crane operation.

Duration: 06:00	Duration: 12:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the importance of safety measures to be followed during crane operation. • Describe the ways to minimize hazards associated with crane operations. • Explain the crane operating procedure as per SOP. • Discuss the methods to ensure that the equipments are in good working order. 	<ul style="list-style-type: none"> • Show how to operate the crane safely. • Demonstrate crane operation as per standard operating procedure. • Prepare the crane for work after ensuring that it is in good working order. • Inspect the rope and hook is in good working condition. • Check the sling angle is more than 45°. • Demonstrate to start the crane as per user manual. • Demonstrate to transfer the load using crane to the desired location. • Demonstrate to remove the load once it reached the designated location. • Show how to centre the hoist over the load before lifting.
Classroom Aids:	
Laptop, White Board, Marker, Projector & Screen.	
Tools, Equipment and Other Requirements:	
<ul style="list-style-type: none"> • Basic tool box. • Single girder wire rope hoist, Double girder wire rope hoist, wire rope, wire rope anchor, rope guide, bottom block, remote controller, hoist structure, Electrical cables, electrical panel. • Safety materials: Fire extinguisher, leather safety gloves, leather aprons, safety glasses with side shields, ear plug, safety shoes and first-aid kit 	

Module 2: Perform inspection and maintenance on Overhead Crane

Bridge module, aligned to CSC/N1205

Terminal Outcomes:

- Describe the procedures to follow for a smooth inspection and maintenance of wire rope hoist (crane).
- Demonstrate the process to be followed to inspect the crane.
- Demonstrate the maintenance activities that needs to be performed on the crane post inspection.

Duration: 04:00	Duration: 08:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Discuss the ways to inspect the wire rope for kinking, corrosion, broken wires, and broken strands. • Discuss the purpose of periodic inspection and maintenance. • Explain methods to inspect the hook. • Describe the methods to clean the parts wherever required. • Explain the methods to replace/ repair the damaged parts. 	<ul style="list-style-type: none"> • Demonstrate how to visually inspect the wire rope to ensure that it is free from damage. • Conduct regular inspections and document the findings in the form of a report and mention the next date of periodic inspection. • Demonstrate the inspection of hook, sheave guards, limit switches and ensure that the emergency button is working properly. • Clean and lubricate the parts of the wire rope hoist wherever required as per the standard operating procedure. • Clean of corrosion stains using and apply protective treatments like WD40. • Demonstrate the process of replacing the damaged parts. • Ensure the entire equipment is working as per standards once the maintenance process is completed.
Classroom Aids:	
Laptop, White Board, Marker, Projector & Screen.	
Tools, Equipment and Other Requirements:	
<ul style="list-style-type: none"> • Basic tool box, Work bench with vice • Single girder wire rope hoist, Double girder wire rope hoist, wire rope, wire rope anchor, rope guide, bottom block, remote controller, hoist structure, Electrical cables, electrical panel. • Allen key, spanner, torque wrench, plier, bearing puller, circlip plier, scraper, jigs and fixtures, shafts, couplings, gears, clutch, bearings and seals, cams and followers, chains and sprockets, pulleys, and belts. • Lubricant, oil, grease, plugs, covers, bearings. • Cables, nuts, bolts, fasteners, connectors. • Safety materials: Fire extinguisher, 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, WD40, cleaning cloth, waste container, dust pan and brush set, liquid soap, hand towel 	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate	Mechanical/ Electrical	5		1	Relevant	
Diploma	Mechanical/ Electrical	6		1	Relevant	

Trainer Certification	
Domain Certification	Platform Certification
Certified in ToT for NOS: "Overhead Gantry Crane operator" - CSC/N1205 Minimum accepted score is 80%.	Recommended that the Trainer is certified for the Job Role: "Trainer", mapped to the Qualification Pack: "MEP/Q2701, v1.0. Minimum accepted score is 80%.

Assessors Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate	Mechanical/ Electrical	5		2	Relevant	
Diploma	Mechanical/ Electrical	6		2	Relevant	

Assessor Certification	
Domain Certification	Platform Certification
Certified in ToA for NOS:“Overhead Gantry crane operator” - CSC/N1205. Minimum accepted score is 80%.	Recommended that the Assessor is certified for the Job Role: “Assessor”, mapped to the Qualification Pack: “MEP/Q2701, v1.0. Minimum accepted score is 80%.

Assessment Strategy

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SDMS/SIP or email
- Assessment agencies send the assessment confirmation to VTP/TC looping SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process & records

2. Testing Environment:

- Confirm that the centre is available at the same address as mentioned on SDMS or SIP
- Check the duration of the training.
- Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
- If the batch size is more than 30, then there should be 2 Assessors.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
- Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
- Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
- Check the availability of the Lab Equipment for the Job Role.

3. Assessment Quality Assurance levels / Framework:

- Question papers created by the Subject Matter Experts (SME)
- Question papers created by the SME verified by the other subject Matter Experts
- Questions are mapped with NOS and PC
- Question papers are prepared considering that level 1 to 3 is for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
- Assessor must be ToA certified & trainer must be ToT Certified
- Assessment agency must follow the assessment guidelines to conduct the assessment

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location
- Centre photographs with signboards and scheme specific branding
- Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
- Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos

5. Method of verification or validation:

- Surprise visit to the assessment location
- Random audit of the batch
- Random audit of any candidate

6. Method for assessment documentation, archiving, and access

- Hard copies of the documents are stored
- Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage

- Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site.
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site.
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective, or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do upon the completion of the training.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualification Pack
TVET	Technical and Vocational Education and Training
SOP	Standard Operating Procedure
WI	Work Instructions