

**QUALIFICATION FILE – Standalone NOS**

Overhead Crane Operator

☐ Horizontal/ Generic ☒ Vertical/ Specialization

☒ Upskilling ☐ Dual/Flexi Qualification ☐ For ToT ☐ For ToA

☒ General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☐ Future Skills

NCrF/NSQF Level: 4

Submitted By:

Capital Goods and Strategic Skill Council

39,1st Floor, Samyak Tower, Pusa Rd, Block 9A, WEA, Karol Bagh, New Delhi, Delhi, 110005

Section 1: Basic Details

| 1. <b>Qualification Name</b>                                                                                             | <b>Overhead crane operator</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                          |        |                                                                    |                                                           |    |                                 |    |    |                                                   |                                  |    |            |                               |    |            |                                |
|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|--------|--------------------------------------------------------------------|-----------------------------------------------------------|----|---------------------------------|----|----|---------------------------------------------------|----------------------------------|----|------------|-------------------------------|----|------------|--------------------------------|
| 2. <b>Sector/s</b>                                                                                                       | Capital Goods and Strategic Manufacturing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                          |        |                                                                    |                                                           |    |                                 |    |    |                                                   |                                  |    |            |                               |    |            |                                |
| 3. <b>Type of Qualification:</b> <input checked="" type="checkbox"/> New <input type="checkbox"/> Revised                | <b>NQR Code &amp; version of existing/previous qualification:</b> <i>(change to previous, once approved)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Qualification Name of existing/previous version:</b> <i>(previous, once approved)</i> |        |                                                                    |                                                           |    |                                 |    |    |                                                   |                                  |    |            |                               |    |            |                                |
| 4. <b>National Qualification Register (NQR) Code &amp;Version</b><br><i>(Will be issued after NSQC approval)</i>         | NG-04-CG-02168-2024-V1-CGSC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 5. <b>NCrF/NSQF Level: 4</b>                                                             |        |                                                                    |                                                           |    |                                 |    |    |                                                   |                                  |    |            |                               |    |            |                                |
| 6. <b>Brief Description of Standalone NOS</b>                                                                            | Operate crane equipment safely and efficiently to lift, move and position heavy materials or containers according to work orders and instructions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                          |        |                                                                    |                                                           |    |                                 |    |    |                                                   |                                  |    |            |                               |    |            |                                |
| 7. <b>Eligibility Criteria for Entry for Student/Trainee/Learner/Employee</b>                                            | <p><b>a. Entry Qualification &amp; Relevant Experience:</b></p> <table border="1"> <thead> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>10th grade Pass with 2-year NTC</td> <td>NA</td> </tr> <tr> <td>2.</td> <td>Previous relevant qualification of NSQF Level 3.5</td> <td>1.5 years of relevant experience</td> </tr> <tr> <td>3.</td> <td>12th Class</td> <td>1 year of relevant experience</td> </tr> <tr> <td>4.</td> <td>10th Class</td> <td>3 years of relevant experience</td> </tr> </tbody> </table> <p><b>b. Age: 18</b></p> |                                                                                          | S. No. | Academic/Skill Qualification (with Specialization - if applicable) | Required Experience (with Specialization - if applicable) | 1. | 10th grade Pass with 2-year NTC | NA | 2. | Previous relevant qualification of NSQF Level 3.5 | 1.5 years of relevant experience | 3. | 12th Class | 1 year of relevant experience | 4. | 10th Class | 3 years of relevant experience |
| S. No.                                                                                                                   | Academic/Skill Qualification (with Specialization - if applicable)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Required Experience (with Specialization - if applicable)                                |        |                                                                    |                                                           |    |                                 |    |    |                                                   |                                  |    |            |                               |    |            |                                |
| 1.                                                                                                                       | 10th grade Pass with 2-year NTC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | NA                                                                                       |        |                                                                    |                                                           |    |                                 |    |    |                                                   |                                  |    |            |                               |    |            |                                |
| 2.                                                                                                                       | Previous relevant qualification of NSQF Level 3.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 1.5 years of relevant experience                                                         |        |                                                                    |                                                           |    |                                 |    |    |                                                   |                                  |    |            |                               |    |            |                                |
| 3.                                                                                                                       | 12th Class                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1 year of relevant experience                                                            |        |                                                                    |                                                           |    |                                 |    |    |                                                   |                                  |    |            |                               |    |            |                                |
| 4.                                                                                                                       | 10th Class                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3 years of relevant experience                                                           |        |                                                                    |                                                           |    |                                 |    |    |                                                   |                                  |    |            |                               |    |            |                                |
| 8. <b>Credits Assigned to this Qualification, Subject to Assessment</b> <i>(as per National Credit Framework (NCrF))</i> | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 9. <b>Common Cost Norm Category (I/II/III)</b> <i>(wherever applicable): I</i>           |        |                                                                    |                                                           |    |                                 |    |    |                                                   |                                  |    |            |                               |    |            |                                |

| 10                      | Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                |                   |                 |              |               |                         |                |                   |               |                     |     |    |    |        |   |   |   |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------------|-----------------|--------------|---------------|-------------------------|----------------|-------------------|---------------|---------------------|-----|----|----|--------|---|---|---|
| 11                      | Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification) | <input checked="" type="checkbox"/> Offline <input type="checkbox"/> Online <input type="checkbox"/> Blended<br><table border="1"> <thead> <tr> <th>Training Delivery Modes</th> <th>Theory (Hours)</th> <th>Practical (Hours)</th> <th>Total (Hours)</th> </tr> </thead> <tbody> <tr> <td>Classroom (offline)</td> <td>10</td> <td>20</td> <td>30</td> </tr> <tr> <td>Online</td> <td>-</td> <td>-</td> <td>-</td> </tr> </tbody> </table> (Refer Blended Learning Annexure for details)                                                                                                                                                                                                                    |                |                   |                 |              |               | Training Delivery Modes | Theory (Hours) | Practical (Hours) | Total (Hours) | Classroom (offline) | 10  | 20 | 30 | Online | - | - | - |
| Training Delivery Modes | Theory (Hours)                                                                                                                                               | Practical (Hours)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Total (Hours)  |                   |                 |              |               |                         |                |                   |               |                     |     |    |    |        |   |   |   |
| Classroom (offline)     | 10                                                                                                                                                           | 20                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 30             |                   |                 |              |               |                         |                |                   |               |                     |     |    |    |        |   |   |   |
| Online                  | -                                                                                                                                                            | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -              |                   |                 |              |               |                         |                |                   |               |                     |     |    |    |        |   |   |   |
| 12                      | Assessment Criteria                                                                                                                                          | <table border="1"> <thead> <tr> <th>Theory (Marks)</th> <th>Practical (Marks)</th> <th>Project (Marks)</th> <th>Viva (Marks)</th> <th>Total (Marks)</th> <th>Passing %age</th> </tr> </thead> <tbody> <tr> <td>34</td> <td>66</td> <td>-</td> <td>-</td> <td>100</td> <td>70</td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                    | Theory (Marks) | Practical (Marks) | Project (Marks) | Viva (Marks) | Total (Marks) | Passing %age            | 34             | 66                | -             | -                   | 100 | 70 |    |        |   |   |   |
| Theory (Marks)          | Practical (Marks)                                                                                                                                            | Project (Marks)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Viva (Marks)   | Total (Marks)     | Passing %age    |              |               |                         |                |                   |               |                     |     |    |    |        |   |   |   |
| 34                      | 66                                                                                                                                                           | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -              | 100               | 70              |              |               |                         |                |                   |               |                     |     |    |    |        |   |   |   |
| 13                      | Other Indian languages in which the Qualification & Model Curriculum are being submitted                                                                     | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                |                   |                 |              |               |                         |                |                   |               |                     |     |    |    |        |   |   |   |
| 14                      | Progression Path After Attaining the Qualification, wherever applicable                                                                                      | Supervisor – Overhead Crane Operator, Engineer -Overhead Crane Operator.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                   |                 |              |               |                         |                |                   |               |                     |     |    |    |        |   |   |   |
| 15                      | Is similar NOS available on NQR-if yes, justification for this qualification                                                                                 | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No URLs of similar Qualifications:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                |                   |                 |              |               |                         |                |                   |               |                     |     |    |    |        |   |   |   |
| 16                      | Is the Job Role Amenable to Persons with Disability                                                                                                          | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>If “Yes”, specify applicable type of Disability:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                |                   |                 |              |               |                         |                |                   |               |                     |     |    |    |        |   |   |   |
| 17                      | How Participation of Women will be Encouraged                                                                                                                | Encouraging the participation of women in the training is essential for fostering diversity and inclusivity in the workplace. To promote gender equality in this field, organizations should actively work towards creating a supportive and inclusive training environment. This can be achieved by implementing targeted outreach programs that specifically reach out to women interested in pursuing careers as hoist specialists. Additionally, providing mentorship opportunities, establishing female role models in leadership positions within the industry, and offering flexible training schedules can help address potential barriers and empower women to pursue and excel in this profession. |                |                   |                 |              |               |                         |                |                   |               |                     |     |    |    |        |   |   |   |
| 18                      | Name and Contact Details of Submitting / Awarding Body SPOC (In case of CS or MS, provide details of both Lead AB & Supporting ABs)                          | Name: Ms. Shalini Singh<br>Email: ceo@cgssc.org<br>Website: www.cgsc.in<br><div style="text-align: right;">Contact No.: 9654310244</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                |                   |                 |              |               |                         |                |                   |               |                     |     |    |    |        |   |   |   |

|                                                                          |                                                                  |                                                            |
|--------------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------|
| <b>19. Final Approval Date by NSQC:</b><br>31 <sup>st</sup> January 2024 | <b>20. Validity Duration:</b> till 31 <sup>st</sup> January 2027 | <b>21. Next Review Date:</b> 31 <sup>st</sup> January 2027 |
|--------------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------|

#### Section 2: Training Related

|    |                                                                                                                  |                                                                                                                                                                             |
|----|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | <b>Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)</b>        | B. Tech in Mechanical/ Electrical with 5 years of relevant industry experience <b>OR</b><br>Diploma in Mechanical/ Electrical with 6 years of relevant industry experience  |
| 2. | <b>Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)</b> | B. Tech in Mechanical/ Electrical with 8 years of relevant industry experience <b>OR</b><br>Diploma in Mechanical/ Electrical with 10 years of relevant industry experience |
| 3. | <b>Tools and Equipment Required for Training</b>                                                                 | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", details to be provided in Annexure)                                                          |
| 4. | <b>In Case of Revised Qualification, Details of Any Upskilling Required for Trainer</b>                          |                                                                                                                                                                             |

#### Section 3: Assessment Related

|    |                                                                                                                       |                                                                                                                                                                                          |
|----|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | <b>Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b>                | B. Tech in Mechanical/ Electrical with 3 years of relevant industry experience <b>OR</b><br>Diploma in Mechanical/ Electrical with 4 years of relevant industry experience               |
| 2. | <b>Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b>                 |                                                                                                                                                                                          |
| 3. | <b>Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b> | B. Tech in Mechanical/ Electrical with 5 years of relevant industry experience <b>OR</b><br>Diploma in Mechanical/ Electrical with 6 years of relevant industry experience               |
| 4. | <b>Assessment Mode (Specify the assessment mode)</b>                                                                  | Offline                                                                                                                                                                                  |
| 5. | <b>Tools and Equipment Required for Assessment</b>                                                                    | <input checked="" type="checkbox"/> Same as for training <input type="checkbox"/> Yes <input type="checkbox"/> No (details to be provided in Annexure-if it is different for Assessment) |

#### Section 4: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

|    |                                                                   |
|----|-------------------------------------------------------------------|
| 1. | <b>Government /Industry initiatives/ requirement (Yes/No):</b> No |
|----|-------------------------------------------------------------------|

|    |                                                                                                       |
|----|-------------------------------------------------------------------------------------------------------|
| 2. | <b>Number of Industry validation provided:</b> 1                                                      |
| 3. | <b>Estimated nos. of persons to be trained:</b> 3000+                                                 |
| 4. | <b>Evidence of Concurrence/Consultation with Line Ministry/State Departments:</b> No<br>If “No”, why: |

#### Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

|    |                                                                                                                                                               |  |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| 1. | <b>Annexure:</b> NCrf/NSQF level justification based on NCrf level/NSQF descriptors <i>(Mandatory)</i>                                                        |  |
| 2. | <b>Annexure:</b> List of tools and equipment relevant for NOS <i>(Mandatory, except in case of online course)</i>                                             |  |
| 3. | <b>Annexure:</b> Performance and Assessment Criteria <i>(Mandatory)</i>                                                                                       |  |
| 4. | <b>Annexure:</b> Assessment Strategy <i>(Mandatory)</i>                                                                                                       |  |
| 5. | <b>Annexure:</b> Blended Learning <i>(Mandatory, in case selected Mode of delivery is “Blended Learning”)</i>                                                 |  |
| 6. | <b>Annexure:</b> Standalone NOS – Performance Criteria Details<br>Annexure/ Document with PC-Wise detailing as per NOS Format <i>(Mandatory- Public View)</i> |  |
| 7. | <b>Annexure:</b> Acronym and Glossary <i>(Optional)</i>                                                                                                       |  |
| 8. | <b>Supporting Document:</b> Model Curriculum <i>(Mandatory – Public view)</i>                                                                                 |  |

#### Annexure: Evidence of Level

| NCrf/NSQF Level Descriptors                       | Key requirements of the job role/ outcome of the qualification                                                                                                                                   | How the job role/ outcomes relate to the NCrf/NSQF level descriptor                                                                                                                                                                                        | NCrf/NSQF Level |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <b>Professional Theoretical Knowledge/Process</b> | <ul style="list-style-type: none"> <li>Knowledge of the processes involved in monitoring and optimizing the performance of overhead cranes</li> <li>Knowledge of the responsibilities</li> </ul> | As an Overhead crane operator, the primary responsibility involves the routine and repetitive task of operating and maintaining overhead cranes. This includes tasks such as lifting and moving loads, monitoring crane performance, and ensuring the safe | 4               |

|                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |   |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|                                                                             | <p>associated with transitioning crane control to different operators or shifts</p> <ul style="list-style-type: none"> <li>• Knowledge of best practices for maintaining a safe working environment during crane operation</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>handover of crane operations. The role requires strict adherence to established codes, standards, and method statements governing crane operations. The repetitive nature of the work contributes to a predictable routine, and the specialist must execute tasks systematically in alignment with industry regulations and safety protocols. This ensures a clear and structured work situation for the Gantry crane operator.</p>                                                                                                                                                                                                                                                                                                                                                                                                                           |   |
| <b>Professional and Technical Skills/ Expertise/ Professional Knowledge</b> | <ul style="list-style-type: none"> <li>• Comprehend the operational procedures and processes involved in overhead crane usage</li> <li>• Acquire knowledge of the methodologies employed in overhead crane operation and maintenance</li> <li>• Understand the connections between efficient crane operation and the maintenance practices required for optimal performance</li> <li>• Grasp the objectives related to the safe and efficient operation of overhead cranes</li> <li>• Understand the distinct phases involved in overhead crane operations, from planning to execution</li> <li>• Acquire knowledge of space utilization and</li> </ul> | <p>The knowledge required for a Overhead crane operator is specific and limited to the operational aspects of crane usage, maintenance, and safety protocols. It is factual, focusing on understanding the processes and methodologies related to overhead crane operation, recognizing the interlink between efficient crane use and maintenance practices, understanding the objectives in crane operations, and being aware of the impact of systematic operation on the overall construction and commissioning process. Knowledge also includes familiarity with different stages in crane operations, applicable information management processes and strategies, space, and asset management principles specific to crane operations, as well as proficiency in using specialized software for storing and sharing relevant information. Consequently,</p> | 4 |

|                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |   |
|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|                                                                                             | <p>asset management principles in the context of overhead crane operations</p> <ul style="list-style-type: none"> <li>• Understand and apply the commissioning and testing requirements relevant to overhead crane operations</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <p>the knowledge of a Overhead crane operator is highly specialized and applicable exclusively to their field of work.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |
| <b>Employment Readiness &amp; Entrepreneurship Skills &amp; Mind-set/Professional Skill</b> | <ul style="list-style-type: none"> <li>• Define objectives for efficient and safe overhead crane operation within project parameters</li> <li>• Set performance metrics and targets for the effective use of overhead cranes</li> <li>• Identify and allocate responsibilities among the crane operations team for a smooth workflow</li> <li>• Utilize crane management software to monitor and assess the performance of overhead cranes</li> <li>• Recognize and address areas where the operational performance of overhead cranes can be enhanced</li> <li>• Develop a systematic plan for transitioning crane operations after a predefined duration</li> <li>• Undertake commissioning activities</li> </ul> | <p>As indicated the skill set is required for efficient and safe crane operations. The specialist must possess expertise in setting objectives for crane usage, defining performance metrics, and determining team responsibilities for seamless workflow. Utilizing specialized crane management software, the specialist monitors crane performance, identifies areas for improvement, and understands the impact of design concepts on crane operations. Reviewing operational plans and specifications, planning for systematic crane handovers, undertaking commissioning procedures, ensuring testing compliance, and maintaining relevant documents in the required format are all crucial aspects of the specialist's responsibilities. Obtaining necessary approvals and organizing crane test certificates and warranty documents contribute to the</p> | 4 |

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |   |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
|                                           | <p>to ensure the functionality and safety of overhead cranes</p> <ul style="list-style-type: none"> <li>• Check and ensure that all necessary testing and commissioning procedures for overhead cranes are carried out</li> <li>• Ensure compliance with regulations and obtain the necessary approvals for overhead crane activities</li> </ul>                                                                                                                                                | comprehensive skill set required for the role.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |
| <b>Broad Learning Outcomes/Core Skill</b> | <ul style="list-style-type: none"> <li>• Monitor and optimize the performance of overhead cranes</li> <li>• Facilitate the seamless handover of overhead crane operations to the next shift or team after conducting necessary tests and commissioning procedures.</li> <li>• Work in accordance with personal health, safety, and environmental protocols specific to the manufacturing shop floor and overhead crane operations, ensuring a secure and compliant work environment.</li> </ul> | <p>The Overhead crane operator is tasked with actively monitoring and optimizing the performance of overhead cranes. Additionally, the specialist is responsible for the meticulous handover of crane operations, ensuring thorough testing and commissioning processes have been completed before transitioning control to the next shift or team. Furthermore, the specialist is expected to strictly adhere to personal health, safety, and environmental protocols at construction sites, ensuring a secure and compliant work environment for crane operations. These responsibilities are essential components of the specialized skill set required for the Overhead Gantry crane operator role, emphasizing operational efficiency, safety compliance, and the seamless transition of crane operations.</p> | 4 |



|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |          |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>Responsibility</b> | <ul style="list-style-type: none"> <li>• Plan and organize tasks to ensure the proper setup and readiness for overhead crane operations</li> <li>• Continuously assess and observe the performance of overhead cranes during operations</li> <li>• Implement measures to enhance the efficiency and effectiveness of overhead crane operations</li> <li>• Plan and organize activities in anticipation of handing over control of overhead crane operations to the next shift or team</li> <li>• Follow organizational safety norms and regulations during all phases of overhead crane operations</li> <li>• Implement and adhere to practices that prioritize the health and safety of oneself and others involved in overhead crane activities</li> <li>• Adhere to infection control guidelines, where applicable, to ensure a safe and sanitary working environment during overhead crane operations</li> </ul> | <p>An Overhead crane operator is tasked with the controlled transfer of crane operations and efficient control and monitoring. The specialist actively oversees the performance of overhead cranes, implementing necessary measures to enhance their efficiency and functionality as needed. This emphasizes the responsibility of the specialist in managing and optimizing overhead crane operations, ensuring smooth transitions, and actively contributing to performance improvement when required.</p> | <p>4</p> |
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Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

**Batch Size: 30**

| S. No. | Tool / Equipment Name                                         | Specification                                                                                                                                                                                                           | Quantity for specified Batch size |
|--------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| 1.     | Operating manual                                              | Provided along with the equipment                                                                                                                                                                                       | 30                                |
| 2.     | Safety helmet                                                 | Safety helmet                                                                                                                                                                                                           | 30                                |
| 3.     | Safety goggles                                                | Safety goggles                                                                                                                                                                                                          | 30                                |
| 4.     | Safety shoes                                                  | Safety shoes                                                                                                                                                                                                            | 30                                |
| 5.     | Safety gloves                                                 | Safety gloves                                                                                                                                                                                                           | 30                                |
| 6.     | Single girder wire rope hoist                                 | As per industry standards                                                                                                                                                                                               | 5                                 |
| 7.     | Double girder wire rope hoist                                 | As per industry standards                                                                                                                                                                                               | 5                                 |
| 9.     | Basic toolbox                                                 | Wrenches, pliers, screwdrivers etc.                                                                                                                                                                                     | 10                                |
| 10.    | Different types of slings, hooks and other lifting equipments | Slings, hooks, rope, rope guide, rope anchor, hoist structure                                                                                                                                                           | 10 each                           |
| 11.    | Lubricant, oil, grease, plugs, covers, bearings               | Lubricant, oil, grease, plugs, covers, bearings                                                                                                                                                                         | 10 each                           |
| 12.    | Cables, nuts, bolts, fasteners, connectors                    | Cables, nuts, bolts, fasteners, connectors                                                                                                                                                                              | 20 each                           |
| 13.    | Fire extinguishers                                            | Fire extinguishers                                                                                                                                                                                                      | 10                                |
| 14.    | Cleaning materials                                            | Tip cleaner, wire brush, cleaning agents, WD40, cleaning cloth, liquid soap, hand towel.                                                                                                                                | 10 each                           |
| 15.    | Miscellaneous tools                                           | 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 | 10 each                           |

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Laptop
2. Projector

Annexure: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

| S. No | Organization Name                | Representative Name | Designation | Contact Address                  | Contact Phone No | E-mail ID         | LinkedIn Profile (if available) |
|-------|----------------------------------|---------------------|-------------|----------------------------------|------------------|-------------------|---------------------------------|
| 1.    | K2 CRANES & COMPONENTS PVT. LTD. | S. KANIMOZHI        | CEO         | K2 CRANES & COMPONENTS PVT. LTD. | 8939998797       | kani@k2cranes.com |                                 |

|  |  |  |  |                                                                                                                                                                                |  |  |  |
|--|--|--|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
|  |  |  |  | FACTORY: UNIT-II,<br>SURVEY NO.:<br>352/1-A, 352/1-B &<br>352/2,<br>UTHIRAMERUR<br>ROAD,<br>PUKKATHURAI -<br>603 308,<br>MADURANTHAGAM<br>T.K.,<br>KANCHIPURAM<br>DIST., INDIA |  |  |  |
|  |  |  |  |                                                                                                                                                                                |  |  |  |

Annexure: Training Details

**Training and Employment Projections:**

| Year | Total Candidates                       | Women                       | People with Disability                       |
|------|----------------------------------------|-----------------------------|----------------------------------------------|
|      | Estimated Training of Total Candidates | Estimated Training of women | Estimated Training of people with disability |
| 2024 | 376                                    | 60                          | 10                                           |
| 2025 | 400                                    | 70                          | 12                                           |
| 2026 | 424                                    | 75                          | 14                                           |

Data to be provided year-wise for next 3 years

Annexure: Blended Learning

**Blended Learning Estimated Ratio & Recommended Tools:**

**Refer NCVET “Guidelines for Blended Learning for Vocational Education, Training & Skilling” available on:**

<https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf>

| S. No. | Select the Components of the Qualification                                                                    | List Recommended Tools – for all Selected Components | Offline: Online Ratio |
|--------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------|-----------------------|
| 1      | <input type="checkbox"/> Theory/ Lectures - Imparting theoretical and conceptual knowledge                    | Laptop, projector                                    | NA                    |
| 2      | <input type="checkbox"/> Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners | NA                                                   | NA                    |
| 3      | <input type="checkbox"/> Showing Practical Demonstrations to the learners                                     | As per the tool list attached                        | NA                    |

|   |                                                                                                       |                               |    |
|---|-------------------------------------------------------------------------------------------------------|-------------------------------|----|
| 4 | <input type="checkbox"/> Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training | As per the tool list attached | NA |
| 5 | <input type="checkbox"/> Tutorials/ Assignments/ Drill/ Practice                                      | As per the tool list attached | NA |
| 6 | <input type="checkbox"/> Proctored Monitoring/ Assessment/ Evaluation/ Examinations                   | As per the tool list attached | NA |
| 7 | <input type="checkbox"/> On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training  | NA                            | NA |

#### Annexure: Standalone NOS – Performance Criteria Details

- 1. Description:** Operate gantry crane equipment safely and efficiently to lift, move and position heavy materials or containers according to work orders and instructions.
- 2. Scope:** Prepare for safe crane operation Perform pre-use checks Operate crane as per SOP Perform maintenance on Electric Wire Rope Hoist as required
- 3. Elements and Performance Criteria**

- *Carrying out crane operation safely*

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

PC1. follow the manufacturer's instructions and workplace safety guidelines while working on heavy machinery, tools and equipment

PC2. obtain necessary permit to work

PC3. start and stop the travelling motion at low speed to prevent the load from swinging excessively

PC4. raise the load high enough to prevent it from hitting objects during travel

PC5. perform task safely and recognize any hazards

PC6. ensure SWL data plates are clearly visible to the operator at all times

PC7. operate the crane with care and consideration

PC8. monitor the operation and be ready to press emergency switch whenever required

PC9. move in appropriate direction

PC10. ensure to attend all the suspended loads

PC11. ensure to not lower the hook so far that the ropes become slack

PC12. park the crane or hoist in a designated maintenance position

PC13. follow the appropriate health and safety regulations and procedures

PC14. ensure not to use the overload protection for weighing the load

PC15. use the proper pushbuttons intended for controlling the hoist

PC16. ensure to avoid short, jerky motions and unnecessary short starts as it causes the hoisting motor to overheat quickly

PC17. check the first aid box to ensure it is updated with the relevant first aid supplies

PC18. check and test the firefighting and various safety equipment to ensure they are in usable condition

PC19. ensure all portable fire extinguishers and stowage locations are numbered in place and inspection dated for safety reasons

PC20. coordinate with the supervisor for the repair and replacement of firefighting and safety equipment

PC21. check the work conditions, assess the potential health and safety risks, and take appropriate measures to mitigate them

PC22. select and use the appropriate Personal Protective Equipment (PPE) relevant to the task and work conditions

PC23. follow the recommended techniques while lifting and moving heavy objects to avoid injury

*Prepare for crane operation*

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

PC24. ensure the equipment's are in good working order

PC25. pay particular attention to the rope and hook

PC26. ensure that the hoist is always operated within its rated capacity (SWL - Safe working load)

PC27. check the sling angle is more than 45°

PC28. ensure that no one is working on the crane track, crane platform (if fitted) or where they could be struck by the crane/ hoist

*Operating the crane as per Standard Operating Procedures*

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

PC29. ensure to operate the crane with care and consideration

PC30. start the crane as per set guidelines or user manual

PC31. provide clear directions while operating crane

PC32. load the crane safely as required or mentioned in work order sheet

PC33. transfer the load to the desired location in a safe manner using crane

PC34. remove the load at the designated location and park the crane properly

PC35. centre the hoist over the load before lifting

*Perform inspection and maintenance on wire rope hoist*

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

PC36. check the wire rope for kinking, corrosion, broken wires, and broken strands visually

PC37. check the rope lays in the grooves of the drum and in rope sheaves

PC38. examine wire rope/ chain by walking 360 degrees around hook block

PC39. ensure there is no reduction in rope diameter

PC40. inspect there are no broken wires

PC41. check the hook moves freely in every allowed direction

PC42. ensure the presence of safety latch and its functioning

PC43. inspect free and smooth rotation of rope sheaves

PC44. check there is no structural damage

PC45. ensure there are no cracks on any component

PC46. inspect the presence of capacity marking of equipments

PC47. ensure the sheave guards are intact, unbroken and sheaves are smooth

PC48. check the sheave ropes rotate freely

PC49. inspect the limit switches operate properly

PC50. check the pushbutton controller for cracks, signs of wear in the housing and for loose or broken buttons

PC51. ensure the emergency button is working properly

PC52. clean the parts of the equipment

PC53. replace damaged parts

PC54. clean of corrosion and apply protective treatment

#### **4. Knowledge and Understanding (KU):**

The individual on the job needs to know and understand:

KU1. applicable documentation requirement in the job role

KU2. use of relevant PPE

KU3. applicable health, safety and environmental regulations and guidelines

KU4. the concepts and benefits of industry 4.0 and Industrial IOT

KU5. how to minimize various hazards associated with the crane operations

KU6. the importance of keeping the work area clean and hazard free

KU7. how to read and interpret safe crane operations

KU8. how to extract information/data and related information related to crane operations

KU9. how to use imperial and metric systems of measurement

KU10. use of different types of lifting hooks

KU11. use of relevant accessories like rope, hook, sling, belt etc.

KU12. the importance of following the manufacturer instructions and workplace safety guidelines while working on heavy machinery, tools, and equipment

KU13. safety aspects related to crane operation and material handling

KU14. ratings of motors and precautions to taken while dealing with electrical equipment

KU15. different types of hazards associated with the use of various machinery, tools, implements, equipment, and materials

## **5. Generic Skills (GS):**

User individual on the job needs to know how to:

GS1. maintain work-related notes and records

GS2. read the relevant literature to get the latest updates about the field of work

GS3. communicate politely and professionally

GS4. listen attentively to understand the information being shared

GS5. plan and prioritise tasks to ensure timely completion

GS6. identify possible disruptions to work and take appropriate preventive measures

GS7. take quick decisions to deal with workplace emergencies/ accidents

GS8. evaluate all possible solutions to a problem to select the best one

GS9. coordinate with the co-workers to achieve the work objectives



Annexure: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

| S. No. | Assessment Criteria for Performance Criteria                                                                                 | Theory Marks | Practical Marks | Project Marks | Viva Marks |
|--------|------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------|---------------|------------|
|        | <i>Carrying out crane operation safely</i>                                                                                   | <b>5</b>     | <b>10</b>       | -             | -          |
| PC1.   | follow the manufacturer's instructions and workplace safety guidelines while working on heavy machinery, tools and equipment |              |                 |               |            |
| PC2.   | obtain necessary permit to work                                                                                              |              |                 |               |            |
| PC3.   | start and stop the travelling motion at low speed to prevent the load from swinging excessively                              |              |                 |               |            |
| PC4.   | raise the load high enough to prevent it from hitting objects during travel                                                  |              |                 |               |            |
| PC5.   | perform task safely and recognize any hazards                                                                                |              |                 |               |            |
| PC6.   | ensure SWL data plates are clearly visible to the operator at all times                                                      |              |                 |               |            |
| PC7.   | operate the crane with care and consideration                                                                                |              |                 |               |            |
| PC8.   | monitor the operation and be ready to press emergency switch whenever required                                               |              |                 |               |            |
| PC9.   | move in appropriate direction                                                                                                |              |                 |               |            |
| PC10.  | ensure to attend all the suspended loads                                                                                     |              |                 |               |            |
| PC11.  | ensure to not lower the hook so far that the ropes become slack                                                              |              |                 |               |            |
| PC12.  | park the crane or hoist in a designated maintenance position                                                                 |              |                 |               |            |
| PC13.  | follow the appropriate health and safety regulations and procedures                                                          |              |                 |               |            |
| PC14.  | ensure not to use the overload protection for weighing the load                                                              |              |                 |               |            |
| PC15.  | use the proper pushbuttons intended for controlling the hoist                                                                |              |                 |               |            |
| PC16.  | ensure to avoid short, jerky motions and unnecessary short starts as it causes the hoisting motor to overheat quickly        |              |                 |               |            |
| PC17.  | check the first aid box to ensure it is updated with the relevant first aid supplies                                         |              |                 |               |            |
| PC18.  | check and test the firefighting and various safety equipment to ensure they are in usable condition                          |              |                 |               |            |
| PC19.  | ensure all portable fire extinguishers and stowage locations are numbered in place and inspection dated for safety reasons   |              |                 |               |            |
| PC20.  | coordinate with the supervisor for the repair and replacement of firefighting and safety equipment                           |              |                 |               |            |
| PC21.  | check the work conditions, assess the potential health and safety risks, and take appropriate measures to mitigate them      |              |                 |               |            |
| PC22.  | select and use the appropriate Personal Protective Equipment (PPE) relevant to the task and work conditions                  |              |                 |               |            |

|       |                                                                                                                                |    |    |   |   |
|-------|--------------------------------------------------------------------------------------------------------------------------------|----|----|---|---|
| PC23. | follow the recommended techniques while lifting and moving heavy objects to avoid injury                                       |    |    |   |   |
|       | <i>Prepare for crane operation</i>                                                                                             | 7  | 15 | - | - |
| PC24. | ensure the equipments are in good working order                                                                                |    |    |   |   |
| PC25. | pay particular attention to the rope and hook                                                                                  |    |    |   |   |
| PC26. | ensure that the hoist is always operated within its rated capacity (SWL - Safe working load)                                   |    |    |   |   |
| PC27. | check the sling angle is more than 45°                                                                                         |    |    |   |   |
| PC28. | ensure that no one is working on the crane track, crane platform (if fitted) or where they could be struck by the crane/ hoist |    |    |   |   |
|       | <i>Operating the crane as per Standard OperatingProcedures</i>                                                                 | 7  | 16 | - | - |
| PC29. | ensure to operate the crane with care and consideration                                                                        |    |    |   |   |
| PC30. | start the crane as per set guidelines or user manual                                                                           |    |    |   |   |
| PC31. | provide clear directions while operating crane                                                                                 |    |    |   |   |
| PC32. | load the crane safely as required or mentioned in work order sheet                                                             |    |    |   |   |
| PC33. | transfer the load to the desired location in a safe manner using crane                                                         |    |    |   |   |
| PC34. | remove the load at the designated location and park the crane properly                                                         |    |    |   |   |
| PC35. | centre the hoist over the load before lifting                                                                                  |    |    |   |   |
|       | <i>Perform inspection and maintenance on wire ropehoist</i>                                                                    | 15 | 25 | - | - |
| PC36. | check the wire rope for kinking, corrosion, broken wires and broken strands visually                                           |    |    |   |   |
| PC37. | check the rope lays in the grooves of the drum and in rope sheaves                                                             |    |    |   |   |
| PC38. | examine wire rope/ chain by walking 360 degrees around hook block                                                              |    |    |   |   |
| PC39. | ensure there is no reduction in rope diameter                                                                                  |    |    |   |   |
| PC40. | inspect there are no broken wires                                                                                              |    |    |   |   |
| PC41. | check the hook moves frees in every allowed direction                                                                          |    |    |   |   |
| PC42. | ensure the presence of safety latch and its functioning                                                                        |    |    |   |   |
| PC43. | inspect free and smooth rotation of rope sheaves                                                                               |    |    |   |   |
| PC44. | check there is no structural damage                                                                                            |    |    |   |   |
| PC45. | ensure there are no cracks on any component                                                                                    |    |    |   |   |
| PC46. | inspect the presence of capacity marking of equipments                                                                         |    |    |   |   |

|                    |                                                                                                          |           |           |          |          |
|--------------------|----------------------------------------------------------------------------------------------------------|-----------|-----------|----------|----------|
| <b>PC47.</b>       | ensure the sheave guards are intact, unbroken and sheaves are smooth                                     |           |           |          |          |
| <b>PC48.</b>       | check the sheave ropes rotate freely                                                                     |           |           |          |          |
| <b>PC49.</b>       | inspect the limit switches operate properly                                                              |           |           |          |          |
| <b>PC50.</b>       | check the pushbutton controller for cracks, signs of wear in the housing and for loose or broken buttons |           |           |          |          |
| <b>PC51.</b>       | ensure the emergency button is working properly                                                          |           |           |          |          |
| <b>PC52.</b>       | clean the parts of the equipment                                                                         |           |           |          |          |
| <b>PC53.</b>       | replace damaged parts                                                                                    |           |           |          |          |
| <b>PC54.</b>       | clean of corrosion and apply protective treatment                                                        |           |           |          |          |
| <b>Total Marks</b> |                                                                                                          | <b>34</b> | <b>66</b> | <b>-</b> | <b>-</b> |

#### Annexure: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

*Mention the detailed assessment strategy in the provided template.*

##### 1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on 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:

- Check the Assessment location, date, and time
- 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.

##### 3. Assessment Quality Assurance levels/Framework:

- Question bank is created by the Subject Matter Experts (SME) are verified by the other SME
- Questions are mapped to the specified assessment criteria
- Assessor must be ToA certified & trainer must be ToT Certified

##### 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

##### 5. Method of verification or validation:

- Surprise visit to the assessment location

##### 6. Method for assessment documentation, archiving, and access

- Hard copies of the documents are stored

Annexure: Acronym and Glossary

Acronym

| Acronym | Description                                          |
|---------|------------------------------------------------------|
| AA      | Assessment Agency                                    |
| AB      | Awarding Body                                        |
| ISCO    | International Standard Classification of Occupations |
| NCO     | National Classification of Occupations               |
| NCrF    | National Credit Framework                            |
| NOS     | National Occupational Standard(s)                    |
| NQR     | National Qualification Register                      |
| NSQF    | National Skills Qualifications Framework             |
| OJT     | On the Job Training                                  |

Glossary

| Term                                         | Description                                                                                                                                                                                                                            |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>National Occupational Standards (NOS)</b> | NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.                                               |
| <b>Qualification</b>                         | A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards                                                       |
| <b>Qualification File</b>                    | A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification. |
| <b>Sector</b>                                | A grouping of professional activities on the basis of their main economic function, product, service, or technology.                                                                                                                   |