



Model Curriculum

Iron & Steel - Utility Hand-Plant Operations

SECTOR: IRON & STEEL

SUB-SECTOR: COKE MAKING, AGGLOMERATION, IRON MAKING, STEEL MAKING, HOT ROLL MILL, COLD ROLL MILL, MECHANICAL MAINTENANCE, FERRO ALLOYS, RAW MATERIAL HANDLING, ELECTRICAL MAINTENANCE, REFRACTORY

OCCUPATION: IRON MAKING

REF ID: ISC/Q0410

NSQF LEVEL: 1



Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

INDIAN IRON AND STEEL SECTOR SKILL COUNCIL

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: 'Iron & Steel – Utility Hand-Plant Operations' QP No. 'ISC/Q0410 NSQF Level 1'

Date of Issuance: December 22nd, 2015

Valid up to: December 21st, 2016

* Valid up to the next review date of the Qualification Pack


Authorised Signatory
(Indian Iron and Steel Sector Skill Council)



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Iron & Steel-Utility Hand-Plant Operations

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Iron & Steel- Utility Hand- Plant Operations”, in the “Iron & Steel” Sector/Industry and aims at building the following key competencies amongst the learner.

Program Name	Iron & Steel - Utility Hand-Plant Operations		
Qualification Pack Name & Reference ID.	Iron & Steel – Utility Hand-Plant Operations ISC/Q0410		
Version No.	1.0	Version Update Date	7-7-2016
Pre-requisites to Training	Minimum qualification – 8 th Pass		
Training Outcomes	After completing this programme, participants will be able to: <ul style="list-style-type: none"> • Receive tools and tackles from stores / department • Utility Hand-Plant Operations for smooth operation at site • Clean the equipment's and work site • Use basic health and safety practices at the workplace Work effectively with others 		

This course encompasses 5 out of 5 National Occupational Standards (NOS) of “Assistant” Qualification Pack issued by “Indian Iron & Steel Sector Skill Council”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Over view of Iron & Steel Industry Theory Duration (hh:mm) 07:00 Practical Duration (hh:mm) 00:00 Corresponding NOS Code	<ul style="list-style-type: none"> • Understanding of Iron & steel industry • Understanding various types of Iron & Steel Industry • Creating of products of Iron & Steel industry • Activities in Iron & Steel Industry 	PPTs of Iron and steel manufacturing, Charts showing the same
2	Occupational, Health and Safety (OHAS) Theory Duration (hh:mm) 08:00	<ul style="list-style-type: none"> • Learn Occupational health & Safety • What is hazard • Documentation for Health and safety • Working at Heights, confined spaces • Training on fire and what are remedies & prevention for fire 	PPTs for OHAS related to Job Role, Display Material for PPEs related to Job Role, Safety Material



Sr. No.	Module	Key Learning Outcomes	Equipment Required
	<p>Practical Duration (hh:mm) 03:00</p> <p>Corresponding NOS Code ISC/N0008</p>		
3	<p>5S & House keeping</p> <p>Theory Duration (hh:mm) 18:00</p> <p>Practical Duration (hh:mm) 20:00</p> <p>Corresponding NOS Code ISC/N0431, ISC/N0433, ISC/N0008, ISC/N0009</p>	<ul style="list-style-type: none"> • Identification of bottlenecks in functioning of work place • Various methods of housekeeping both pre-work & post-work as well 	PPTs, Display Charts, Audit Checklists
4	<p>Identification of hand tools for welding, electrician & fitter, defects identification of tools & Using of Hand tools</p> <p>Theory Duration (hh:mm) 16:00</p> <p>Practical Duration (hh:mm) 64:00</p> <p>Corresponding NOS Code ISC/N0432, ISC/N0431</p>	<ul style="list-style-type: none"> • Knowing of tools • Work wise recognition of tools • Diagnosing the common defects of tools • Using of hand tools • Using of measuring instruments 	PPTs/displays of various hand tools, calibration equipment's & measuring & precision instruments
5	<p>Assembling and dismantling of common machines on the worksite</p> <p>Duration (hh:mm) 18:00</p> <p>Practical Duration (hh:mm) 80:00</p> <p>Corresponding NOS Code ISC/N0431, ISC/N0433,</p>	<ul style="list-style-type: none"> • Understanding the engineering drawings • Prepare equipment to perform the assembling of components • Ensuring material appropriateness for assembly • Ensuring housekeeping and safety on the shop floor • Proper identification of tools and tackles • Correct handling of tools and tackles • Documentation of defects and reporting's 	Display of welding machines, pumps, motors, compressors, generators, measuring & precision measuring instruments



Sr. No.	Module	Key Learning Outcomes	Equipment Required
	ISC/N0008, ISC/N0009		
6	<p>Work effectively with others</p> <p>Theory Duration (hh:mm) 03:00</p> <p>Practical Duration (hh:mm) 03:00</p> <p>Corresponding NOS Code ISC/N0009</p>	<ul style="list-style-type: none"> • Ensure appropriate communication with superiors, peers and others as applicable at work place • Demonstrate appropriate behaviour and etiquette at work place 	<p>Communication skills PPTs, Posters Team management posters</p>
	<p>Total Duration</p> <p>Theory Duration 70:00</p> <p>Practical Duration 170:00</p>	<p>Unique Equipment Required:</p> <ul style="list-style-type: none"> • Sample Drawing for welding, electrician and general industrial fittings/Blueprints, Basic • Basic hand tools for Electrician, fitting & Welding • Different Machines such as motors, pumps, generators etc for display • Assembling tools Lubricant and coolant • Material and Equipment for cleaning • Personal protective Equipment's and clothes ,Different Type of Safety Sign, First Aid Box, Safety instrument and clothing, Step Ladder, Sample Accident reports ,Fire Extinguishers, Items required for fire extinguisher and fire Safety 	

Grand Total Course Duration: **240Hours, 0 Minutes**

(This syllabus/ curriculum has been approved by **Indian Iron and Steel Sector Skills Council**)



Trainer Prerequisites for Job role: “Iron & Steel- Utility Hand- Plant Operations” mapped to Qualification Pack: “ ISC/Q0410”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “ISC/Q0410”.
2	Personal Attributes	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well-organised and focused, eager to learn and keep oneself updated with the latest in the mentioned field.
3	Minimum Educational Qualifications	Min ITI Welder/ Fitter/Electrician/Fitter/Welder, Diploma Mechanical/ Electrical
4a	Domain Certification	Certified for Job Role: “Utility Hand-Plant Operations” mapped to QP: “ISC/Q0410”. Minimum accepted score is 80%.
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “ISC/Q0410”. Minimum accepted score is 80%.
5	Experience	Min. 5 years industry experience and minimum 2 years’ experience as Trained or untrained for same Job Role/ Trade

Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Iron & Steel – Utility Hand-Plant Operations
Qualification Pack	ISC/Q0410
Sector Skill Council	Indian Iron & Steel Sector Skill Council

Sr. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training centre (as per assessment criteria below)
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on these criteria.
5	To pass the Qualification Pack , every trainee should score a minimum of 60% in every NOS.
6	In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.



Assessment outcome	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
ISC/N0431: Receive tools and tackles from stores / department	PC1. Adhere to time limits given by supervisor	200	30	10	20
	PC2. Identify in consultation with supervisor the required tools, tackles, equipments and necessary hardware for the job to be carried out		35	10	25
	PC3. Ensure the required tools, tackles, equipments and necessary hardware are in proper working condition and match specification as per the job requirement and the list being provided by the supervisor		35	10	25
	PC4. Coordinate within department/ store to obtain the identified tools and tackles to be carried to the job site		35	10	25
	PC5. Carry the tools, tackles, equipments and hardware to the job site without damage		30	10	20
	PC6. Inspect work site and extend necessary help for executing the job as per suggestion of the supervisor		35	10	25
	NOS Total Marks	Total	200	60	140
ISC/N0432: Assist for smooth operation at Site	PC1. Inspect the worksite to identify types of tools, tackles and hardware required for the job and the work site is clear from all obstructions	300	20	5	15
	PC2. Ensure availability of tools, tackles and hardware required for the job		20	5	15
	PC3. Ensure tools, tackles and hardware required for the job are fit and ready to use		20	5	15
	PC4. Identify the required tools, tackles and hardware required for any particular job		20	5	15
	PC5. Extend necessary help for smooth and timely completion of the job		20	5	15



Assessment outcome	Assessment criteria	Total marks	Marks allocation		
			Out of	Theory	Skills practical
	PC6. Ensure the work place is properly illuminated		25	10	15
	PC7. Ensure that the equipment is free from dust, oil, grease etc.		25	10	15
	PC8. Ensure the work site is clean before starting the job		25	10	15
	PC9. Extend help to dismantle, assemble and carry out maintenance activities required at the site		25	10	15
	PC10. Ensure to oil and grease the parts of the equipments post completion of the job		25	10	15
	PC11. Extend necessary help to welder, gas cutter, fitter, electrician, rigger, technician, operator, scaffold etc. for various nature of activities/jobs		25	10	15
	PC12. Ensure on completion of the job the tools, tackles and hardware to be carried back to department/store		25	10	15
	PC13. Inform supervisor on completion of the assigned job		25	10	15
	NOS Total Marks	Total	300	105	195
ISC/N0433: Clean the equipments	PC1. Ensure the tools and tackles are cleaned before starting the job	250	25	5	20
	PC2. Clean the equipment before dismantling/assembling		30	10	20
	PC3. Ensure the tools and tackles are cleaned (removing oil, dust, grease etc.) after completion of the job		25	5	20
	PC4. Ensure to carry back the unused hardware's, materials etc. (with proper tagging if required) post completion of the job		30	5	25



Assessment outcome	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC5. Ensure the work place is free from dust, oil, grease, scraps etc. before starting the job		30	10	20
	PC6. Ensure the work site is free from all obstacles		25	5	20
	PC7. Clean the work site post job completion		25	5	20
	PC8. Ensure all tools, tackles, scraps and hardware are removed from the work place and returned to the department/stores as per company as per company procedure		30	5	25
	PC9. Inform supervisor on completion of the assigned job		30	10	20
	NOS Total Marks	TOTAL	250	60	190
ISC/N0008: Use basic health and safety practices at the workplace	PC1. Use protective clothing/equipment for specific tasks and work conditions	150	10	5	5
	PC2. State the name and location of people responsible for health and safety in the workplace		5	0	5
	PC3. State the names and location of documents that refer to health and safety in the workplace		0	0	0
	PC4. Identify job-site hazardous work and state possible causes of risk or accident in the workplace		10	5	5
	PC5. Carry out safe working practices while dealing with hazards to ensure the safety of self and others state methods of accident prevention in the work environment of the job role		10	5	5
	PC6. State location of general health and safety equipment in the workplace		5	0	5



Assessment outcome	Assessment criteria	Total marks	Marks allocation		
			Out of	Theory	Skills practical
	PC7. Inspect for faults, set up and safely use steps and ladders in general use		5	0	5
	PC8. Work safely in and around trenches, elevated places and confined areas		5	0	5
	PC9. Lift heavy objects safely using correct procedures		5	0	5
	PC10. Apply good housekeeping practices at all times		0	0	0
	PC11. Identify common hazard signs displayed in various areas		5	5	0
	PC12. Retrieve and/or point out documents that refer to health and safety in the workplace		5	0	5
	PC13. Use the various appropriate fire extinguishers on different types of fires correctly		10	5	5
	PC14. Demonstrate rescue techniques applied during fire hazard		10	5	5
	PC15. Demonstrate good housekeeping in order to prevent fire hazards		0	0	0
	PC16. Demonstrate the correct use of a fire extinguisher		5	0	5
	PC17. Demonstrate how to free a person from electrocution		5	0	5
	PC18. Administer appropriate first aid to victims as required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc.		10	5	5
	PC19. Demonstrate basic techniques of bandaging		5	0	5
	PC20. Respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments		10	5	5



Assessment outcome	Assessment criteria	Total marks	Marks allocation		
			Out of	Theory	Skills practical
	PC21. Perform and organize loss minimization or rescue activity during an accident in real or simulated environments		5	0	5
	PC22. Administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases		5	0	5
	PC23. Demonstrate the artificial respiration and the CPR Process		5	0	5
	PC24. Participate in emergency procedures		5	0	5
	PC25. Complete a written accident/incident report or dictate a report to another person, and send report to person responsible		10	5	5
	PC26. Demonstrate correct method to move injured people and others during an emergency		0	0	0
	NOS Total Marks	Total	150	45	105
ISC/N0009: Work Effectively with others	PC1. Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	100	10	5	5
	PC2. Accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt		10	5	5
	PC3. Provide information to others clearly, at a pace and in a manner that helps them to understand		10	0	10
	PC4. Display helpful behavior by assisting others in performing tasks in a positive manner, where		10	5	5



Assessment outcome	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	required and possible				
	PC5. Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks		10	5	5
	PC6. Display appropriate communication etiquette while working		10	0	10
	PC7. Display active listening skills while interacting with others at work		10	0	10
	PC8. Use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism		10	5	5
	PC9. Demonstrate responsible and disciplined behaviours at the workplace		15	5	10
	PC10. Escalate grievances and problems to		5	0	5
		NOS Total	100	30	70
	Grand Total	1000	1000	300	700
	Percentage Weightage:			50%	50%
	Minimum Pass% to qualify (aggregate):			60%	