



Model Curriculum

Battery Operator

SECTOR: IRON & STEEL
SUB-SECTOR: STEEL

OCCUPATION: COKE MAKING
REF ID: ISC/Q0201
NSQF LEVEL: 5



  

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: 'Battery Operator' QP No. 'ISC/Q0201 NSQF Level 5'

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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Battery Operator

CURRICULUM / SYLLABUS

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

Program Name	Battery Operator		
Qualification Pack Name & Reference ID.	Battery Operator ISC/Q0201		
Version No.	1.0	Version Update Date	01-04-2017
Pre-requisites to Training	Minimum qualification – ITI Pass		
Training Outcomes	After completing this programme, participants will be able to: <ul style="list-style-type: none"> • Carry out all enabling jobs pertaining to coke production • Prepare and carry out charging operation • Prepare and carry out pushing operation • Use basic health and safety practices at the work place • Works effectively with others 		

This course encompasses 5 out of 5 National Occupational Standards (NOS) of “Battery Operator” 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) 05:00 Practical Duration (hh:mm) 00:00 Corresponding NOS Code	<ul style="list-style-type: none"> • Understanding Iron & steel industry • Understanding types of Iron & Steel Industry • Understanding 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 Practical Duration (hh:mm) 12:00 Corresponding NOS Code	<ul style="list-style-type: none"> • Understanding the Occupational health & Safety • Understand What is hazard • Documentation for Health and safety • Working at Heights, confined spaces • Remedies for fire at work place 	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
3	<p>ISC/N0008</p> <p>5S & House keeping</p> <p>Theory Duration (hh:mm) 08:00</p> <p>Practical Duration (hh:mm) 12:00</p> <p>Corresponding NOS Code ISC/N0008</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 	<p>PPTs of 5S, Display Charts of 5S, Audit Checklists of 5S</p>
4	<p>Carry out all enabling jobs pertaining to coke Production</p> <p>Theory Duration (hh:mm) 30:00</p> <p>Practical Duration (hh:mm) 80:00</p> <p>Corresponding NOS Code ISC/N0201</p>	<ul style="list-style-type: none"> • Understand all enabling jobs in accordance with job schedule • Understand the sequence of activities for execution • Seek clarification, if required • Understand advance preparation required for execution 	<p>PPTs for various types of drawings, Blue prints and respective machines Hand tools and machines, various measuring instruments</p>
5	<p>Prepare and carry out charging operation</p> <p>Duration (hh:mm) 40:00</p> <p>Practical Duration (hh:mm) 100:00</p> <p>Corresponding NOS Code ISC/N0202</p>	<ul style="list-style-type: none"> • Understand the charging schedule to plan the sequence of activities • Carry out the preparation activities top/stamped charging of oven • Carry out activities to charge and normalise the oven after completion of top/stamped charging 	<p>Precision measuring tools</p>
6	<p>Prepare and carry out pushing operation</p> <p>Theory Duration (hh:mm) 45:00</p> <p>Practical Duration (hh:mm) 120:00</p> <p>Corresponding NOS Code ISC/N0203</p>	<ul style="list-style-type: none"> • Understand the pushing schedule to plan the sequence of activities • Carry out the activities to prepare for pushing coke through oven • Carry out boxing-up of the oven doors • Carry out levelling of oven and normalization 	<p>PPTs for various types of drawings, Blue prints and respective machines Hand tools and machines, various measuring instruments</p>



Sr. No.	Module	Key Learning Outcomes	Equipment Required
7	<p>Use basic health and safety practices at the workplace</p> <p>Duration (hh:mm) 08:00</p> <p>Practical Duration (hh:mm) 12:00</p> <p>Corresponding NOS Code ISC/N0008</p>	<ul style="list-style-type: none"> Health and safety procedures Fire safety procedures Emergencies, rescue and first aid procedures 	<p>PPE, 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</p>
8	<p>Work effectively with others and manage team members</p> <p>Duration (hh:mm) 08:00</p> <p>Practical Duration (hh:mm) 12:00</p> <p>Corresponding NOS Code ISC/N0096</p>	<ul style="list-style-type: none"> Communicate effectively with team members, co-workers and supervisors <ul style="list-style-type: none"> Encourage friendly working environment Use appropriate titles and terms of respect Follow code of conduct and ethics as applicable Follow organisation specific policies Demonstrate effective behaviours for team work Ensure engagement of team members through on-the job handholding & support 	<p>Communication skills PPTs, Posters Team management posters</p>
	<p>Total Duration</p> <p>Theory Duration 152:00</p> <p>Practical Duration 348:00</p>	<p>Unique Equipment Required:</p> <ul style="list-style-type: none"> Mechanical Drawings, Blueprints, Basic Tools and Equipment's, measuring tools& precision measurement tools, Lubricant and coolant Material and Equipment for cleaning, Bearing pulling, lifting machines PPE, Safety Sign, First Aid Box, Fire Extinguishers 	

Grand Total Course Duration: **500Hours, 0 Minutes**

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



Trainer Prerequisites for Job role: “Battery Operator” mapped to Qualification Pack: “ISC/Q0201”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “ISC/Q0201”.
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 Fitter pass and preferably CTI/ATI cleared/ Diploma Mechanical
4a	Domain Certification	Certified for Job Role: “Battery Operator” mapped to QP: “ISC/Q0201”. Minimum accepted score is 80%
4b	Platform Certification	Recommended that the Trainer is certified for the Job Role: “Trainer”, mapped to the Qualification Pack: “SSC/1402”. Minimum accepted score is 80%
5	Experience	Min. 5 years industry experience and minimum 2 years’ experience as Trained or un trained for same Job Role/ Trade



Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Battery Operator
Qualification Pack	ISC/Q0201
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 (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
ISC/N0201: Carry out all enabling jobs pertaining to coke production	PC1. Interpret the job of coke production and understand the job requirements.	250	15	10	5
	PC2. Understand the specified enabling jobs for coke production.		15	10	5
	PC3. Clean the area specified as per job requirement		15	5	10
	PC4. Clean the battery machines as per machine cleaning schedule		15	5	10



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC5. Identify ovens for technological cleaning of gas carrying equipments		20	5	15
	PC6. Carry out technological cleaning as per oven identified		20	5	15
	PC7. Operate designated cleaning equipment of relevance		15	5	10
	PC8. Seal the cleaning surfaces and regulate them as necessary, if required		15	5	10
	PC9. Identify any clarifications that he wants to seek with respect to the given schedule		15	5	10
	PC10. Recognize whom to contact for clarifications on the given schedule		15	5	10
	PC11. Escalate the concern to the supervisor or shift-in-charge, if needed		15	5	10
	PC12. Carry out preparatory cleaning job as per requirement		15	5	10
	PC13. Clean the area around quenching track, guide car track etc.		15	5	10



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC14. Identify tools, tackles & supporting equipment required to perform the Operation		15	5	10
	PC15. Ask helper to carry tools required to the desired work site		15	5	10
	PC16. Report to stores / supervisor in case of non-availability of tools & tackles or stock-out		15	5	10
	NOS Total Marks	Total	250	90	160
ISC/N0202: Prepare and carry out charging operation	PC1. Understand the charging schedule	250	25	10	15
	PC2. Identify the oven for top/stamped charging		25	10	15
	PC3. Follow the planned sequence of activities for top/stamped charging operation		25	10	15
	PC4. Ensure free flow of charge coal into the charging car from coal tower bunker		25	10	15
	PC5. Inspect gas off take system for free gas flow after top/stamped charging of oven		25	10	15
	PC6. Inspect charging holes for free flow of charge coal for top charging of oven		25	10	15



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC7. Connect the oven with the gas collecting main by application of HPLA system		25	10	15
	PC8. Ensure top/stamped charging to the prepared oven		25	10	15
	PC9. Seal the charging hole lids for top charging by luting (various binding substances & mortar)		25	10	15
	PC10. Disconnect HPLA system to normalise the oven		25	10	15
	NOS Total Marks	Total	250	100	150
ISC/N0203: Prepare and carry out pushing operations	PC1. Check the pushing schedule and begin with pushing activities	250	25	10	15
	PC2. Identify the oven doors for pushing		25	10	15
	PC3. Follow the planned sequence of activities for pushing operation		25	10	15
	PC4. Understand cross battery interlock and physical verification.		25	10	15
	PC5. Ensure isolation with Gas Collecting Main of identified oven.		25	10	15
	PC6. Ensure to open the oven doors for pushing till completion of pushing.		25	10	15
	PC7. Clean sealing surfaces of oven door and door frame manually / mechanised cleaning equipment		10	0	10



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC8. Regulate the oven door by adjusting the door regulation bolts (post charging and levelling operation)		20	5	15
	PC9. Clean the sealing surfaces of levelling window of pusher side door manually/mechanised equipment after levelling operation		20	5	15
	PC10. Ensure locking of levelling window on pusher side door		20	5	15
	PC11. Regulate the levelling window by regulation bolts		20	5	15
	PC12. Ensure quantity of coke after pushing (including uniform receiving)		20	5	15
	NOS Total Marks	Total	250	85	165
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		1	0	1
	PC4. Identify job-site hazardous work and state possible causes of risk or accident in the workplace		9	5	4



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	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
	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		1	0	1
	PC11. Identify common hazard signs displayed in various areas		6	5	1
	PC12. Retrieve and/or point out documents that refer to health and safety in the workplace		4	0	4
	PC13. Use the various appropriate fire extinguishers on different types of fires correctly		9	5	4
	PC14. Demonstrate rescue techniques applied during fire hazard		10	5	5
	PC15. Demonstrate good housekeeping in order to prevent fire hazards		1	0	1



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC16. Demonstrate the correct use of a fire extinguisher		4	0	4
	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
	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		9	5	4



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC26. Demonstrate correct method to move injured people and others during an emergency		1	0	1
	NOS Total Marks	Total	150	45	105
ISC/N0096: Work effectively with others and manage team members	PC1. Accurately receive, absorb and share information and instructions from the supervisor and fellow workers, getting clarification where required	100	5	0	5
	PC2. Display appropriate communication etiquette while working		10	0	10
	PC3. Display active listening skills while interacting with others at work		10	0	10
	PC4. Use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism		5	0	5
	PC5. Display helpful behaviour by assisting others in performing tasks in effective manner		10	0	10
	PC6. Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks		10	0	10
	PC7. Demonstrate responsible and disciplined behaviours at the workplace		5	0	5
	PC8. Escalate grievances and problems to superiors		5	0	5



Assessment outcome (nos)	Assessment criteria	Marks allocation			
		Total marks	Out of	Theory	Skills practical
	PC9. Communicate day-to-day objectives, instructions etc. to team members		15	5	10
	PC10. Guide the team members to manage day-to-day issues at work		5	0	5
	PC11. Gather concerns, feedback from team members and convey them to appropriate authorities		15	5	10
	PC12. Escalate grievances and problems to superiors		5	0	5
	NOS Total Marks	Total	100	10	90
	Grand Total	1000	1000	330	670
	Percentage Weightage:			50%	50%
	Minimum Pass% to qualify (aggregate):			60%	