



Model Curriculum

Cast House Junior Operator

SECTOR: IRON & STEEL
SUB-SECTOR: STEEL

OCCUPATION: IRON MAKING
REF ID: ISC/Q0406
NSQF LEVEL: 2



  

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: 'Cast House Junior Operator' QP No. 'ISC/Q0406 NSQF Level 2'

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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Cast House Junior Operator

CURRICULUM / SYLLABUS

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

Program Name	Cast House Junior Operator		
Qualification Pack Name & Reference ID.	Cast House Junior Operator ISC/Q0406		
Version No.	1.0	Version Update Date	01-04-2017
Pre-requisites to Training	Minimum qualification – 8th Pass		
Training Outcomes	After completing this programme, participants will be able to: <ul style="list-style-type: none"> • Understand the assigned job of cast house preparation • Understand the preparation job of cast house and equipment before the cast • Use basic health and safety practices at the work place • Works effectively with others 		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of “Cast House Junior 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) 04:00 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 ISC/N0008	<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>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>Understand the assigned job of cast house preparation</p> <p>Theory Duration (hh:mm) 25:00</p> <p>Practical Duration (hh:mm) 70:00</p> <p>Corresponding NOS Code ISC/N0422</p>	<ul style="list-style-type: none"> • Understand the job in accordance to casting schedule and practice • Understand the tools and tackles required to carry out the job 	<p>PPTs for various types of drawings, Hand tools and machines, various measuring instruments, hot and cold blast valve, blowers, chimney valves, control and measuring instruments and automatic regulators, mud gun, tap hole drill machine, overhead crane</p>
5	<p>Prepare and carry out charging operation</p> <p>Duration (hh:mm) 35:00</p> <p>Practical Duration (hh:mm) 90:00</p> <p>Corresponding NOS Code ISC/N0423</p>	<ul style="list-style-type: none"> • Prepare the working area within time frame for maintaining the production schedule • Prepare cast house equipment before opening the cast 	<p>Hot and cold blast valve, blowers, chimney valves, control and measuring instruments and automatic regulators, mud gun, tap hole drill machine, overhead crane</p>
6	<p>Use basic health and safety practices at the workplace</p> <p>Duration (hh:mm) 08:00</p> <p>Practical Duration (hh:mm) 08:00</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>



Sr. No.	Module	Key Learning Outcomes	Equipment Required
	Corresponding NOS Code ISC/N0008		
7	Work effectively with others Duration (hh:mm) 08:00 Practical Duration (hh:mm) 12:00 Corresponding NOS Code ISC/N0009	<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 	Communication skills PPTs, Posters Team management posters
	Total Duration Theory Duration 96:00 Practical Duration 204:00	Unique Equipment Required: <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, lifting machines PPE, Safety Sign, First Aid Box, Fire Extinguishers 	

Grand Total Course Duration: **300Hours, 0 Minutes**

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

Trainer Prerequisites for Job role: “Cast House Junior Operator” mapped to Qualification Pack: “ISC/Q0406”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “ISC/Q0406”.
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 pass and preferably CTI/ATI cleared/ Diploma Mechanical
4a	Domain Certification	Certified for Job Role: “Cast House Junior Operator” mapped to QP: “ISC/Q0406”. 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	Cast House Junior Operator
Qualification Pack	ISC/Q0406
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/N0422: Understand the assigned job of cast house preparation	PC1. Interpret the log book report for the area to be cleaned	375	50	15	35
	PC2. Plan as appropriate to carry out the housekeeping job as per schedule		45	15	30
	PC3. Understand operation of cast house equipment e.g. mud gun, tap hole drill machine, overhead crane etc.		50	15	35
	PC4. Understand blast furnace stove including valve operation (hot and cold blast valve)		45	15	30



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC5. Understand the functioning of blower, chimney valves and stove changing		50	15	35
	PC6. Understand the specific job and required tackles to be used for preparation of cast house, tap hole preparation, runner heating, blow stock, tuyere changing etc. before opening the cast		45	15	30
	PC7. Make necessary plan for disposing the scrap and debris as per standard process (with the help of tripper/wagon etc.)		45	10	35
	PC8. Inform the supervisor on completion of the job		45	10	35
	NOS Total Marks	Total	375	110	265
ISC/N0423: Understand the preparation job of cast house and equipment before the cast	PC1. Ensure proper housekeeping of the working area before opening the cast	375	40	10	30
	PC2. Ensure housekeeping within given time frame to achieve the schedule production target		50	15	35
	PC3. Understand the job requirement as per log book report of previous shift		40	10	30
	PC4. Ensure cleaning and heating the trough		40	10	30
	PC5. Ensure tap hole drill machine and mud gun are kept ready for operation before opening the cast for scheduled production		40	10	30



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
	PC6. Ensure all operating valves e.g. hot blast, cold blast, chimney, blow-off etc. of blast furnace stove are in healthy condition		45	10	35
	PC7. Inform supervisor on completion of the scheduled job		40	10	30
	PC8. Ensure scrap and other debris as collected are shifted to the necessary location as per plan		40	10	30
	PC9. Maintain log book as per company format		40	10	30
	NOS Total Marks	Total	375	95	280
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
	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



Assessment outcome (nos)	Assessment criteria	Total marks	Marks allocation		
			Out of	Theory	Skills practical
	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
	PC16. Demonstrate the correct use of a fire extinguisher		4	0	4
	PC17. Demonstrate how to free a person from electrocution		5	0	5



Assessment outcome (nos)	Assessment criteria	Total marks	Marks allocation		
			Out of	Theory	Skills practical
	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
	PC26. Demonstrate correct method to move injured people and others during an emergency		1	0	1
	NOS Total Marks	Total	150	45	105



Assessment outcome (nos)	Assessment criteria	Total marks	Out of	Marks allocation	
				Theory	Skills practical
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 required and possible		10	5	5
	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 behaviors at the workplace		15	5	10
	PC10. Escalate grievances and problems to		5	0	5



Assessment outcome (nos)	Assessment criteria			Marks allocation	
		Total marks	Out of	Theory	Skills practical
	NOS Total Marks	Total	100	30	70
	Grand Total	1000	1000	280	720
	Percentage Weightage:			50%	50%
	Minimum Pass% to qualify (aggregate):			60%	