

TATA STEEL

Internal Communication Form

Ref. No. : TAG / 114 / 2023

Date : 03rd October, 2023

Internal Career Opportunities:

Assistant Manager (IL6) Vacancies (For locations across the company)

Position	Assistant Manager	
Level	IL6 (For locations across the company)	
<u>Minimum qualifications for Domain</u>	<u>Domain (Test Cluster)</u>	<u>Minimum Qualification</u>
	Agglomerates	Full Time Engineering Degree / Diploma in any discipline from a recognized Institute or Ex OT.
	Administration	Full time Post Graduate Degree / Post Graduate Diploma / MBA / Degree or Diploma in Engineering / Graduate in any discipline from a recognised institute
	Automation – Maintenance	Full time B. Tech (Mech/ Elec/ Electronics) or equivalent or Diploma (Mech/ Elec/ Electronics)
	Blast Furnace	Full Time Engineering Degree / Diploma in any discipline from a recognized Institute or Ex OT.
	Civil	Full Time Engineering Degree / Diploma in Civil from a recognized Institute
	Coke Plant	Full Time Engineering Degree / Diploma in any discipline from a recognized Institute or Ex OT.
	Cold Rolling	Full Time Engineering Degree / Diploma in any discipline from a recognized Institute or Ex OT.
	Corporate Audit Finance & Commercial	Degree or Diploma in Engineering, CA Inter, ICWA Inter, M. Com, B. Com
	Corporate Audit Technical	Full-Time B.E or B. Tech Degree/ Diploma or equivalent in Engineering from an AICTE recognized institute
	Corporate Communication	Full time Post Graduate Degree / Post Graduate Diploma / MBA / Degree or Diploma in Engineering / Graduate in any discipline from a recognized Institute
	Design – Civil	Full Time Engineering Degree / Diploma in Electrical / Electronics / Instrumentation / Mechanical / Civil / Structural from a recognized institute with relevant experience in Design
	Design – Electrical	Full Time Engineering Degree / Diploma in Electrical / Electronics / Instrumentation from a

TATA STEEL

Internal Communication Form

		recognized Institute with relevant experience in Design
	Design – Mechanical	Full Time Engineering Degree / Diploma in Mechanical / Production from a recognized Institute with relevant experience in Design
	Electrical Maintenance	Full Time Engineering Degree / Diploma in Electrical / Electronics / Instrumentation from a recognized Institute.
	Electrical T&D	Full Time Engineering Degree / Diploma in Electrical from a recognized Institute.
	Engineering & Project	Full time Engineering Degree / Diploma in Civil/ Electrical / Electronics/ Instrumentation/ Mechanical/ Industrial/ Production from a recognized institute
	Engineering Services	Full Time Engineering Degree / Diploma in Mechanical / Production/ Industrial Engineering/ Civil.
	Finance & Accounts	CA(Inter)/ ICWA(Inter)
	Fuel Management	Full Time Engineering Degree / Diploma in any discipline from a recognized Institute or Ex OT / Graduate in Science from a recognized Institute.
	Intelligence	Graduate in any discipline
	Hot Rolling	Full Time Engineering Degree / Diploma in any discipline from a recognized Institute or Ex OT.
	Human Resource Management	(Full time) PG Diploma/ Degree with specialization in HRM/ Personnel Management/ Social Welfare/ Labour Welfare from a recognized institute.
	Legal (Industrial & Litigation)	Full time LLB from a recognized Institute
	Learning & Development – Electrical, Electronics & Instrumentation	Full Time Engineering Degree / Diploma in Electrical / Electronics / Instrumentation from a recognized Institute
	Learning & Development - Mechanical	Full Time Engineering Degree / Diploma in Mechanical from a recognized Institute
	Learning & Development - Metallurgy	Full Time Engineering Degree / Diploma in Metallurgy from a recognized Institute or Ex OT
	Logistics and Supply Chain	Full time Post Graduate Degree / Post Graduate Diploma / MBA / Degree or Diploma in

TATA STEEL

Internal Communication Form

	Engineering / Graduate in any discipline from a recognized Institute
Manufacturing (TGS/SMD)	Full Time Engineering Degree / Diploma in Mechanical / Production from a recognized Institute
Mechanical Maintenance	Full Time Engineering Degree / Diploma in Mechanical / Industrial / Production from a recognized Institute.
Mining Operations (Coal)	Full time Degree in Mining Engineering or equivalent (AMIE) or Diploma in Mining with Second Class Mine Manager Competency Certificate (Coal)
Mining Operations (Metal)	Full time Degree in Mining Engineering or equivalent (AMIE) or Diploma in Mining with Second Class Mine Manager Competency Certificate (Metal)
Natural Resource Division Chemical	M. Sc. in Chemistry/ B.Tech in Chemical Engineering from recognized Institute / University
New Material Business (Quality Assurance)	Full Time Engineering Degree in Mechanical/ Production/ Material Science / Metallurgy Engineering from recognized institute.
One IT	Full Time Engineering Degree /B.Sc. Engineering / M.E. / MTech. / M.B.A. / Post Graduate Diploma in Engineering / M.Sc. (Maths, Stats or Physics) / MCA / from a recognized Institute
Power Plant Operations	Full Time Engineering Degree / Diploma in Mechanical / Electrical / Electronics / Power Engineering / Instrumentation from a recognized Institute.
Product Application Group	Full Time Engineering Degree / Diploma in Metallurgy/ Material Science/ Mechanical/ Production Engineering from recognized institute.
Product Technology (Quality Assurance)	Full Time Engineering Degree / Diploma in Metallurgy/ Material Science/ Mechanical/ Production Engineering from recognized institute.
Refractories	Full Time Engineering Degree / Diploma in Ceramics from a recognized Institute or Ex OT.
Sampling	B.Sc. in Chemistry
Safety	Full Time Engineering Degree / Diploma in any discipline / Graduate / Postgraduate in Science from a recognized Institute.

TATA STEEL

Internal Communication Form

		Degree/ Diploma in Industrial safety is mandatory.
	Security	Graduate in any discipline from a recognized Institute/Experience of seven years in Security function
	Steel Making	Full Time Engineering Degree / Diploma in any discipline from a recognized Institute or Ex OT.
	Wire Drawing	Full Time Engineering Degree / Diploma in any discipline from a recognized institute or Ex OT.
	Wire Rod Rolling	Full Time Engineering Degree / Diploma in any discipline from a recognized institute or Ex OT.
<u>Eligibility Criteria</u>	<p>1) All NOPR employees of TSL including the erstwhile NOPR employees of merged entities TSML and RFTL.</p> <p>2) All permanent employees of Tata Steel Meramandali in JB-A and JB-B grade and SBD grade, possessing the requisite qualification and experience are eligible to apply.</p> <p>3) Employees with Only full-time qualification are eligible to apply. Part time courses, distance education programs and correspondence courses are not eligible.</p> <p>Employees who had enrolled after 31.05.2013 and had already acquired diploma level certificate /degree level certificate in engineering, till 1 July,2020 from the below mentioned institutes which were recognized by Tata Steel but the recognition by AICTE/UGC was withdrawn, their diploma level/degree level certificates in engineering will be considered valid:</p> <ul style="list-style-type: none"> • AMIIM from Indian Institute of Metal, Kolkata • AMIE from Indian Institute of Engineers • Diploma in Mechanical Engineering from Institute of Mechanical Engineers (India) • Diploma in Electronics & Telecommunications Engineering from Institute of Electronics & Telecommunications Engineering, New Delhi • Section A and Section B of Institution examinations from Institute of Computer Engineers of India • BE in Mechanical Engineering from the institute of Engineers of India <p><u>Experience Eligibility</u></p> <p>a) Employees applying with B.E. / B.Tech. / M.E. / MTech. or equivalent qualifications must have minimum of 3 (three) years of experience in Tata Steel/TSBSL (with continuity of service).</p>	

TATA STEEL

Internal Communication Form

	<p>b) Employees applying with Diploma / Postgraduate / Graduate degree must have minimum 5 (five) years of experience in Tata Steel/TSBSL (with continuity of service) on the last day of application of the selection process are also eligible to apply.</p> <p>c) Diploma holders/ Postgraduate/Graduate recruited laterally having minimum relevant experience of 3 (three) years prior to joining Tata Steel/TSLBSL (with continuity of service) and having completed 3 (three) years in Tata Steel/TSBSL (with continuity of service) on the last day of application of the selection process are also eligible to apply.</p> <p>d) Employees applying with B.E. / B.Tech. / M.E. / MTech. or equivalent qualifications, recruited laterally having minimum relevant experience of three years prior to joining Tata Steel/ TSLBSL (with continuity of service) and having minimum of 2 (two) years of experience in Tata Steel/TSBSL (with continuity of service) on the last day of application of the selection process are also eligible to apply.</p>
<u>Selection Method</u>	<p>Written test (domain), behavioural assessment and interview. The written test as well as behavioural assessment will be conducted online.</p> <p>For security domain, a separate physical test will also be conducted.</p> <p>Specific guidelines pertaining to online assessment will be shared with the eligible candidates before written test.</p>
<u>Training and Placement</u>	<ol style="list-style-type: none">1. Selected candidates will undergo necessary induction training.2. They will be placed against vacancies as per the domain in which they have applied.3. The positions are across locations of Tata Steel India.4. The selected candidates can be placed and / or transferred to any locations of Tata Steel or its subsidiaries during their employment.5. Employees will become ineligible for applying in any IL6 selection process for 3 years in first instance and 10 years in second instance under the following conditions:<ol style="list-style-type: none">a) Refusal to accept the offer for IL6 positionb) Request for reversion to previous NOPR position during probationary period
<u>Other Terms & Conditions (Read Thoroughly)</u>	<ol style="list-style-type: none">1. Technical test for the domains will be different. Candidates need to select the domain in which they want to apply at the time of application. Forms once submitted will be considered as final and no request for change of domain will be accepted.2. An individual can apply for any two domains (Test Cluster).3. The last date for submission (24 October,2023) of applications will be taken as cut-off date for considering experience.4. Training period in Tata Steel, before being confirmed will not be counted as experience.5. The qualification of the candidates must be from AICTE / UGC and Tata Steel recognized Institutes.6. Employees who have acquired their diploma in engineering certification which is

TATA STEEL

Internal Communication Form

	<p>not recognized by Tata Steel and neither accredited by AICTE/UGC will have to pass the Bridge course to become eligible.</p> <p>7. If the information submitted by the candidate is found to be incorrect, during or after the selection process, the candidate will be removed from the selection process and suitable action will be taken.</p> <p>8. If the candidate is found to engage in any fraudulent means/practices at any step of the process, it will result in the cancellation of candidature as well as make the candidate ineligible for three years for applying in any IL6 selection process.</p>
How to Apply	<p>1. Please click on the link below to fill up the online application form: https://irisapp.corp.tatasteel.com/recruit/Location.aspx</p> <p>2. The last date of receipt of application is 24 October, 2023</p>

Note: Indicative Course Content is given in the annexure.



Vipin Sharma

Head HRM Talent Acquisition

Indicative Syllabus for IL6 2023

Domain	Syllabus
Administration	<ul style="list-style-type: none">a) TQM Basicsb) Customer Relationsc) Project Management Skilld) Safety - Office Safetye) Resource Managementf) Travel / Arrangement Trendsg) Communication Systemh) Basic IT Skilli) Record Keepingj) External Stakeholder management
Agglomerates	<ul style="list-style-type: none">a) Raw Material Bedding & Blending (Receiving, Storing, Crushing & Making Base Mix.)b) Sinter Making Process & Mechanismc) Sinter Dispatch & Qualityd) Drying & Grinding process of iron oree) Green Pelletizingf) Induration Processg) Raw Material Handling & Pellet Dispatchh) Pellet Dispatch & Quality
Automation (Maintenance)	<ul style="list-style-type: none">a) Vision systems, Optics, Data Communication, Networking and networking devicesb) Digital Electronics, Power Electronics and Electrical Drivesc) Mechatronicsd) Control Systems, Electrical Measurement, Transducers and Industrial Instrumentation, Field Sensors and Actuatorse) Pneumatic systems and devices, Cylinders, flow devicesf) Structural inspection methods, Welding inspection.g) Engineering thermodynamics, cooling systemsh) Study of engineering and network drawing, P&I diagrams, etc.i) General Safety on shop floor (Understanding safety systems like SOP, PSRM, MoC, PSSR, etc. and commonly used and interfaced safety standards like E Permit, Positive Isolation, Gas Safety standard etc.)j) SAP PM, SMPs, maintenance policies, etc.
Blast Furnace	<ul style="list-style-type: none">a) Raw Material of Blast Furnace & its qualityb) Stock House Operation & Charging Systemc) Basic Principles of Blast Furnace operationd) Blast Furnace Operation (All Blowing Parameters)e) Stove Operationf) Injection System

TATA STEEL

Internal Communication Form

	<ul style="list-style-type: none">g) Cast House Operationh) Blast furnace irregularities.i) Handling of different emergency situationsj) Alternative route of iron making processk) Heat and mass balance of blast furnacel) Derivation of different formulas in blast furnace iron making
Civil	<ul style="list-style-type: none">a) Applied Mechanicsb) Strength of Materials, Materials Engineering - Chemical composition and physical properties of different grades of steel, stress strain diagram, elongationc) Design of Steel structure - Design of welded and bolted joints, trusses, steel foundation, girders, etc.d) Design of Reinforced Concrete Structure - beams, columns, slabs, retaining wall and foundatione) Masonry Structures - design and maintenance techniquesf) Estimating, costing and Valuationg) Surveyingh) Civil Engineering Drawingi) Concrete Technology - concrete- mix design. Gradingj) Transportation Engineering - Design of road, maintenance of road, road management, traffic density, road furniture & road safety, Permanent way engineering) Public Health Engineering - Design and maintenance of drain, manholes, sewer line road side drain, finalization of layout based on level etc.k) Building construction Materials, properties of aggregates, bricks, cement properties,l) Construction Managementm) Computer Application for Engineering - CAD techniquen) Structural Analysis- determinant structures - truss, trestles, towers,o) Behaviour of different structures under various loading conditions - simply supported beams, beams fixed at both ends, trusses, trestles, framed structures, stability of structuresp) Elementary soil mechanics and foundation engineering, compaction, consolidation, slope analysisq) Soil waste managementr) Water resource Engineerings) Town Planning Engineering
Coke Plant	<ul style="list-style-type: none">a) Coal characterizationb) Carbonization processc) Battery Heating processd) Oven Machinese) Coal & Coke Handlingf) Coke Dry Quenching

TATA STEEL

Internal Communication Form

	<ul style="list-style-type: none">g) Coal blendingh) Coke propertiesi) Battery Anchorage systemj) BPP Gas Processing Operationk) BPP Liquor Processing Operation
Cold Rolling	<ul style="list-style-type: none">a) Iron-Carbon System, CCT & TTT Diagramb) Recovery-Recrystallization- Grain Growth Kineticsc) Flat Rolling Fundamentalsd) Pickling Processe) Cold Rolling Processf) Electrolytic Cleaning Processg) Batch and Continuous Annealingh) Defects in Cold Rolled Sheetsi) Physical testing of cold rolled productsj) Welding - Flash but and seam weldingk) Basics of Galvanizingl) Basics of IATF 16949m) Roll grinding
Corporate Audit Finance & Commercial	<ul style="list-style-type: none">a) Knowledge of Indian Accounting standardsb) Basic understanding of financial statement – Profit and Loss Account, Balance sheet and related items.c) Companies Act 2013 - Reporting requirements under the Companies Act, 2013 including CARO, Other Important Provisions under the Companies Act, 2013 relating to Audit and Auditors and Rules made thereunder.d) Cost Terms and Concepts and Preparation of Cost sheete) Budget and Budgeting Controlf) Basic concepts of GST including Input Tax Credit, Tax Deducted at Sourceg) Preliminary understanding of Standards on Auditing issued by ICAIh) Concepts of Auditing – Audit Planning, Audit Programme, Audit Evidence, Audit Sampling, Internal Control, Internal Financial Control etc.i) Understanding around Audit of Procurement, Inventory Management, Administration, Hire to Retire.j) Methods of Physical verification of Inventory and Fixed Assets and related controlsk) Knowledge around Risks and controls for specific business processes: Procure to pay (P2P), Order to cash, Inventory Cycle, Hire to Retire, Supply Chain Management, Fixed Assets etc.l) Basic understanding of SAP and related modules viz. MM, FICOm) Knowledge of basic Concepts of Data Analytics in Internal Audit Domain

TATA STEEL

Internal Communication Form

	n) Knowledge of Basic IT Skills – MS Office (MS Word, PPT and Excel)
Corporate Audit Technical	<ul style="list-style-type: none"> a) Excavation work in different soil/rock etc. b) Painting work on steel and cemented surface. c) Design Mix of concrete, Ready Mix Concrete. d) Knowledge on structural work. e) Building construction (Residential/Industrial), Bridge/Culverts, Retaining wall, Drainage, sewerage etc f) Material Engineering (property and use of different of construction materials). g) Basic understanding of different type of BIS code used in Civil Engineering h) Surveying used for Civil engineering work i) Transportation Engineering (Road work, Railway/Track line work etc.) j) Knowledge on bill certification process for different civil engineering work. k) Methods of Physical verification of Inventory for bulk commodity l) Basic understanding of SAP and MM modules m) Knowledge of Basic IT Skills – MS Office (MS Word, PPT and Excel)
Corporate Communication	<ul style="list-style-type: none"> a) Internal Communications b) External communication c) Branding d) Content e) CFE f) Media Management
Design – Civil	<ul style="list-style-type: none"> a) Bending Moment b) Shear Force c) Deflection d) Welding & Bolting e) Welded & Bolted Connection f) Tension Member g) Compression Member. h) Plate Girder / Gantry Girder i) Column
Design – Electrical	<ul style="list-style-type: none"> a) Electrical Safety aspects considered in the design. b) Motor Power Calculation c) Type of brakes used and Calculation for brake size. d) Type of cables and Selection criteria of cables. e) Type of Control Schemes provided for VVVF Drives f) Selection of VVVF Drives g) Type of DSL Systems used. h) Power circuit with control scheme for RDOL feeder of a motor. i) Power circuit of VVVF Drive with dynamic braking for hoist motion.

TATA STEEL

Internal Communication Form

<p>Design-Mechanical</p>	<ul style="list-style-type: none"> a) Material-Different types (Steel, Brass, etc.), Properties (UTS, YS, Elongation, Density, Hardness, Modulus of elasticity, Modulus of rigidity, etc.) b) Heat Treatment (Normalizing, Annealing, Hardening, Case Carburizing, Tempering, etc) c) Shear force and Bending moment for cantilever and simply supported beam. d) Centre of gravity of different shape. e) Moment of inertia of different section such as T-Section, H-Section, Circular shaft, Hollow shaft etc. f) Helical Spring (Tension, Compression, Torsion) g) Rivet Joints (Types, Material, Use, etc) h) Basic concepts of Weld Joints such as fillet weld, Butt weld, Vee weld, etc. i) Design of Shafts to calculate different types of stresses such as bending, shear, torsion, etc. j) Anti-friction Bearing (Different types, use & Clearance) k) Torsion of solid and hollow shaft. l) Basic concept of Friction such as co-efficient of friction of different material etc.
<p>Electrical Maintenance</p>	<ul style="list-style-type: none"> a) Digital Electronics, Power Electronics and Electrical Drives b) Electrical Equipment (Switchgears, Protection, Relay, Cables etc.) c) Control Systems, Electrical Measurement, Transducers and Industrial Instrumentation, Field Sensors and Actuators d) Electrical Machines (AC/DC Motor, Transformer, etc.) e) EOT cranes f) PLC, DCS, SCADA, Data Communication and Networking g) Pollution Control Equipment and Measurement (ESP, Bag Filter etc.) h) General Safety on shop floor (Understanding safety systems like SOP, PSRM, MoC, PSSR, etc. and commonly used and interfaced safety standards like Work Permit, Positive Isolation, Gas Safety standard etc.) i) Electrical Safety (Electrical safety standards, IE rules, and Electrical safety in general) j) Electrical Maintenance (SAP PM, SMPs, maintenance policies, etc.)
<p>Electrical T&D</p>	<ul style="list-style-type: none"> a) Basic Electrical Engineering b) Cables and Selection criteria of cables c) Electrical Substation Equipment's d) Electrical Switchgears (EHV/HV/MV/LV) e) General Testing f) Indian Electricity Rules (Safety Regulation 2010) g) Power System (Generation and Distribution) h) Power System (Transmission & Distribution) i) Power Transformers j) Relay & Protection

TATA STEEL

Internal Communication Form

Engineering & Project	<ul style="list-style-type: none">a) Separation and Extraction of dustb) Bag Filters, ESP and other Mechanical Equipment's (Gear Box and ID Fans)c) Different types of conveyors and conveying systems (Belt, pneumatic, etc.)d) Bulk Material Handling systemse) Yard Equipment (stackers, wagon tippers, etc.)f) Testing of transformers & HT Sub-station equipmentg) Sub-station equipmenth) HT & LT cablesi) Single line drawings of Power Systemsj) Quality Control in Civil worksk) Underground Hindrancel) Construction Managementm) Study of Civil drawingsn) Quality Assurance in Civil & Structural work
Engineering Services	<ul style="list-style-type: none">a) Applied Mechanicsb) Strength of Materialsc) Design of Steel & Masonry Structuresd) Design of Reinforced Concrete Structuree) Estimating, costing and Valuationf) Surveyingg) Civil Engineering Drawingh) Concrete Technologyi) Transportation Enggj) Public Health Engg.k) Building Materialsl) Computer Application for Engg.m) Engineering Thermodynamicsn) Fluid Mechanics
Finance & Accounts	<ul style="list-style-type: none">a) Micro & Macro economicsb) Industrial Economicsc) Fundamentals of Marketingd) Consumer Behavioure) Marketing research and analyticsf) Branding through Integrated Marketing Communication (IMC) Strategyg) Digital and Social Media Marketing
Fuel Management	<ul style="list-style-type: none">a) Fuel Efficiencyb) Properties of Industrial Gases/By Product Gases/ Steam/Compressed Airc) Knowledge of ASU Plantd) Knowledge of CP/BF/PP/Mills/Power House/SMS Operations

TATA STEEL

Internal Communication Form

	<ul style="list-style-type: none">e) Boosters and Holdersf) Instrumentation and Measurementg) Distribution of the Gases and its Costing
HRM	<ul style="list-style-type: none">a) IRP/ERP Policyb) Dearness Allowancec) Social security schemes (FBS, EFBS, FSS etc.)d) Cluster system of manninge) Rules pertaining to service progression of new series at Jamshedpurf) Retrenchment compensationg) Domestic enquiryh) ESIi) Maternity benefit at TSLj) Subsistence allowance during suspension periodk) Grievance procedurel) Joint Departmental councilsm) LTCn) Labour Lawso) Performance Managementp) Employee Engagementq) Talent Managementr) Service Rules for Officer
Hot Rolling	<ul style="list-style-type: none">a) Iron-Carbon System, CCT & TTT Diagram & its useb) Recrystallization kineticsc) Thermo Mechanical Control Process (TMCP)d) Flat Rolling (Hot) Fundamentalse) Hot Rolling process – Equipment's and their functionsf) Basics of Fuel & Combustiong) Re-Heating Furnace Operation and Controlh) Knowledge of Rolls & Grinding in Hot Rollingi) Defects on HR Sheets, Genesis & Controlj) Basics of IATF 16949k) Basic knowledge of Heat Treatmentl) Knowledge of Different Steel Grades
Intelligence	<ul style="list-style-type: none">a) Basic knowledge of Intelligence trade craft - raising and running of source and contacts etcb) Basic knowledge of Intelligence agencies in India and their functioning.c) Understanding of trade unionism and major trade unions in India.d) Basic knowledge of labour laws and compliances.e) Knowledge of basic IT skill like MS office, Excel and PPT.f) Understanding of industrial securityg) Networking skill.h) Understanding of open-source channels of intelligence collection.i) Basics of stake holder management.

TATA STEEL

Internal Communication Form

	<ul style="list-style-type: none"> j) General knowledge related to industries in India. k) Report writing in English l) Political parties in India Internal security threats like terrorism, communalism, LWE activities etc.
Learning & Development – Electrical, Electronics & Instrumentation	<ul style="list-style-type: none"> a) Basic Electronics - AC Fundamental, Analog Electronics, Digital Electronics, b) Automation - Method of Measurement, Microprocessor and Microcontroller c) Electronic Weighing System d) Instrumentation e) ELECTRICAL - AC /DC Motors, Transformer, EOT Crane, Faults in Electrical systems, f) Power Electronics & Drives
Learning & Development – Mechanical	<ul style="list-style-type: none"> a) Rolling Contact Bearing b) Sliding Contact Bearing c) Power Transmission through Gears d) Mechanical Couplings e) Limit, Fit and Tolerance f) Welding and Gas Cutting/Plasma Arc Cutting g) Lubrication and Oil Conditioning Pumps, h) Fans and Compressors i) Belt Conveyor Systems j) Pipeline Valves and Fittings k) Hydraulics and Pneumatics Lifting Tools and Tackles l) Engineering Mechanics m) Theory of Machines n) Machine Design o) Fluid Mechanics p) Thermodynamics q) Thermal Engineering r) Engineering Materials Casting and Forming s) Machining and Machine Tool Operations t) Metrology and Inspection
Learning & Development – Metallurgy	<ul style="list-style-type: none"> a) Physical metallurgy b) Iron Making c) Steel Making d) Rolling Technology e) Refractory & Heating
Legal (Industrial & Litigation)	<ul style="list-style-type: none"> a) Constitutional Law b) Criminal Procedure Code, 1973 c) Civil Procedure Code, 1908 d) Arbitration and Conciliation Act, 1996 e) Transfer of Property Act, 1882 f) Indian Contract Act, 1872 g) Labour Laws- Factories Act, 1948, Workmen Compensation Act, 1923,

TATA STEEL

Internal Communication Form

	<ul style="list-style-type: none">h) Insolvency & Bankruptcy Code, 2016i) Environmental Laws including Environment Protection Act, 1986, Air (Prevention & Control of Pollution) Act, 1981 & Water (Prevention & Control of Pollution) Act, 1974.j) Negotiable Instruments Act, 1881
Logistics and Supply Chain	<ul style="list-style-type: none">a) Rail Logisticsb) Road Transportationc) Coastal Shipmentd) Documentatione) Warehousingf) Network Designg) Sustainability in logisticsh) Logistics Planning and Schedulingi) Unitization, Loading and lashingj) Forecasting, Sampling Techniquesk) Lean, PERT/ CPMl) Supply Chain Mgtm) Basics of Operations Researchn) Statistical Quality Controlo) Logistics Mgt at Tata Steelp) IT, Digital, Tableau, RPAq) SNOP and OG & F Process at Tata Steel
One IT	<ul style="list-style-type: none">a) SQL DBb) MVC .netc) IT System development life cycled) Computer Network –<ul style="list-style-type: none">i. LAN, WAN and Internet – Basicsii. Switch, Router - Basicse) Windows 10 operating system – Basic featuresf) Antivirus – Basicsg) Server – Basics
Manufacturing (TGS/SMD)	<ul style="list-style-type: none">a) Fabrication & Welding: Theory of fabrication & Welding. Welding processes (eg. SMAW, GMAW, SAW etc.) & weldability of material like MS, SS, CS, CI etc., Weld positioners and weld fixtures, Welding parameters, their relation & deposit calculation and welding time calculation and their impact on the weld quality for various welding processes, Different kinds of Power sources, auxiliaries like wire feeder, torch, holder, conduit, tip etc.b) Gas cutting: Cutting parameters like Cut Oxy pressure, LPG flow rate, cutting speed etc. & their impact on quality of gas cutting, Selection of nozzles for various cutting and knowledge of plasma cutting, Lead in & lead out and precautions when input is rusted or flatc) Limit, Fit and Tolerance & Measuring Instruments

TATA STEEL

Internal Communication Form

	<p>d) Engineering Drawing: Basic concepts of engineering dwg, Angle of projection, types of engineering drawing & their application, Jigs and fixture.</p> <p>e) Mech Assembly Practice: Couplings, Bearings, Gears, Power Transmission, Levelling & Alignment. Balancing (dynamic and static).</p> <p>f) Fluid Power: Hydraulics & Pneumatics.</p> <p>g) Lubrication Systems.</p> <p>h) Codes & Standards applicable for Fabrication & Assembly, ISO, TQM</p> <p>i) Work Place Safety & M/c Guarding</p> <p>j) Mass manufacturing, Lean manufacturing & fabrication shop lay out</p>
Mechanical Maintenance	<p>a) Engineering Mechanics</p> <p>b) Strength of Materials</p> <p>c) Engineering Thermodynamics</p> <p>d) Fluid Mechanics</p> <p>e) Mechanisms and Dynamics of Machines</p> <p>f) Manufacturing Processes & Industrial Piping</p> <p>g) Fits & Tolerances & Assembly Practices</p> <p>h) Gears & Bearings</p> <p>i) Lubrication / Lubricants</p> <p>j) Fan, Blower, Pumps and Valves & Compressors</p> <p>k) Seals</p> <p>l) Hydraulics-Oil Cleanliness ISO / NAS</p> <p>m) Hydraulic Valves, Cylinders & 'O' rings</p> <p>n) Pneumatics</p>
Mining Operations (Coal)	<p>a) Excavation planning</p> <p>b) Dump and slope stability</p> <p>c) Drilling and Blasting</p> <p>d) Coal Quality</p> <p>e) Basic understanding of IT infrastructure/ usage</p> <p>f) Mine Machinery & equipment selection</p> <p>g) Environmental laws & statutory clearances required to operate a Mine</p> <p>h) Haul road & Dump design, maintenance & Reclamation</p> <p>i) Health and Mine safety legislation (DGMS)</p> <p>j) Mining Geology</p>
Mining Operations (Metal)	<p>a) Excavation planning</p> <p>b) Dump and slope stability</p> <p>c) Drilling and Blasting</p> <p>d) Metal Quality</p> <p>e) Basic understanding of IT infrastructure/ usage</p> <p>f) Mine Machinery & equipment selection</p> <p>g) Environmental laws & statutory clearances required to operate a Mine</p>

TATA STEEL

Internal Communication Form

	<ul style="list-style-type: none">h) Haul road & Dump design, maintenance & Reclamationi) Health and Mine safety legislation (DGMS)j) Mining Geology
Natural Resource Division Chemical	<ul style="list-style-type: none">a) Atomic structureb) Radio Activityc) Periodicity of elementsd) General Properties of Atoms and Moleculese) Oxidation and Reduction, Valencef) Chemical Equilibriumg) Ionic equilibriah) Acids and Basesi) Buffersj) Reaction Intermediates and Reagentk) Solutions and Colligative Propertiesl) Elementary Stereochemistrym) Noble Gasesn) Titrimetric Analysiso) Oxidation-Reduction Titrimetryp) Iodo / Iodometric Titrationsq) Basic sampling conceptsr) Measurement and Quality Controls) Statistics
New Material Business (Quality Assurance)	<ul style="list-style-type: none">a) TQM Basics,b) Safety - Process Safety,c) ISO 9000 system,d) Design documentation,e) Quality Audit,f) Basic IT Skill,g) Record Keeping.
Power Plant Operations	<ul style="list-style-type: none">a) Boiler (Basic design and construction, Fuel, Combustion, Operational concepts and Performance)b) Water Chemistry (Concepts and Control)c) Steam Turbine (Operational concepts and Performance)d) Pumps (Operational concepts and Performance)e) Fans and Compressors (Operational concepts and Performance)f) Heat Exchangers (Concepts and Performance)g) Materials and Metallurgy (Concepts and Utilization)h) Fundamentals of Electrics / Instrumentationi) Power plant auxiliaries including CW System, compressed air system, Lube oil system, Furnace draft & flue gas system, Fuel supply system.j) Engineering drawing

TATA STEEL

Internal Communication Form

Product Application Group	<ul style="list-style-type: none">a) Basics of steel making, hot rolling, re-bar, wire rolling, cold rolling, galvanizingb) Testing of steels (Tensile, Hardness, Chemical etc)c) Quality assuranced) Knowledge of different steel gradese) Basic customer end process (tube making, rolling, forming, welding)
Product Technology (Quality Assurance)	<ul style="list-style-type: none">a) Knowledge of Primary Steel Making Processesb) Secondary metallurgyc) Casting processd) Casting defects (Genesis & Control)e) Steel Making Thermodynamicsf) Mechanical Metallurgyg) Basics of flat product Rolling and defectsh) Knowledge of Different Steel Gradesi) Iron-Carbon System, CCT & TTT Diagram & its usej) Quality assurancek) Basics of IATF 16949l) Knowledge of Total Quality Management
Refractories	<ul style="list-style-type: none">a) Basics of refractory (Type of refractory, different shape, Properties of refractory)b) Refractory Raw materialsc) Monolithic (Mortar, Castable, Ramming mass, Gunning mass, DVM, Plastic mass)d) Coke Plant refractory (Battery construction, CDQ)e) Iron making Refractory (Blast furnace, sinter and pellet)f) Steel making refractory (BOF, Ladle, RH, Tundish, Caster and black refractory, Mearz kiln)g) Mills Refractory (Different type of reheating furnaces)h) Insulation Refractory (insulation brick, insulation castable and different type of fibres and ceramic product)i) Refractory sample preparation and different testing procedure.j) Phase Diagram (binary and ternary type)
Safety	<ul style="list-style-type: none">a) Hazard Identification & Risk Assessment (Recalibrated Risk Matrix)b) Fundamentals of Process safetyc) Behaviour based safetyd) Emergency Preparednesse) Work Permit & Access controlf) Electrical Safetyg) Safety in Material Handlingh) Road & Rail safetyi) Occupational Health, Ergonomics & Industrial Hygiene

TATA STEEL

Internal Communication Form

	<ul style="list-style-type: none"> j) Fire safety k) Contractor Safety management l) Safety Legislation (Factories Act & State Rules) m) Gas Safety n) Working at height o) Positive Isolation p) Confined space Safety q) Knowledge on important safety standard for e.g., Excavation, Transportation, EOT Crane etc. r) Knowledge on Mechanical Integrity & Quality Assurance
Sampling	<ul style="list-style-type: none"> a) General Aptitude b) Basic Statistics c) General properties of Atoms and molecules d) Oxidation and reduction e) Valence f) Chemical Equilibrium g) Ionic Equilibria h) Acids and bases, Buffers i) Titrimetric Analysis j) Basic sampling concepts k) National and International standards for sample collection and preparation of iron ore, manganese ore, limestone/dolomite, coal etc l) Measurement and Quality Control m) Quality Assurance n) Blending, blend planning o) Understanding of impacts of various ore quality parameters in customer processes in relation to iron & steel industry p) Knowledge of sample collection & preparation equipment, general maintenance and calibration requirement
Security	<ul style="list-style-type: none"> a) Physical Security Infrastructure b) Physical Security Operations c) Crime Control d) Emergency and Disaster Management e) Integrated Security System – Convergence of Physical Security with IT f) Law relevant to Security g) Security Risk Assessment h) Workplace Safety i) Collaboration, Contract Management & Engagement j) Behavioral Skills s) Organizational Skills
Steel Making	<ul style="list-style-type: none"> a) Extractive Metallurgy - Iron Making and Steel Making b) External Hot Metal Treatment – Process & control system c) Primary Steel Making Processes – Raw materials, different processes and control, Special practices, Steel making reactions d) Secondary Metallurgy- Different steel refining processes, Grades of Steel, Iron - Carbon Diagram

TATA STEEL

Internal Communication Form

	<ul style="list-style-type: none">e) Casting Process: Role of different casting accessories and casting practices.f) Casting defects: Slab casting Defects and Billet casting defect, Causes and its counter measure.g) Steel Making Thermodynamics: Law of thermodynamics, Enthalpy, Entropy, Gibbs free energy, Ellingham diagram, Heat capacity.h) Steel Making Refractory: - Converter refractory and Ladle refractory, its type of usage and maintenance.i) Ferro Alloys: Application of different ferro alloys in steel making process.j) EAF technology: Fundamentals of Electric arc furnace
Wire Drawing	<ul style="list-style-type: none">a) Wire rod cleaning (pickling & mechanical descaling) and coatingb) Wire drawing processc) Heat treatments in wire drawingd) Coatings in wiree) Mechanical properties of wiref) Applications of wireg) Productivity concepts in wire manufacturingh) Dies and lubricants used in wire manufacturing
Wire Rod Rolling	<ul style="list-style-type: none">a) Iron-Carbon System, CCT & TTT Diagramb) Basics of Fuel & Combustionc) Re-Heating Furnace Operation and Controld) Long Product rolling fundamentalse) Long Product rolling mill equipmentf) Pass Design Fundamentalsg) Wire rod & Rebar defectsh) Knowledge of Roll materialsi) Rolling Mill Controlsj) Different Grades of Wire Rod and their Application