

AJE-B9 & B10 (2nd & 3rd session)
08-07-2023 to 26-10-2024(C&W-26, Workshop-15, Design & Drawing-01)
Class Teacher- Shri. Ratnesh Srivastava

Days/Period	I (9:40-10.40)	II (10:40-11.40)	III (11.55-12.55)	12:55 to 13:45 L U N C H	IV (1.45-2.45)	V (2.45-3.45)	VI (4.00-5.00)
Monday	AKS	PKS	NCJ		AdS	RS	PR
Tuesday	PKS	NCJ	AdS		RS	PR	DK
Wednesday	NCJ	AdS	RS		PR	DK	AS
Thursday	AdS	RS	PR		DK	AS	AKS
Friday	RS	PR	DK		AS	AKS	PKS
Saturday	9:40-10:35 AdS	10:35-11:30 PKS	11:40-12:35 NCJ	12:35-01:30 AKS			

MRT-07: Shri.PrateekSrivastava.

MRT-09: Shri.AvadheshKumar (Ch-01 to 06),Shri PushpakRanjan (Ch. 07 to 10)

MRT-10: Shri.N.CJaiswal (Ch-01 to 05), Shri. Ratnesh Chandra Srivastava (Ch.06 to 11)

MCT-01: Shri.PushpakRanjan,Shri.AbhishekShukla,Shri.Dipesh, Shri. Adarsh Soni, Shri. Ratnesh Chandra Srivastava.

MCT-02: Shri.AvadheshKumar, Shri.N.C.Jaiswal,Shri.PushpakRanjan,Shri.AbhishekShukla,Shri.Dipesh Kumar,
Shri. Adarsh Soni, Shri. Ratnesh Chandra Srivastava.

MWT-01:Shri.N.CJaiswal,Shri.Dipesh, Shri. Adarsh Soni, Shri. Ratnesh Chandra Srivastava.

MWT-02: Shri. Prateek Srivastava, Shri. N.C Jaiswal, Shri. Pushpak Ranjan, Shri. Abhishek Shukla, Shri.Dipesh Kumar,
Shri. Adarsh Soni, Shri. Ratnesh Chandra Srivastava.

MWT-04:

CarriageShop:Shri.Dipesh Kumar(Ch-01 to 14) & Shri. Ratnesh Chandra Srivastava (Ch- 15 to 25)

WagonShop:Shri.PushpakRanjan.

WheelShop:Shri. Adarsh Soni

MachineShop:Shri.N.CJaiswal

Mill WrightShop: Shri.AbhishekShukla.

Design & Drawing : Shri. N.C Jaiswal (01 Week)

Shri. Prateek Srivastava (01Week)

Sr. Lecturer(I/c)

SUBJECT NAME	TENDERS & CONTRACT MANAGEMENT
SUBJECT CODE	MRT-07
MODULE	MSE, MJR & MJJ

Sri. Prateek Srivastava

SL NO.	TOPIC	TIME IN HRS
1	Introduction on Estimate preparation to sanctioning and from Detailed Estimate to entering into contract agreement	02
2	Overview of contract management	02
3	Types of contracts, revenue contracts / work contracts, schedule of powers for approval of works, works programme	03
4	Service Contracts, GCC for services, SBD	03
5	Initiation of tenders, Types of tenders, Selection of tenders Sanction to float tender & Tender notice	03
6	Preparation of tender documents, Elements of tender document, General conditions of contract, Special conditions of contract, Tender rules and clauses	03
7	Awareness about features of IREPS, Tender opening and processing, Opening of tenders, Tabulation statement & Briefing note	03
8	Finalization of tenders - Technical evaluation, Tender committee nomination, Tender committee deliberations and recommendations	03
9	Awarding of Contract, Acceptance of tender, Issue of letter of acceptance & Starting of contract	03
10	Execution of Contract- Fulfillment of contract obligations, Inspection of work, Record of work done, Payment to the contract & Monitoring of progress, Shramik kalyan portal	03
11	Vigilance angle to contracts, Do's and Don'ts, Arbitration	02
12	Case Studies, cases in workshops, open line & Diesel Sheds, Mechanized Laundry Contract under BOOT model	04
13	Review	02
	Total	36

Asst. M. L.
4/11/2023

SUBJECT NAME	MANAGERIAL SKILLS
SUBJECT CODE	MRT-09
MODULE	MSE, MJR & MJI

Avadhesh Kumar & Pushpak Ranjan

SL NO.	TOPIC	TIME IN HRS
1	Leadership AKS	12
2	Motivation AKS	06
3	Communication Skills AKS	09
4	Time Management AKS	03
5	Stress management AKS	03
6	Ethical Decision-making AKS	03
7	Computer Applications: Word, Excel, Power Point; including Hands on in Computer Lab PR	09
8	Project management Concepts PR	15
9	Teamwork & Teambuilding PR	06
10	Negotiations PR	06
	Total	72

Avadhesh k
5/11/2022

SUBJECT NAME	Welding and Non-Destructive Testing
SUBJECT CODE	MRT-10
MODULE	MJR & MJJ-W

Sri. N.C. Jaiswal & Sri. R. C. Srivastava

SL NO.	TOPIC	TIME IN HRS
1	Welding - Principle and applications in various fabrication work, different types of Welding Processes, Weldability of material (MS & SS) and Welding metallurgy NCT	03
2	Arc welding process and principle, tools required for Arc welding, Setting welding current & voltage, Maintenance of welding machine, SS Welding, Welding of dissimilar metals NCT	06
3	Job preparation, Electrodes, Electrode selection for difference welding work, Types of Joints, Welding Symbols used in Drawings NCT	03
4	Safety precautions, Do's & Don'ts NCT	02
5	Special Welding Techniques: CO ₂ welding- Method, precautions etc.; C.I. welding; MIG & TIG welding work; seam welding; sub merged arc welding; flash butt welding NCT	06
6	Different Cutting and Gauging Processes, Plasma Cutting: Electrode Arc Cutting, OA Cutting, Laser Cutting RCS	03
7	Introduction to NDT, Various types of NDT method like LPT, Magna flux, Radiography, Ultra Sonic Flaw Detection etc RCS	04
8	Defects & remedies in welding RCS	02
9	Robotic Welding, Welding Automation RCS	02
10	ISO 3834, WPS Preparation and Welder Qualification RCS	03
11	Review	02
	Total	36

Arvind L
4/11/2022

SUBJECT NAME	C & W THEORY-02
SUBJECT CODE	MCT-02
MODULE	MSE-C, MJR-C, MJI-C

Sl. No.	Topic	Duration in Hours
1	Train lighting & Air-Conditioning: Maintenance of Battery and Battery box, RMPU, Lay-out of TL & AC equipment in Non-AC/AC and Power cars, Alternator, Invertor, RRU, IVC (inter vehicle couplers), SG, EOG, HOG AKS & NCT	24
2	Toilet Systems: WRA and plumbing system, Bio toilets & Bio-vacuum toilets Sri Pushpak Ranjan	06
3	EnHM: MCC, OBHS, CTS, Pest control, Rodent control & Bed bugs control, Linen distribution, laundry: BOOT Laundry Equipment, disposal of solid waste, quick watering system, automatic coach washing plant, waste water recycling, Station cleaning, cleaning of IT device, electrical equipment Sri A. Shukla	24
4	Design features of various wagons including Stainless steel wagons, Aluminum wagons, Higher Axle load wagons, BOBRN Wagon including its door opening mechanism Sri Dipesh	18
5	New pattern of Train examination of goods stock-CC/Premium/End to End, long haul, heavy haul, Issue of BPC, e-BPC, FMM AKS	06
6	Wagon manufacturing - use of huck bolts NCT	06
7	ODC: classification, procedure for sanction, movement guidelines	06
8	Container wagons-BLC Train operation and maintenance practice	06
9	IRCA Part III RCS	12
10	Repair & maintenance of goods stock-ROH Sri Pushpak Ranjan	12
11	Tank Wagons - repairs & maintenance Sri Pushpak Ranjan	06
12	Twin pipe air brake system in wagon, BMBS in wagon, Brake Binding- Causes & remedies Sri Pushpak Ranjan	12
13	Train Parting - Causes & remedies NCT	12
14	Tippler operation, Silo loading; recovery of damages during loading unloading from private siding, warranty claims of wagon items Sri Pushpak Ranjan	06
15	Accident Relief Train ADS	06
16	Derailment Mechanism ADS	06
17	Accident Investigation, CRS Inquiry ADS	06
18	Disaster Management - Role of Supervisors RCS	15
19	Prevention of accident on C&W account RCS	12
20	ART/MFD/SPART/140T Crane Maintenance RCS	09
21	Layout of Coaching & goods stock yard and its infrastructural facilities Sri Dipesh	12
22	Weigh bridge: AMC, test special, Calibration, action to be taken in case of overloading Sri Dipesh	06
23	WILD, Hot Box detector, Track side bogie monitoring system, Action to be taken on reporting NCT	06

Sl. No.	Topic	Duration in Hours
24	Depot stores management	06
25	Marshaling of trains	06
26	Role of Supervisors to minimize sick figures/coach detachment/ineffective %	06
27	Visit to major coaching depot	06
28	Visit to major goods depot	18
29	Review	12
Total		288

Shr. N.C. Jaiswal
Pushpak Rajan

AKS
(Arvind Kumar)

Arvind Kumar
21/11/2024

SUBJECT NAME	WORKSHOP THEORY -01
SUBJECT CODE	MWT-01
MODULE	MSE-W, MJR-W

Sl. No	Topic	Duration in Hours
1	Organizational Set up of Railway from Board to Workshop RCS	02
2	Function of each department in short RCS	02
3	Layout of Workshop with important facilities for each shop function	06
4	Role of Workshop, diff shops & its functions in brief, Attendance monitoring: GA card punching/Digital/Bio metric Sri Dipesh	12
5	Reporting in Workshops- Targets, Planning, Statistics, Workshop Portal, 100 days failure statistics NCTJ	02
6	Role of Supervisors in Workshop & their responsibilities NCTJ	03
7	Material Handling Methods & Equipment ADS	06
8	Machinery & Plant Maintenance ADS	12
9	Jigs, Fixtures & Gauges Sri Dipesh	12
10	Quality Management System (QMS) & TQM ADS	12
11	ISO & EMS System in Workshop. Introduction to ISO 9001, ISO 14001 & ISO 50001, IMS 14001 & OHSAS 18001, Green-Co Rating, ISO 3834, 5S, Lean six Sigma ADS	06
12	Value Engineering, types of needs and demands Sri Dipesh	03
13	Production Planning and scheduling Sri Dipesh	06
14	Process inventory control Sri Dipesh	06
15	Industrial Safety Requirement & Procedure ADS	06
16	Drawing usage, preparation, Modification & its record maintenance ADS	03
17	Workshop Specific Labour laws, HOER, Workman Compensation Act ADS	02
18	Pollution and its Control Measures in Workshops, Solid Waste Management, Effluent Treatment NCTJ	03
19	Industry 4.0, CNC Machines NCTJ	02
20	Revision	02
	Total	108

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4/11/2023

SUBJECT NAME	WORKSHOP THEORY -02
SUBJECT CODE	MWT-02
MODULE	MSE-W, MJR-W

Sl. No	Topic	Duration in Hours
1	Work Measurement Techniques, Procedures & Analytical Methods	02
2	Work Sampling Methods	02
3	Work Sampling Techniques & Probability Theory	02
4	Incentive Scheme, Rate Fixing, Normalizing & AT fixing, Work Order System & Procedure, Inspection Report sheets	06
5	Method Study Definition, Objectives & Procedures, On Cost booking & methods to reduce on cost	12
6	Job Evaluation & Merit Rating	02
7	Job Costing	06
8	Inspection & Testing Procedure- DT & NDT Methods	03
9	CMT Lab functions	06
10	POH of different types of Wagons in Workshops, POH of different types of Bogies of Wagons, Suspension System in wagon bogies, Spring failure: causes and remedies	04
11	POH of Stainless Wagons in Workshops, Rehabilitation and Conversion of Wagons	04
12	POH of ICF and LHB Coaches in Workshops	04
13	Details and Comparison of ICF and FIAT Bogies in Coaches, POH of Bogies and their components, Suspension system in coach bogies, Spring failure: causes and remedies	04
14	Coach Body Repair, Passenger Amenity Items, Bio Toilets & Bio-vacuum Toilet fitment during POH	06
15	POH of TL & AC system of Coaches (ICF & LHB)	18
16	Corrosion Repair Practice in Coaches & Wagons & Underframe	12
17	Air Brake System of Coaches & Wagons, Twin pipe brake system in wagons, Coupler: Balance draft Gears, POH Procedure & Testing methods	06
18	POH of different types of Locomotives in Workshops	02
19	Wheel Shop, Flow and Maintenance Wheels, POH of Loco, Coaches and Wagon Bearings in Shops.	09
20	NTXR Examination on Coaches & Wagons, NTXR reject able defects, Local Passing.	03
21	Role of Stores Department in Workshops, Stock & Non-Stock Items, Stocking, EAC & AAC of Material.	03
22	Stores drawl procedure	03

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SI. No	Topic	Duration in Hours
23	Stocking Application procedure for new stock items, Standardization, Rationalization, Specification, Purchase Cycle NCT	06
24	Procurement of Non-Stock Items, Indenting, Requisitions, Technical Suitability, Local Purchase, IREPS, iMMIS, GeM, long term contracts NCT	03
25	Manufacture activities in Workshops NCT	03
26	Workshop Manufacturing Suspense NCT	02 - NCT
27	Condemnation of Coaches, Wagons and Locomotives, Excluded Fittings NCT	= 02 - P
28	Condemnation of Ferrous & Non-Ferrous Scrap and its return to stores NCT	03
29	Machinery, Plant & Equipment used in Workshops NCT	06
30	Painting schedule and types of paints used in C&W, Powder Coating, Vinyl Wrapping, Grit Blasting ADS	06
31	Warranty claims of coaching and wagon items ADS	02 - P
32	SPART/SPRMV & 140 T Crane maintenance practices ADS	04 - P
32	Workshop Visit	18
33	Revision	06
	Total	180

174
 A/c
 9/11/2023

SUBJECT NAME	WORKSHOP THEORY -04
SUBJECT CODE	MWT-04
MODULE	MJI-W

Note: To be trained in any one of the following subjects depending on the trade

Carriage Shop

Sri. Dipesh & RCS

Sri Dipesh	1	Layout, Organization structure, different sections of the shop
	2	Salient features and constructional difference of coaches, repair practice at all stage of POH of different types of coaching stock. Modification to coaches for high speed running and precaution taken there to.
	3	Lifting of coaches- dismantling of bogies, wheels etc
	4	Repair, Overhaul & testing of bogies frame, bogie components
	5	Repair, Overhaul & testing of springs, draft gear, buffing gear
	6	Repair, Overhaul & testing of Air brake components
	7	Repair, Overhaul & Inspection of Wheel & Roller Bearings
	8	Repair, Overhaul & testing of water tank
	9	Body repairs
	10	Carpentry work.
	11	Lowering and Levelling of coaches.
	12	Corrosion repairs
	13	Modifications done on coaching stock
	14	Provision of safety fittings, provision of amenity fittings.
	15	Painting of Coaches
	16	NTXR examination
	17	Train lighting,
	18	DEMU/EMU Coach POH Workshop
	19	Repair and maintenance of Bio-Toilets, Bio-Vacuum toilets
	20	Shop wise staff strength, material requirement, M&P, T&P and targets
	21	Attention of accident involved coaches & conversion of coaches
	22	POH practices of buffers and couplers
	23	Air conditioning and Train lighting
	24	RSP works and modifications
	25	IMS cell, Drawing, Safety cell, Planning, Budget, PCO, Rate fixing, Progress, Inspection sections

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4/11/23*

Wagon Shop Sri Pushpak Ranjan

- 1 Layout, Organization structure, Different sections of the shop
- 2 POH procedure for different types of wagons like BOXN, BOXC etc
- 3 POH procedure of tank wagons
- 4 POH procedure of Brake Van
- 5 POH of special wagons
- 6 Lifting & Lowering
- 7 Repair, Overhaul & testing of bogies frame, bogie components
- 8 Repair, Overhaul & testing of Air brake components
- 9 Repair, Overhaul & testing of springs, draft gear, buffing gear
- 10 Repair Overhaul & Inspection of Wheel & Roller Bearings
- 11 Body Repairs
- 12 Corrosion Repairs
- 13 Modifications done on goods stock
- 14 Painting of Wagons
- 15 NTXR Examination
- 16 Shop wise staff strength, material requirement, M&P, T&P and targets
- 17 Attention of accident involved wagons & conversion of wagons
- 18 POH practices of buffers and couplers
- 19 RSP works and modifications
- 20 IMS cell, Drawing, safety cell, Planning, Budget, Progress sections

Wheel Shop Sri Adarsh Soni

- 1 Layout, Organization structure, different sections of the shop
- 2 Design, construction, operation and maintenance of wheels of different types of rolling stock.
- 3 Repair procedure for Wheels & Axles
- 4 Repair procedure for Roller bearings
- 5 Wheel defects and repairs.
- 6 Machinery & plant required for wheel shop, their operation and maintenance
- 7 Inspection of wheel, axles and bearings
- 8 Disposal of condemned tyres and axles, reclamation procedure in wheel shop

Adarsh S
21/11/2023

Machine Shop NCJ

- 1 Layout, Organization structure, different sections of the shop
- 2 Lathes
- 3 Milling machines
- 4 Drilling & Boring Machines
- 5 Shaper, Planer & Slotting machines
- 6 Grinding machines
- 7 Special types of machines
- 8 Tools & Cutters, tool diagrams
- 9 Limits, fits & tolerances, allowance & interchangeability, Jigs & fixtures
- 10 Surface finish, various types of gauges and their use
- 11 Cutting fluid their use in various machine
- 12 Cutting speed, feed, depth of cut
- 13 Manufacturing process of some major components for Rolling stock

Mill Wright Shop Sri Abhishek Shukla

- 1 Layout, Organization structure, Different sections of the shop
- 2 Transmission of Power-Belt, Chain, gear drive, clutches and couplings, Hydraulic system
- 3 Design, construction and maintenance of EOT cranes and traverser and its subassemblies
- 4 Design, construction and maintenance of Rail and Road cranes, breakdown cranes
- 5 Design, construction and maintenance of various machine tools
- 6 Installation of machinery and plant (Foundation Engineering)
- 7 Design, construction and maintenance of hydraulic pressure, steam and pneumatic hammer, drop forging hammer, bolt and nut forging machine, wheel lathe, under pit lathe. Weigh bridges and weighing machine.
- 8 Design, construction and maintenance of compressor and Distribution of compressed air.
- 9 Design construction and maintenance of Hydraulic pumps
- 10 Knowledge of hydraulic and pneumatic circuits.
- 11 Knowledge of logic circuits use in CNC machines.
- 12 Plan, preventive maintenance
- 13 Overhaul and reconditioning of various types of plants and equipment

Drawing

Sri N.C. Jaiswal (1 week)
Sri Prateek Srivastava (1 week)

Ar. Shukla
9/11/2022