

<p align="center"><b>Batch – IJE(D9&amp; D10)</b>  <b>3<sup>rd</sup> Session w.e.f. 21/04/2025</b>  <b>Class Teacher: Avadhesh Kumar</b></p>							
<b>Days/Period</b>	<b>I (09:40-10:40)</b>	<b>II (10:40-11:40)</b>	<b>III (11:55-12:55)</b>	<p align="center"><b>12:55 to 01:45</b>  <b>LUNCH</b></p>	<b>IV (01:45-02:45)</b>	<b>V (02:45-03:45)</b>	<b>VI (04:00-05:00)</b>
Monday	ADS	RCS	AY		AKS	AH	MK
Tuesday	ANG	AY	ADS		AH	MK	NCJ
Wednesday	RCS	AS	ANG		MK	AS	ALS
Thursday	AKS	DK	MK		NCJ	ALS	AY
Friday	AY	ANG	NCJ		ALS	PR	MK
Saturday	9:40-10:35 RCS	10:35-11:30 AH	11:40-12:35 ADS	12:35-01:30 NCJ			

MRT- 06AS (Ch. 01-08) & ANS (Ch. 09-14).

MRT- 07 MK (Ch. 01-07) & RCS (Ch. 08-12).

MRT- 09 AKS (Ch. 01-06) & ADS (Ch. 07-10).

MRT- 14 ADS (Ch. 01-06).

MRT- 15 RCS (Ch. 01-10).

MCT- 01 AH, RCS,PR, DK, AS, ALS As attached....

MWT- 03 ALS, AY, DK, ANS, ADS,AS, PR, AH, MK, NCJ As attached....

MDT-01 MK,RCS,ANG,ADS,AKS.

**Avadhesh  
Kumar**  Digitally signed by  
Avadhesh Kumar  
Date: 2025.04.25  
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**Sr. Lecturer(I/c)**  
**STC/CB/LKO**

SUBJECT NAME	INDUSTRIAL SAFETY. FIRST AID & FIRE FIGHTING
SUBJECT CODE	MRT-06
MODULE	MSE, MJR & MJI

AS - Ch. 1 - 8  
ANS - Ch. 9 - 14

SL NO.			
AS	1	Causes of fire; Identification of unsafe conditions and unsafe acts	02
	2	Identifying and handling of various types of fire extinguishers	04
	3	Precautions to be taken while extinguishing fire	02
	4	Render first aid to the burn injuries Render first aid to persons affected by suffocation; Communication	02
	5	Scope and Rules of first Aid; Structure and function of body	02
	6	General idea about circulation of blood; Wound & Hemorrhages; Dressing & Bandages	02
	7	Shock & its management; Asphyxia & Artificial respiration	02
	8	Injuries to bones & joints - fractures; Unconsciousness and General rules for the treatments of unconsciousness person	02
ANS	9	Practical demonstration of Transport of injured persons, stretcher exercises, preparing and blanketing stretcher, Basic Life Support Training	03
	10	Principles of Accident, Causation & its Prevention, Unsafe Acts & Unsafe Conditions	03
	11	House Keeping, EOT Crane Operation & Material Handling; 5S	02
	12	Safety on Small Tools, Electrical Appliances, Welding & cutting gases, Working on heights	02
	13	Use of PPE, Mock Drills	03
	14	Role of Supervisors on Safety, Accident Reporting & Investigations	02
	15	Review	03
<b>Total</b>		<b>36</b>	

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

MK - Ch. 1-7  
RCS - Ch. 8-12

SL NO.	TOPIC	TIME IN HRS
MK	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
RCS	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
	<b>Total</b>	<b>36</b>

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

AKS - Ch. 1 - 6  
ADS - Ch. 7 - 10

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

SUBJECT NAME	COMPUTER AWARENESS	ADS
SUBJECT CODE	MRT-14	
MODULE	MJI, MJP	

SL NO.	TOPIC	TIME IN HRS
1	Introduction to Computers and Application of Computers/Windows, CMM, FMM	06
2	MS Word	09
3	MS Excel	09
4	MS Power Point	06
5	Internet usage	03
6	Review	03
<b>Total</b>		<b>36</b>

ADS

SUBJECT NAME	TECHNICAL ENGLISH	RCS
SUBJECT CODE	MRT-15	
MODULE	MJI	

SL NO.	TOPIC	TIME IN HRS
1	Communication Vocabulary	03
2	Grammar - Important terms	06
3	Common Errors	06
4	Precis writing, Expansion of given idea	03
5	Comprehension	03
6	Official Correspondence	03
7	Business Correspondence	03
8	Social Correspondence	03
9	General Report Writing	03
10	Technical Report Writing	03
	<b>Total</b>	<b>36</b>

SUBJECT NAME C & W THEORY-01  
 SUBJECT CODE MCT-01  
 MODULE MSE-C, MJR-C, MJI-C

Sl. No.	Topic	Duration in Hours
1	Design, Repair & Maintenance of Shell ICF, LHB, MEMU/EMU coaches and all variants like double decker, Tejas, Gatiman, Hamsafar, Dindayalu, Project Swarn & Project Utkrith, Train-sets etc.	18
2	Wheel & its defects, Wheel shelling in LHB coaches	06
3	Axles & bearings of all rolling stocks including MSU	06
4	Air Brake System: Components, BMBC, EP brake, WSP, Pipe joints, Testing of coach brake, Loco capability test, continuity test	32
5	Repair and maintenance of Passenger Amenities and Safety fittings	06
6	Bogie and Suspension system including Air Suspension: Failure & remedial features, Repair and Maintenance, FIBA	12
7	Couplings & Buffers, IRS, CBC, Schaku, Dellnor, BDG: Design, repair and maintenance	18
8	Train Examination -Coaches: Maintenance schedules, Revised RPC-IV, Issue of BPC, CMM, En-route trouble shooting	08
9	Infrastructure requirement for coach maintenance: Pit lay-out, Sick line lay-out, Rake link, M&P Pit occupation chart, automated coach washing plant, warranty claims of coaching items	18
10	IRCA Part IV, Modifications, TSOs, CAIs, Technical Pamphlets	06
11	Latest JPOs in Coaching Stock	02
12	Visit to major coaching depot	06
13	Review	06
	<b>Total</b>	<b>144</b>

SUBJECT NAME	WORKSHOP THEORY -03
SUBJECT CODE	MWT-03
MODULE	MJI-W

Sl. No	Topic	Duration in Hours
1	Organization setup of Railway from Board to workshop	02
2	Function of each department in short	02
3	Layout of workshop with important facilities for each shop functions	06
4	Role of workshop diff shops & its functions in brief, Attendance monitoring: GA card punching/Digital/Bio metric	08
5	Reporting in Workshops- Targets, Planning, Statistics, Workshop Portal, 100 days failure statistics	02
6	Role of supervisors in workshop & their responsibilities	02
7	Material handling methods & Equipment	06
8	Jigs, Fixture & Gauges	08
9	Quality managements item (QMS) & TQM	08
10	ISO & EMS systems in workshop, Introduction to ISO 9001, ISO 14001 & ISO 50001, IMS 14001 & OHSAS 18001	08
11	Value Engineering types of needs and demands, Industry 4.0	04
12	Production planning and scheduling	04
13	Process inventory control	06
14	Industrial safety requirement & procedure	06
15	Drawings usage, preparation, Modification & its Record maintenance	03
16	Workshop Specific Labour laws, HOER, Workman Compensation Act	02
17	Pollution and its Control Measures in Workshops, Solid Waste Management, Effluent Treatment	03
18	Job costing	06
19	Standardization, Rationalization, Specification etc.	03
20	Inspection & Testing Procedure- DT & NDT Methods	03
21	CMT Lab functions.	03
22	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
23	POH of Stainless Wagons in Workshops, Rehabilitation and Conversion of Wagons	04
24	POH of ICF and LHB Coaches in Workshops	04
25	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
26	Coach Body Repair. Passenger Amenity Items, Bio Toilets & Bio-vacuum Toilet fitment during POH	06

Sl. No	Topic	Duration in Hours
27	POH of TL & AC system of Coaches (ICF & LHB)	12
28	Corrosion Repair Practice in Coaches & Wagons & Underframe	06
29	Air Brake System of Coaches & Wagons, Twin pipe brake system in wagons, Coupler: Balance draft Gears, POH Procedure & Testing methods	04
30	POH of different types of Locomotives in Workshops	02
31	Wheel Shop, Flow and Maintenance of Wheels, POH of Loco, Coaches and Wagon Bearings in Shops	08
32	NTXR Examination on Coaches & Wagons, NTXR reject able defects, Local Passing	03
33	Role of Stores Department in Workshops, Stock & Non-Stock Items, Stocking, EAC & AAC of Material	03
34	Stores drawl procedure	03
35	Stocking Application procedure for new stock items, Purchase Cycle	06
36	Procurement of Non-Stock Items, Indenting, Requisitions, Technical Suitability, Local Purchase, IREPS, iMMIS, GeM, long term contracts	03
37	Manufacture activities in Workshops	03
38	Workshop Manufacturing Suspense	02
39	Condemnation of Coaches, Wagons and Locomotives, Excluded Fittings	02
40	Condemnation of Ferrous & Non-Ferrous Scrap and its return to stores	03
41	Machinery, Plant & Equipment used in Workshops	06
42	Painting schedule and types of paints used in C&W, Powder Coating, Vinyl Wrapping, Grit Blasting	06
43	Warranty claims of coaching and wagon items	02
44	SPART/SPRMV & 140 T Crane maintenance practices	04
45	Industry 4.0, CNC Machines	04
46	Workshop Visit	14
47	Revision	03
	<b>Total</b>	<b>216</b>

3. रंमद

SUBJECT NAME DIESEL LOCOMOTIVE THEORY (Common.) - 01  
 SUBJECT CODE MDT-01  
 MODULE MSE-D, MJR-D, MJI-D

Sl. No.	Topic	Duration in Hours
1	Lay out of Locomotives. Single/Dual Cab design Types of I C Engines and working, classification <b>Sri Manish</b>	06
2	Traction Machine, Tractive effort-speed characteristics and coefficient of Adhesion (Alco & HHP) <b>Sri Ratnesh</b>	06
3	Supercharging principles, methods and various testing parameters. Air and Computer control brake system (Alco & HHP) <b>Sh Anurag</b>	06
4	Fuel system - components, function, defects and remedy. Fuel injection system (Alco & HHP) <b>Sh Anurag</b>	06
5	Lube oil system - components, function, defects and remedy (Alco & HHP) <b>Sri Adarsh Soni</b>	06
6	Cooling water system - components, function, defects and remedy. Radiator fan - principle, operation and maintenance (Alco & HHP) <b>AKS</b>	06
7	Layout of shop and shed, Schedule of maintenance (Alco & HHP). Shed management, Record keeping, Outages, Super checking Loco maintenance procedure; Bogies- types, load transfer, transmission of TE suspension system, Cattle guard, gear case, wheel profile specification & defect coupling, bearing fitment etc (Alco & HHP) <b>Sri Manish</b>	06
9	REMMLOT and Vigilance Control Device <b>Sh AKS</b>	06
10	GE locos- introduction, features, advantages etc <b>Sri Anurag</b>	06
11	Various types of Transmission, feature of an Ideal transmission in Diesel Loco, AC-DC, AC-AC transmission <b>AKS</b>	12
12	Various rotating equipment such as TA TM EG/CA AG, DB Blower, Fuel booster pump motor - Description /Overhauling/Repair/Testing, common problems & remedy (Alco & HHP) ECC & CCEM in Alco <b>Sri Ratnesh</b>	18
13	Excitation systems and Dynamic brake system (Alco & HHP). Transition system - circuit analysis, defects and remedy for Alco <b>Sh</b>	12
14	Microprocessor based controls, APU DEMU DPC, Distributed Power Control System (DPCS) <b>Sri Manish</b>	12
15	Types of governors, overhauling procedure, testing methods <b>Sri Adarsh</b>	12
16	Various safety & Misc items- Cab equipment, Driver seat, Wiper, Horn, Head light, Sanding equipment, Hand brake, Emergency switches and alarm fitted in Loco - working principles (Alco & HHP) <b>Sh Anurag</b>	12
17	Testing of Engines - Dry-run-Test, Blow-by test, Random test, Load Box testing, MU operation testing <b>Sh</b>	06
	<b>Total</b>	<b>144</b>