

**REVISED SYNOPSIS, SESSION PLAN & SYLLABUS OF IRSEE BATCH PROBATIONARS - PHASE - II****(Total 6 Weeks = 6 Sessions/Day x 30 Days = 180 Sessions)****(As per revised Work Distribution of IRIEEN Faculty Members issued on January-2021)**

w.e.f. IRSEE-2019 Batch

Updated on - 18.01.2021

REVISED FACULTY DESIGN. With NAME (S/Shri)	SUBJECTS & TOPICS	Revised (180 Sessions)				
		Nos. of Sessions (1:00 Hrs Plan)				
		Classroom	Outside Visits	LABs @ IRIEEN	Sub.Exam.	TOTAL
Shri Mohit Sonakiya, SP/M  Subject - TRS (Conv.Loco + 3 Phase Loco)	<u>Traction Rolling Stock - TRS (Conv. Locomotives + 3 Phase Locomotive)</u> 1. POH& MTR of Electric Locomotives. 2. UES& Must Change Items, RSP, M&P. 3. Bogie, Wheel and Axle. 4. Traction Motor Maintenance. 5. Seasonal (Monsoon, winter etc.) precautions for maintenance. 6. Roller Bearings, fits & tolerances. 7. Reliability and performance of Loco, Analysis of Failures and Unscheduled Lifting, FRPCPY, Fire Prevention in Locos. 8. MSG items, ESC items, CELE's conference and Reliability action plan (RAP). 9. Advancement and latest development in locomotives like DPWCS, GTO to IGBT Conversion, Propulsion System, HOG, Push-Pull System, Cab Redundancy etc. 10. Important SMIs, TC & Modification Sheets issued by RDSO. 11. Software for management of locomotive maintenance e.g. SLAM, RTIS etc. 12. Benchmarking and Staff Yardstick for Maintenance. 13. Daily Morning Position of Electric Loco Shed. 14. Video Films related to above topics + Case Studies + Quizzes.	26	3	3	6	38
	<b>Total Sessions for TRS (Conv.Loco + 3 Phase Loco)</b> Outside Visit will be planned for TMW Workshop, Nasik Road. LABs @ IRIEEN - Conv.Loco + 3 Phase Loco- 03 Sessions Subject Exam will be planned in 02 Session and remaining 04 Sessions will be planned for Exam. Preparation	26	3	3	6	38
Shri Peeyoosh Gupta, P/TRD  Subject - TRD (Traction Distribution)	<u>Traction Distribution - TRD</u> 1. Study of drawings (LOP, CSD, SED, GPSD, Sectioning Diagram etc.). 2. RE Projects – Appraisal, Justification and execution. 3. Protection scheme of 25 kV Traction Substation. 4. Maintenance Schedules of OHE and PSI. 5. Seasonal (Monsoon, Winter etc.) Precautions for maintenance. 6. Types of TRD brake downs including Panto entanglements. 7. Various types of traction-tariff, Regulatory Authorities, Open Access, Power forecasting & Trading, SLDC etc. 8. Latest developments in TRD, OLIVIR-G, 2x25kV system, High Reach OHE for DFC etc. 9. MSG meeting items, ESC Conference, CEDE Conference, SMIs & Technical Circulars issued by RDSO. 10. Role of EIG, Commissioning and CRS inspection. 11. Apps like TDMS, Rail Saver etc. 12. SEC & PAT Cycle of BEE 13. Condition Monitoring Methods for Equipment Maintenance. 14. Benchmarking and Staff Yardstick for Maintenance. 15. Daily Morning Position of Sr.DEEs in Division. 16. Video Films related to above topics + Case Studies + Quizzes.	24	3	3	6	36
	<b>Total Sessions for TRD</b> Outside Visit will be planned for SCADA at MB with Control Office of TRO - 06 Session LABs @ IRIEEN - TRD- 03 Sessions Subject Exam will be planned in 02 Session and remaining 04 Sessions will be planned for Exam. Preparation	24	3	3	6	36
Shri H.K.Singh, P/EL  Subject - Coaching (ICF + LHB Coaches Topics)	<u>Coaching (ICF + LHB Coaches Topics) -</u> 1. Failures of Coach equipment & remedial Action Plan. 2. Fire in coaches - causes, remedies & case-studies. 3. LHB Coaches – Depot-maintenance, downloading of failure-data. 4. Manufacturing and POH activities of coaches. Commissioning Test and Special Repair. 5. Seasonal (Monsoon, Winter etc.) Precautions for maintenance. 6. Reliability Action Plan & Instructions of Rly. Board. 7. MSG Meeting, CESE/CRSE Conference Items, ESC Meeting. 8. Important SMIs & Modification sheets issued by RDSO. 9. Recent Developments on Tejas coaches, Vande Bharat, GIS based Passenger Information system and LHB SLR with Interlocking panel. 10. Modification in LHB pantry car. 11. HOG & Push pull Operation – Modifications done in LHB coaches. 12. ICMS: Detention and Punctuality Monitoring, One Page Failure Report and Delogging note. 13. GCC for Works and Services, DOs and DONTs of Works Contract, Arbitration and Vigilance Case Studies. 14. Benchmarking and Staff Yardstick for Maintenance. 15. Daily Morning Position of Sr.DEEs in Division. 16. Video Films related to above topics + Case Studies + Quizzes.	24	0	3	6	33
	<b>Total Sessions for Coaching (ICF+LHB Coaches Topics)</b> No Outside Visit for Coaching LABs @ IRIEEN - Coaching- 03 Sessions Subject Exam will be planned in 02 Session and remaining 04 Sessions will be planned for Exam. Preparation	24	0	3	6	33

**REVISED SYNOPSIS, SESSION PLAN & SYLLABUS OF IRSEE BATCH PROBATIONARS - PHASE - II**

**(Total 6 Weeks = 6 Sessions/Day x 30 Days = 180 Sessions)**

**(As per revised Work Distribution of IRIEEN Faculty Members issued on January-2021)**

w.e.f. IRSEE-2019 Batch

Updated on - 18.01.2021

REVISED FACULTY DESIGN. With NAME (S/Shri)	SUBJECTS & TOPICS	Revised (180 Sessions)				
		Nos. of Sessions (1:00 Hrs Plan)				
		Classroom	Outside Visits	LABS @ IRIEEN	Sub.Exam.	TOTAL
Shri S.K.Verma, SP/Admin Subject - EMU/MEMU (Conv. & 3 Phase EMU/MEMU)	<b>EMU/MEMU (Conventional &amp; 3 Phase) -</b> 1. Failure analysis of EMU/MEMU (Conventional & 3 Phase). 2. MSG & Other important meetings. 3. Daily position of EMU/MEMU. 4. Benchmarking and Staff Yardstick for Maintenance. 5. Video Films related to above topics + Case Studies + Quizzes.	3	0	0	0	3
<b>Total Sessions for EMU/MEMU</b> No Outside Visit for EMU Car Shed at MB LABs @ IRIEEN - No LABs for TRO Subject Exam will be taken for EMU/MEMU with TRO Subject Exam.		3	0	0	0	3
Shri Himanshu Sharma, SP/PO Subject - GE (Green Energy)	<b>Green Energy - GE</b> 1. Global Warming, SDG (Sustainable Define Goal) Goals & Targets. 2. Green Energy & Role of Electrical Engineers. 3. BEE's latest Directives, Building Code (ECBC). 4. Design of Solar Energy, Solar PV System & Solar Water Heating. 5. Wind Energy System. 6. Solar cum Wind Energy Hybrid System. 7. Latest Policies of MNRE & REMCL etc. 8. ECBC, IGBC, GRIHA, Renewable Energy & Energy Conservation. 9. Energy Conservation Star System. 10. ISO Certification for 9001, 12001, 14001, 18001 & 50001. 11. Video Films related to above topics + Case Studies + Quizzes.	9	6	3	0	18
<b>Total Sessions for Green Energy</b> Outside Visit for Green Energy will be planned to Sinner Wind Mill + Solar Cooking Plant, Shirdi - 06 Sessions LABs @ IRIEEN - Energy Lab- 03 Sessions Subject Exam will be planned with General Service in 02 Session and remaining 04 Sessions will be planned for Exam. Preparation		9	6	3	0	18
Shri C.M.Rawat, Lecturer Subject - TRO (Traction Operations)	<b>Traction Operations - TRO</b> 1. Trouble shooting of locos- Electrical and Pneumatic. 2. SPAD-causes and precautions to avoid. 3. Tips for good engineman-ship to avoid stalling, parting, Wheel-skidding. 4. Axle locking and wheel floating for conventional & 3 Phase locos. 5. Line Haul Cost, LHC calculation and controlling factors. 6. Crew Review and Crew Review calculation. 7. Classification of accidents, Accident Enquiry & Management, CRS inquiry. 8. CMS, FOIS, ICMS etc. 9. Energy Conservation Measures in TRO. 10. Advancement in TRO (New Technologies). 11. Section Control Chart of Division & WTT. 12. Daily Morning Position of Sr.DEES in Division. 13. Video Films related to above topics + Case Studies + Quizzes.	14	3	0	6	23
<b>Total Sessions for TRO</b> Outside Visit for TRO will be planned to Control Office at MB with TRD-SCADA - 06 Sessions No LABs @ IRIEEN TRO Subject Exam including EMU/MEMU Subject Questions will be planned in 02 Session and remaining 04 Sessions will be planned for Exam. Preparation		14	3	0	6	23
Shri N.D.Turkar, P/Loco Subject - GS (General Service)	<b>General Services - GS</b> 1. Failures of distribution transformers and Safety devices. 2. Electrical Fires in stationary installations - Causes and Prevention. 3. I.E. Act, Rules, Energy Conservation Act. 4. Energy Metering, Pre-Paid Meters & Smart Meters. 5. Energy efficient Lighting technology & SCADA in General Services. 6. Power supply Management by Online Methods, Ring Main System, Power Line Crossing. 7. Power factor improvement and Methodology of BEE for energy conservation. 8. Lifts & Escalators including their maintenance. 9. Apps Like - EEMS, Rail Saver etc. 10. Benchmarking and Staff Yardstick for Maintenance. 11. Daily Morning Position of Sr.DEES in Division. 12. Video Films related to above topics + Case Studies + Quizzes.	12	0	3	6	21
<b>Total Sessions for General Service</b> No Outside Visit for General Service LABs @ IRIEEN - General Service- 03 Sessions Subject Exam of General Service will be planned including Green Energy & Energy Conservation Questions in 02 Session and remaining 04 Sessions will be planned for Exam. Preparation		12	0	3	6	21

**REVISED SYNOPSIS, SESSION PLAN & SYLLABUS OF IRSEE BATCH PROBATIONARS - PHASE - II****(Total 6 Weeks = 6 Sessions/Day x 30 Days = 180 Sessions)****(As per revised Work Distribution of IRIEEN Faculty Members issued on January-2021)**

w.e.f. IRSEE-2019 Batch

Updated on - 18.01.2021

REVISED FACULTY DESIGN. With NAME (S/Shri)	SUBJECTS & TOPICS	Revised (180 Sessions)				
		Nos. of Sessions (1:00 Hrs Plan)				
		Classroom	Outside Visits	LABS @ IRIEEN	Sub.Exam.	TOTAL
Shri Himanshu Sharma, SP/PO Computer Topics	<b>Computers -</b> 1. Use of Indian Language (Rajbhasha) on Computers. 2. e-procurement, e-tendering & iMMIS System, e-Drishti. 3. Cloud Computing & Networking 4. e- Security & e-governance. 5. Introduction to AI (Artificial Intelligence) & VR (Virtual Reality).	8	0	0	0	8
YOGA CLASSES	Weekly One Class of One Hour will be planned for Yoga. Not counted in Session counting since planned from 16:30 hrs to 17:30 hrs in Misc Session Timings. (Total 6 Sessions for 6 Weeks of Phase-II)	0	0	0	0	0
LIBRARY	Library Sessions for issuing of Books and miscellaneous issues - Daily Last Session as Misc Session.	0	0	0	0	0
<b>GRAND TOTAL OF SESSIONS INCLUDING EXAM.</b>		<b>120</b>	<b>15</b>	<b>15</b>	<b>30</b>	<b>180</b>

**NOTE :-** 1) Session Plan as per Latest Work Distribution of IRIEEN Faculty Members issued on 07.07.2020 and Syllabus, Session Plan including Exam Pattern has been revised on 20.07.2020.

2) In case of Holidays during the above period of Phase-I, session plan will be adjusted accordingly.

<b>Faculty Wise Summary</b>						
Name of Faculty & Desination	Total Session Subject Wise	Classroom	Outside Visits	LABS @ IRIEEN	Sub.Exam.	TOTAL
Shri Mohit Sonakiya, Sr.Prof./M	Total Sessions TRS (Conv.Loco + 3 Phase Loco)	26	3	3	6	38
Shri Peeyoosh Gupta, Prof./TRD	Total Sessions for TRD	24	3	3	6	36
Shri Himanshu Kumar Singh, Prof./EL	Total Sessions for Coaching (ICF+LHB Coaches Topics)	24	0	3	6	33
Shri S.K.Verma, SP/Admin	Total Sessions for EMU/MEMU	3	0	0	0	3
Shri Himanshu Sharma, SP/PO	Total Sessions for Green Energy	9	6	3	0	18
Shri C.M.Rawat, Lecturer	Total Sessions for TRO	14	3	0	6	23
Shri N.D.Turkar, P/Loco	Total Sessions for General Service	12	0	3	6	21
Shri Himanshu Sharma, Sr.Prof.(PO)	Total Sessions for Computers Topics	8	0	0	0	8
<b>GRAND TOTAL OF SESSIONS FOR PHASE-II</b>		<b>120</b>	<b>15</b>	<b>15</b>	<b>30</b>	<b>180</b>

**After Revision - Only Five Subject Examination will be taken in Phase-II for 40 Marks each and in total 200 Marks, hence further no conversion of marks is required for Final Marks Calculation Sheet**

**1) Traction Rolling Stock-TRS (Conv.+3 PH Loco), 2) Traction Distribution-TRD, 3) Traction Operations-TRO + EMU/MEMU, 4) Coaching & 5) General Service-GS + Green Energy-GE**