



Indian Railways  
Centralised Training Institutes

# EXECUTIVE DEVELOPMENT PROGRAMMES

It's time to take the next step



सर्वोच्च शिक्खणम्

Ministry of Railways,  
Govt. of India



## Shaping Professionals For Tomorrow!

Welcome to our world. On Indian Railways (IR), we pride ourselves in being part of world's third largest organization, with over 165 years of glorious legacy. With its vast network of more than 67000 km, IR connects people across the length and breadth of the country, justifiably earning the sobriquet - life line of the nation.

Even as Indian Railways keeps reinventing itself through the years, there has been a constant and relentless pursuit towards improvement in every field of its activity. IR has seven centralized training institutes which play a pivotal role in shaping up domain knowledge, expertise, morale and aptitude of its officers.

Endowed with state of the art infrastructure, the training institutes specialize in various management and technology disciplines. The faculties at these training institutes are committed professionals with vast experience in their respective fields on Railways. Experts from reputed academic institutes such as IIMs,

IITs etc, captains of the industry & business organizations, leaders from government and corporates are regularly invited to share their knowledge and experience. This ensures depth and diversity in learning outcomes.

More than 8000 managers across disciplines of IR are trained annually in different programmes conducted at the training institutes of IR.

Our programme offerings include training to personnel from other government departments, public sector undertakings and private organizations and officers from different BIMSTEC & SAARC countries.

In our endeavor to contribute to capacity building of professionals keen on continuous learning, we offer best-in-class Executive Development Programmes (EDP) at our training institutes.

# Our Centralised Training Institutes



## National Academy of Indian Railways (NAIR)

National Academy of Indian Railways is the alma mater for the officers of the Indian Railways. It was founded in 1930 at Dehradun and then shifted to its present regal, sylvan surroundings at Vadodara, in 1952. Presently, it is situated in a sprawling campus of 55 acres of the Pratap Vilas Palace at Lalbaug, Vadodara.

Besides initiating newly recruited officers into IR management, NAIR caters to the training needs of all in-service railway officers in the fields of administration and management. The Academy regularly conducts Management Development Programmes, Advancement Management Programmes besides programmes in special areas such as Tenders & Contracts, Arbitration, and Public Relations etc. NAIR is the centralized training institute for officers from Finance, Personnel, Stores and Medical services.



## Indian Railways Institute of Electrical Engineering (IRIEEN)

IRIEEN is the apex training institute for officers of Electrical Engineering discipline of Indian Railways. It is situated at Nasik Road, about 188 Kms. North east of Mumbai.

The institute endeavours to impart quality training in the fields of Electrical engineering and related technology. It deploys state-of-the-art infrastructure and competent Faculty for training on Traction technology, Power Electronics, Energy management etc.



## Indian Railways Institute of Mechanical & Electrical Engineering (IRIMEE)

IRIMEE is a centralized training institute for officers of Mechanical engineering discipline of IR. Hailed as one of the oldest institutes of this country, its hallowed history dates back to year 1888 when it was established as the Technical School. It presently conducts training courses for in-service officers and supervisors of Mechanical engineering & Metallurgical & Chemical disciplines. It also conducts 4 year training leading to Degree in Mechanical Engineering for Special Class Railway Apprentices selected by Union Public Service Commission.







### **Indian Railways Institute of Signal Engineering & Telecommunications (IRISET)**

Setup in 1957 by the Ministry of Railways, to cater to specialised training needs of their own staff and officers in the field of Railway Signalling and Telecommunication, the Institute today caters to the needs of the entire Afro-Asian region.

Located in the southern part of India in Secunderabad adjoining the capital city of Hyderabad in Andhra Pradesh, the Institute is spread over 28.3 hectares. IRISET provides initial as well as advanced training, theory as well as hands on, in Railway Signalling and Telecommunications.



### **Indian Railway Institute Of Civil Engineering (IRICEN)**

IRICEN, Pune is the centralised training institute for Civil engineers of Indian Railways. The institute had a modest start in 1959 as the Permanent Way Training School for training entry level civil engineers.

IRICEN conducts courses/workshops/seminars for all levels of officers & supervisors of Railways & PSUs, contractors/ supervisors / engineers of private organisations.



### **Indian Railways Institute of Transport Management (IRITM)**

IRITM, Lucknow was established in the year 2003 to meet the needs of fast changing transport business scenario. It is a premier Institute imparting training in Transport Management & Services Marketing. As centralized training institute for officers of Traffic Transportation & Commercial management disciplines of IR, specializes in transport planning, transport operations management, safety and disaster management.



### **Jagjivan Ram RPF Academy (JRRPFA)**

The Jagjivan Ram Railway Protection Force Academy (JRRPFA), Lucknow conducts training for new recruits of Indian Railway Protection Force (RPF). It was established in 1955 at Lucknow. Spread over 46.3 acre campus, the academy conducts courses for officers, supervisors & security agencies personnel in areas of security, forensics, explosive detection & surveillance.





# Our Offerings

## *Executive Development Programmes*

### **National Academy of Indian Railways (NAIR)**

- Transportation Management and Railways
- Communication & Presentation Skills for Managers
- Training of Trainers/Teachers
- Management Development Program – Leadership & Change Management
- Supply Chain Management

---

### **Indian Railways Institute of Electrical Engineering, (IRIEEN)**

- Construction & Maintenance of Traction Distribution (TRD) System for Railways
- Traction Rolling Stock - Maintenance & Operation
- Condition Monitoring
- EMUs & Metro Systems

---

### **Indian Railways Institute of Mechanical & Electrical Engineering (IRIMEE)**

- Trainset and DMU
- Environment and Housekeeping Management
- Workshops Management
- Operation and Maintenance of Diesel Electric Locomotives

---

### **Indian Railways Institute of Signal Engineering and Telecommunications (IRISET)**

- Signalling Interlocking Design
- Computer Networking & Management
- Electronic Exchanges
- Mobile Communication

---

### **Indian Railways Institute of Civil Engineering (IRICEN)**

- Railway Track Technology
- Railway Bridge Engineering
- Railway Construction Engineering
- Refresher course for Railway engineers

---

### **Indian Railways Institute of Transport Management (IRITM)**

- Safety Management & Accident Investigation
- Artificial Intelligence & Data Analytics in Service Delivery
- Traffic Planning, Logistics & Supply Chain Management
- Development of Commercial Spaces & Sidings

---

### **Jagjivan Ram RPF Academy (JRRPFA)**

- Law Enforcement in Railways and related area
  - Explosives, IEDs & Countermeasures
-



## Details of Programme

# NAIR

### Transportation Management and Railway

#### 1. Overview & Objective

We have designed the programme to provide insight & understanding of Transport sector and the role of Railways as a service provider. The participants will learn about Railways functioning & processes thereby facilitating ease of doing. You benefit in terms of acquiring tools and techniques to plan effectively for future business needs.

#### 2. Content

- Introduction – History, Growth of Transportation, Current status
- Economic Growth and Transportation
- Various modes of Transportation
- Role of Railway in Transportation Management
- Railway's interface with customers – freight, passenger, parcel
- Business partners – issues and concerns
- Recent developments, initiatives
- Future Road map- possibilities

#### 3. Pedagogy

Blended learning through classroom sessions, industry visits and expert speakers

#### 4. Duration : 5 days

**Venue:** National Academy of Indian Railways, Vadodara

#### 5. Contact Person

##### 1. Sr. Professor Transportation Mgt.

Mob. : 09974003519

E-Mail: [sptm@nair.railnet.gov.in](mailto:sptm@nair.railnet.gov.in)

##### 2. Professor Information Technology

Mob. : 09601285941

E-Mail: [pit@nair.railnet.gov.in](mailto:pit@nair.railnet.gov.in)

## Communication & Presentation Skills for Managers

### 1. Overview & Objective

Communication process significantly impacts the performance of any organization. Successful managers are invariably good communicators. Structured input on communication skills is essential for managers across the sectors. We have designed this programme with focus on developing communication skills of managers within the organization and with external business environment.

### 2. Content

- Introduction
- Oral Communication
  - Just-A-Minute Presentations (Workshop)
  - Public Speaking
  - Elevator Pitch
- Written Communication
  - Report Writing
  - Executive Summaries,
  - Proposal Writing
  - Letters/ Memos
- Non-verbal Communications

- Media Release
- Resume/Bio-data Preparation
- Power-point Presentation Skills

### 3. Pedagogy

Our programme is essentially workshop style which includes learning-by-doing, learning through interaction with the instructors, from peers, reading and reflection. The sessions incorporate interactive lectures, the use of case studies, group exercises and videos.

### 4. Duration : 5 days

**Venue:** National Academy of Indian Railways, Vadodara

### 5. Contact Person

#### 1. Professor Management Studies.

Mob. : +91 8511062808

E-Mail: pms@nair.railnet.gov.in

#### 2. Professor Information Technology

Mob. : +91 9601285941

E-Mail: pit@nair.railnet.gov.in

## Training of Trainers/Teachers

### 1. Overview & Objective

Training is essential tool to empower the employees to contribute in achieving organizational goals. A professionally trained trainer and teacher can play a critical role in meeting this objective. Our programme is designed to facilitate the Trainers/Teachers to hone their training/teaching skills.

### 2. Content

- Introduction – Types training methods, structured approach
- Four ways of Learning Lecture Method
- Coaching Method Game Method
- Group Discussion Method
- Planning and conducting Sessions

### 3. Pedagogy

In workshop style this programme incorporates & facilitates learning from simulation exercises, experience sharing,

group work besides theoretical inputs from experts.

### 4. Duration : 5 days

**Venue:** National Academy of Indian Railways, Vadodara

### 5. Contact Person

#### 1. Professor (Law Management)

Mob. : +91 9601285933

E-Mail: plm@nair.railnet.gov.in

#### 2. Professor (Information Technology)

Mob. : +91 9601285941

E-Mail: pit@nair.railnet.gov.in



## Management Development Program – Leadership & Change Management

### 1. Overview & Objective

In today's globalized and VUCA (Volatile, Uncertain, Complex and Ambiguous) world, every management initiative involves change management processes and leadership challenges. Our programme is designed for leaders of corporate, social or government bodies to equip them to deal with these challenges. The programme provides participants ample opportunity to pause, reflect, review and engage with experts who are champions of Leadership and Change Management.

### 2. Content

- Leadership – Introduction
- Traits of successful leaders
- Leadership game
- Change management process
- Case study on change management

### 3. Pedagogy

Theoretical inputs, case discussions, best practices sharing and sessions by field experts & practitioners

### 4. Duration : 2 weeks

**Venue:** National Academy of Indian Railways, Vadodara

### 5. Contact Person

#### 1. Sr. Prof. Management,

Mob. : +91 9974094047

E-Mail: spmgt@nair.railnet.gov.in

#### 2. Professor Management Studies,

Mob. : +91 8511062808

E-Mail: pms@nair.railnet.gov.in

## Supply Chain Management

### 1. Overview & Objective

Supply Chain Management plays an important role in organizations. Today the survival of most firms depends on intelligent supply chain decisions. Many companies are achieving significant competitive advantage by the way they configure and manage their supply chain. Our programme comprehensively covers logistics, planning, use of E-commerce and strategy aspects of Supply Chain Management.

### 2. Content

- Electronic Commerce
- Inventory Management
- Warehousing
- Forecasting of Demand
- Measuring Supply Chain Performance
- Supply Chain Management Strategies
- Spend Analysis
- Block Chain in Supply Chain Management

### 3. Pedagogy

Theoretical inputs, simulation exercises, industry visits, case discussions and sessions by field experts & practitioners

### 4. Duration : 2 weeks

**Venue:** National Academy of Indian Railways, Vadodara

### 5. Contact Person

#### 1. Senior Professor (Materials Management)

(P&T) Fax : +91 265-2651954

E-mail: spmm@nair.railnet.gov.in



Model Room

# Details of Programme

## IRIEEN

### Construction & Maintenance of Traction Distribution (TRD) System for Railways

#### 1. Overview & Objective

We have designed this programme to provide insight of construction, design, maintenance and working of Over Head Equipment (OHE) & Power Supply Installation (PSI) involved in Traction distribution for Railways. Participants will keep abreast with the latest guidelines & recent developments in this field. Our prospects include new as well as working professionals.

#### 2. Content

- Introduction to 25kV Electric Traction Distribution in a Railway system.
- Preparation of Lay out plan, pegging plan, cross sectional drawing and various other OHE Parameters
- Design of Foundation & Foundation bending moment code, Over Head Crossings and clearance study
- Over Head Equipment Parameters, Over Head Crossings and clearance study
- Tower wagon & Maintenance facilities
- Auto Tensioning Devices and adjustment thereof. Turn outs & cross overs, Earthling & bonding
- Power supply scheme & equipment in traction sub-station, sectioning posts and sub-sectioning posts
- Sectioning Arrangements, current collection tests, foundation
- Latest guidelines & recent developments in TRD
- Protection scheme & use of SCADA in TRD
- Visit to OHE depot, OHE yard, TRD Lab, Traction sub-station & remote control centre.

#### 3. Pedagogy

Classroom inputs, Practical sessions in Laboratory, field visits and expert lectures

#### 4. Duration : 3 weeks

**Venue:** Indian Railways Institute of Electrical Engineering, Nasik

#### 5. Contact Person

##### 1. Professor(TRD),

Mob. : +91 9503114876.

E-mail ID: proftrdirieen@gmail.com

##### 2. Sr.Professor (PO),

Mob. : +91 9503114871.

E-mail ID: arundharmik@gmail.com



Traction Distribution

## Traction Rolling Stock - Maintenance & Operation

### 1. Overview & Objective

Our programme will expose the participants in all the aspects of maintenance, operation and latest technological development of Traction rolling stock. It incorporates theoretical inputs, design and important features of conventional & 3-Phase locos.

### 2. Content

#### Convention Locos (DC Drive) and 3-Phase Locos

- Evolution of locomotives
- General description and equipment lay out including working system of loco sheds & its lay out
- Maintenance Schedule and their periodicity
- Control and power circuit of conventional locos
- Traction motor maintenance
- Pneumatic circuits
- Bogie design & maintenance
- Activities in different schedules
- Failure analysis & Reliability Action Plan
- VVVF control of induction motor used on TM
- Control Electronics including software
- Diagnostic system and trouble shooting
- New Developments in Locos
- Safety and protection system

#### Locomotive Operation:

- Specific Energy Conservation, Tractive Effort & train resistance
- Weight Transfer and adhesion
- On line trouble shooting
- Man Power Planning and motive power planning crew training, road learning, classification of drivers, system of monitoring and counselling,
- Review of power plan
- Line-haul cost and loco statistics
- Trip shed maintenance
- Train parting and stalling
- Important case studies/accident and breakdown
- Visit to crew depot, running room and trip sheds
- Crew management system and Freight operation & information system

### 3. Pedagogy

Classroom inputs, Practical sessions in Laboratory, field visits and sessions by field experts & practitioners

### 4. Duration : 2 weeks

**Venue:** Indian Railways Institute of Electrical Engineering, Nasik

### 5. Contact Person

#### 1. Sr. Professor (Admin.).

Mob. : +91 9503114874.

E-mail ID-sndubeyji@gmail.com

#### 2. Professor (EL).

Mob. : +91 9503114875.

E-mail himanshu.kumarsingh@gov.in

#### 3. Professor (Loco),

Mob. : +91 9503114878.

E-mail shivababa\_1812@yahoo.co.in



Loco model for fault diagnosis





## Condition Monitoring

### 1. Overview & Objective

Condition monitoring by careful examination and analysis of set parameters of any equipment or machinery, need based maintenance is a key factor in asset reliability. This concept reduces the frequent breakdown of equipment and its associated cost. We have designed the programme with a focus on electrical equipment.

### 2. Content

- Condition Monitoring of Electrical equipments - basic concepts
- Diagnostic testing of insulation
- Tan Delta testing
- Hi-pot test, surge comparison test and Partial Discharge test
- Condition Monitoring of insulating oil, transformers, cables & motors
- Introduction to Non-destructive Testing (NDT)
- Magnetic Particle Testing
- Liquid Penetrate Testing
- Eddy Current Testing
- Ultrasonic & Acoustic Emission Testing
- Thermal Imaging (Infra-Red) and Radiography Testing
- Cables and rotating machines
- DGA Test

### 3. Pedagogy

Classroom inputs, Practical sessions in Laboratory, field visits and sessions by field experts & practitioners

### 4. Duration : One week (5 days)

**Venue:** Indian Railways Institute of Electrical Engineering, Nasik

### 5. Contact Person

#### 1. Sr. Professor (M),

Mob. : +91 9503114873.

E-mail: akm.mathur@gov.in

## EMUs & Metro Systems

### 1. Overview & Objective

Mass Rapid Transport System as an urban transport solution contributes to economic development of metros and emerging cities. We have designed this programme to impart the required knowhow to the engineers in technical aspects & operations of EMUs & Metro systems.

### 2. Content

- EMU overview including 3-phase EMUs.
- Working of EMU Car Shed & Workshop.
- Power, Pneumatic & Auxiliary circuits
- Suspension System
- Maintenance & operational aspects
- Practical demonstration in car shed/workshop
- Familiarisation to Metro System- Technical as well as operational

### 3. Pedagogy

Classroom inputs, field visits and sessions by field experts & practitioners

### 4. Duration : One week (5 days)

**Venue:** Indian Railways Institute of Electrical Engineering, Nasik

### 5. Contact Person

#### 1. Sr. Professor (Admin.).

Mob. : +91 9503114874.

E-mail: sndubeyji@gmail.com

#### 2. Asst. Professor,

Mob. : +91 9503114877.

E-mail: ndturkar22@gmail.com



Electronics Lab

# Details of Programme IRIMEE

## Trainset and Diesel Multiple Units (DMU)

### 1. Overview & Objective

Our programme gives an understanding of details of design features and working principles of Trainsets, DMUs and other similar self-propelled vehicles.

### 2. Content

- Introduction to Trainsets, Diesel Multiple Units, Electric Multiple Units and self-propelled vehicles
- Distributed Motive Power
- Traction System and other components of Trainsets, Train operation and control system, 3 Phase propulsion system
- Bogies & Brake Systems
- Diesel Engine components, their functioning and maintenance, cab layout, driving controls, control system
- On-board facilities

### 3. Pedagogy

Classroom inputs, field & model room visits, Audio-video sessions, e-learning content and sessions by field experts & practitioners

### 4. Duration : 5 days

**Venue:** Indian Railways Institute of Mechanical & Electrical Engineering

### 5. Contact Person

**1. Senior Professor (Diesel Traction)**

Mob. : +91 9771462408

E-mail: spdt.irimee@gmail.com



Mechatronics Lab

## Environment and Housekeeping Management

### 1. Overview & Objective

Our programme covers various aspects related with environment and housekeeping management to make Railway as an environment friendly mode of transport. The inputs are designed to give an understanding of measures to conserve water, energy conservation, solid waste collection/ disposal/ treatment and compliance.

### 2. Content

- Legal/ statutory aspects of environment
- Treating Effluents, water conservation measures
- Solid waste collection and treatment technologies
- Chemicals and equipment used for cleaning
- Measures to reduce, recycle plastic and e-waste
- Energy conservation, renewable energy

### 3. Pedagogy

Classroom inputs, field visits, Audio-video sessions, e-learning content and sessions by field experts & practitioners

### 4. Duration : 5 days

**Venue:** Indian Railways Institute of Mechanical & Electrical Engineering

### 5. Contact Person

**1. Senior Professor (Rolling Stock Technology)**

Mob. : 9771462408

E-mail: sprst.irimee@gmail.com

## Workshops Management

### 1. Overview & Objective

We have designed this programme to improve the performance of the participants by providing structured inputs on Production & Manufacturing techniques, Labour laws, planning of Civil & Electrical Infrastructure and M&P. It has modules on workshop practices, welding & corrosion, assessment of planned capacity, Draft Project Report preparation and setting up facilities, Workshop costing, quality and compliances.

### 2. Content

#### Workshop Module

- Workshop Organisation
- Hours Of Employment Regulation, Factories Act, Workshop Compensation Act, Labour laws, Pollution control, Principal Employer Responsibilities
- Different Quality System Certification - ISO 9001, ISO 50001, OSHAS 18001, ISO 3834, 5S
- Capacity and Infrastructure Planning in Workshops.
- Industrial Engineering and Performance Indices.
- Workshop Costing.
- Assessment of Workshop planned

capacity, preparation of Draft Project Report and Setting up facilities for Overhauling of Passenger & Freight Cars.

#### Welding & Corrosion Module

- Introduction to Welding Metallurgy & Overview of Welding processes
- Welding of steel and stainless steels
- Quality issues in different welding processes & Welding Certification Systems
- Corrosion in Steel & Stainless steel
- Welding training Centre-Practical & Demonstration

### 3. Pedagogy

Classroom inputs, field visits, Audio-video sessions, e-learning content and sessions by field experts & practitioners

### 4. Duration : 2 weeks

**Venue:** Indian Railways Institute of Mechanical & Electrical Engineering

### 5. Contact Person

#### 1. Senior Professor/Workshop & Manufacturing Technology

Mob. : +91 9771462417

E-mail: spwmt.irimee@gmail.com

## Operation and Maintenance of Diesel Electric Locomotives

### 1. Overview & Objective

This course is for imparting basic knowledge of diesel electric locomotives. The course is intended to explain the principles of working of diesel engine, general layout of Diesel Electric locomotives and their mechanical and electrical sub-systems.

### 2. Content

- General layout of Diesel Electric locomotive
- Different types of Diesel engines in use for Traction
- Major systems like Fuel, Lube Oil, Cooling, Air intake, Control Systems etc.
- Electrical Transmission and Excitation system including 3 phase technology
- Main features of Locomotive Bogies

- Compressor & Air Brake system, Computer Controlled Brakes, Dynamic Brakes
- High Horse Power Locomotives for freight and passenger train operations
- Facilities required and maintenance practices

### 4. Duration : 3 weeks

**Venue:** Indian Railways Institute of Mechanical & Electrical Engineering

### 5. Contact Person

#### 1. Senior Professor (Diesel Traction)

Mob. : +91 9771462408

E-mail : spdt.irimee@gmail.com



# Details of Programme **IRISET**

## Signaling Interlocking Design

### 1. Overview & Objective

Meant to develop Railway Signal engineering specialists to meet the demands of emerging technologies, this programme focuses on various advanced signaling equipment such as Electronic Interlocking (EI), Solid State Block Proving by Axle Counter (SSBPAC), Train Protection & Warning System (TPWS), European Train Control System (ETCS) etc. Key deliverables are aimed to provide knowledge on system architecture, installation and maintenance aspects of various types of advanced signalling equipment.

### 2. Content

- Introduction to different types of advanced signaling equipment like EI, SSBPAC, TPWS, and ETCS etc.
- Electronic Interlocking, Electronic Interlocking Specification, working and different configurations, hardware, bits calculation, logic, design, installation and testing, maintenance.
- Introduction to SSBPAC working, configuration, hardware, installation and maintenance.
- ETCS Levels and working and configuration.
- TPWS working, configuration, hardware, installation and maintenance.

### 3. Pedagogy

Theoretical inputs in classrooms, hands-on in Laboratory, expert speaker session, simulation exercises



TPWS Lab.

### 4. Duration : 3 weeks

**Venue:** Indian Railways Institute of Signal Engineering and Telecommunications, Secunderabad

### 5. Contact Person

#### 1. Professor Signaling -2

Mob. : 09701341811

E-mail: [ps2@iriset.railnet.gov.in](mailto:ps2@iriset.railnet.gov.in)



## Computer Networking & Management

### 1. Overview & Objective

In computer networking, managing resources and its security requires building up redundancies. The network is to be secured from outsiders, hackers & crackers by adopting various security measures like ACLs, Packet filters, proxies and firewalls. Engineers need to be upskilled to meet these challenges. Our programme is designed to introduce future network specialists to the principles of networking, systems of interconnectivity, IP schemes, integration & commissioning of data networks, network security, OSI layers model, TCP/IP Protocol, Wi-Fi networks and Configuration of Routers & its Protocols.

### 2. Content

- Introduction to TCP/IP, OSI reference model, MPLS concepts
- Railnet architecture, VLAN, Loop guard and High availability, VRRP, DHCP, DNS, Wi-Fi networks
- Advance routing, LAN security, Proxy, VPNs, IT Act & Wire-less security
- Various services running on Networks: Railnet, PRS, UTS, FOIS etc.
- Configuration of Routers, Routing protocols, Components, commands and modes of configuration
- Network Security and Performance
- Access control with AAA, SSL & VPN

### 3. Pedagogy

Theoretical inputs in classrooms, hands-on in Laboratory, expert speaker session, simulation exercises

### 4. Duration : 3 weeks

**Venue:** Indian Railways Institute of Signal Engineering and Telecommunications, Secunderabad

### 5. Contact Person

**1. Asst. Prof (Tele),**

Mob. : +91 9701341814

Email.: apt@iriset.railnet.gov.in



Computer Networking & Mgmt

## Electronic Exchanges

### 1. Overview & Objective

Our programme aims to develop technical in-depth understanding and appreciation of working of electronic Exchanges. The participants gain conceptual clarity of Data on Voice Transfer, VoIP and next generation network.

### 2. Content

- Evolution of SPC – PCM – TDM Exchanges
- Signalling for Exchanges including Trunking
- IP based Telephony, Concepts, Soft Switches
- VoIP benefits & Asterisk Architecture
- Introduction to NGN
- Redundancy & Backup along with its Power Supply

### 3. Pedagogy

Theoretical inputs in classrooms, hands-on in

Laboratory, expert speaker session, simulation exercises

### 4. Duration : 1 weeks

**Venue:** Indian Railways Institute of Signal Engineering and Telecommunications, Secunderabad

### 5. Contact Person

**1. Asst. Prof (Tele),**

Mob. : +91 9701341814

Email.: apt@iriset.railnet.gov.in

## Mobile Communication

### 1. Overview & Objective

Our programme helps participants to learn and gain keen insights about different types of media, mobile communications and Synchronous Digital Hierarchy (SDH) networking technology.

### 2. Content

- Different types of Transmission Media
- Types of OFC accessories and Measurements, SDH Concepts
- SDH Network Elements, Alarms and Troubleshooting
- Test and Measurements, Installation & commissioning of SDH Equipment
- Study of GSM architecture & signaling
- Study of GSM-R, WLL, CDMS, 3G, 4G, TETRA and VHF communication
- BTS, BSC & TRAU and Radio Commander in laboratory



Electronic Exchanges

### 3. Pedagogy

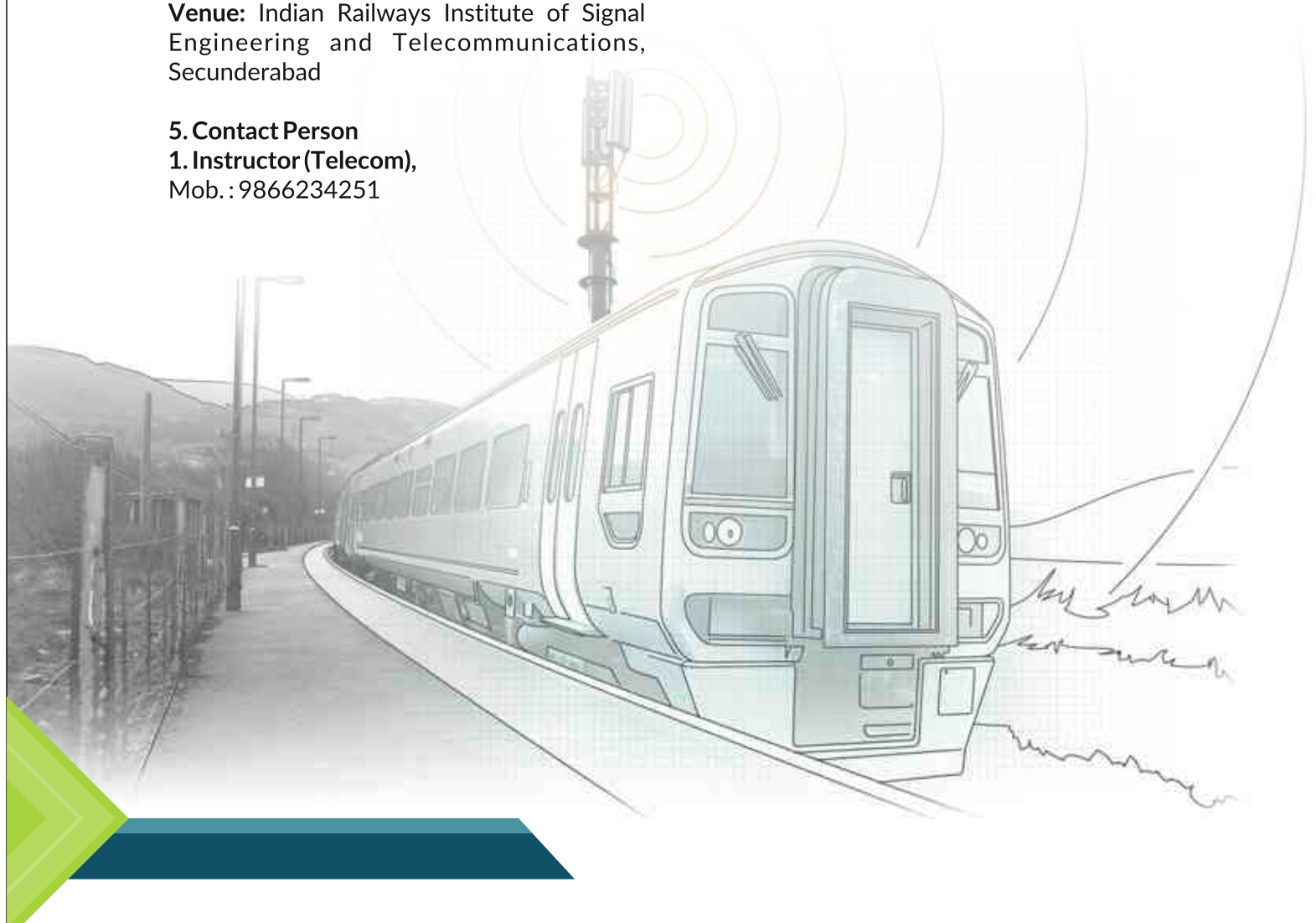
Theoretical inputs in classrooms, hands-on in Laboratory, expert speaker session, simulation exercises

### 4. Duration : 3 weeks

**Venue:** Indian Railways Institute of Signal Engineering and Telecommunications, Secunderabad

### 5. Contact Person

**1. Instructor (Telecom),**  
Mob.: 9866234251





# Details of Programme IRICEN

## Railway Track Technology

### 1. Overview & Objective

Track technology plays a vital role in speedy, safe and robust rail transport. Our programme will equip you, as a rail professional, with the knowledge, skill sets and competencies in rail track engineering. The key deliverables cover technologies, components, inspections, maintenance, renewals of track and understanding of long term track behavior.

### 2. Content

- Ballast, Concrete sleepers & elastic fastenings,
- Rail specification & corrosion, Welding Techniques, SWR, LWR (including new SEJ)
- Rail & Weld failures, USFD including SPURT Car
- Curves – Design & Realignment, Points & Crossings, Layout calculations
- Mechanized track maintenance & renewals, Track monitoring & tolerances
- Schedule of Dimensions, Derailments - Rail Wheel Interaction with case studies
- Accident / Disaster Management, Breaches & Diversion
- Track policy, track standards & renewal criteria
- Track structure on bridges, Track on electrified & track circuited sections

### 3. Pedagogy

Theoretical inputs in classrooms, sessions by field experts & practitioners, laboratory work, demo yard, model room and field visits

### 4. Duration : 3 weeks

**Venue:** Indian Railways Institute of Civil Engineering, Pune

### 5. Contact Person

**1. Sr. Professor Track -2,**  
Mob. : +91 7420041106  
E-Mail: bajpai@iricen.gov.in



Classroom with Smart Touch Panel

## Railway Bridge Engineering

### 1. Overview & Objective

Rail bridges are important infrastructural assets that need to be constructed and maintained to high standards of structural integrity. Well maintained bridges ensure safe and uninterrupted movement of traffic. Our programme is designed to provide insight and understanding of construction, inspection, maintenance and rehabilitation of various types of bridges on Indian Railways.

### 2. Content

- Various types of bridges and classification of bridges on India Railways.
- Investigations & Hydrological planning of bridges
- Various Codes governing design of bridges on India Railways.
- Bridge foundation- Open, Pile & Well foundations

- Superstructure- Fabrication of Steel girders, Construction aspects of PSC girders
- Launching of Girders, Bridge Bearings, Inspection of Bridges
- Provision of Bridge Manual , Maintenance of Arch, Steel and RCC/PSC Bridges
- Assessment of strength of existing bridges and Rehabilitation/Strengthening of different types of Bridges for normal/higher axle loads.

### 3. Pedagogy

Theoretical inputs in classrooms, sessions by field experts & practitioners, demo yard, model room and field visits

### 4. Duration : 2 weeks

**Venue:** Indian Railways Institute of Civil Engineering, Pune

### 5. Contact Person

**1. Sr. Professor Track -2,**

Mob. : +91 7420041106

E-Mail: bajpai@iricen.gov.in



Laboratory

## Railway Construction Engineering

### 1. Overview & Objective

Our programme incorporates elements of modern surveying, geotech investigation, earthwork, construction and planning of bridges. As thorough bred professionals it will equip you with knowledge for effective planning and execution of Railway projects.

### 2. Content

- Modern surveying equipment- GPS, Total Station etc.
- Hydrological investigation catchment area and waterway calculations.
- Geotechnical investigation including field test, RDSO guidelines for embankment construction and blanketing, basic concepts of tunneling.
- Safety at work site, Practical aspect of Project Management

### 3. Pedagogy

Theoretical inputs in classrooms, sessions by field experts & practitioners, laboratory work, demo yard, model room and field visits

### 4. Duration : 1 week

**Venue:** Indian Railways Institute of Civil Engineering, Pune

### 5. Contact Person

**1. Sr. Professor Track -2,**

Mob. : +91 7420041106

E-Mail: bajpai@iricen.gov.in



Classroom

## Refresher Course for Railway Engineers

### 1. Overview & Objective

Keeping the track fit in all weather conditions is vital for ensuring speedy, safe and comfortable transportation of passengers as well as smooth movement of freight. This programme is designed to refresh working knowledge of track construction, inspection and maintenance, including methods of improving the existing track for upgradation.

### 2. Content

- Maintenance aspects of SWR/LWR,
- Curves – Realignment, Provision of vertical curve in existing track for high speed.
- Points & Crossings, Layout calculations for correction of defective layout geometry.
- Yard Maintenance- Safety aspects & good maintenance practices
- Monitoring by track recording car, OMS and inspection trolley, track tolerances.
- Maintenance of Arch, Steel and RCC/PSC Bridges.
- Raising of speed on existing track.
- Rehabilitation of unstable formation/slope/cutting.

### 3. Pedagogy

Theoretical inputs in classrooms, sessions by field experts & practitioners, laboratory work, demo yard, model room and field visits

### 4. Duration : 1 week

**Venue:** Indian Railways Institute of Civil Engineering, Pune

### 5. Contact Person

**1. Sr. Professor Track -2,**

Mob. : +91 7420041106

E-Mail: [bajpai@iricen.gov.in](mailto:bajpai@iricen.gov.in)



Museum





# Details of Programme IRITM

## Safety Management & Accident Investigation

### 1. Overview & Objective

Accidents cause significant loss to human life, property and adversely impact the public image. It is of utmost importance to devise appropriate mitigation systems. In case of unfortunate occurrence, an effective system should respond quickly and provide timely succor to the affected ones. This programme aims at learning to strategize and execute rescue, relief and restoration in typical rail disaster scenarios. It incorporates investigation techniques and adopts case study methodology for achieving learning outcomes.

### 2. Content

- Disaster Management-Planning & Co-ordination for Crisis situation Management
- Chemical, Biological, Radiological and Nuclear Disasters
- Investigation techniques
- Investigation reports of serious accidents in India & Abroad
- Gender Sensitization for handling accidents
- Pinpointing & Plugging of Human Failure areas
- Handling Fire hazards & Coordination with Fire Services and Demonstration
- Crowd & Media Management during accidents
- Major Accidents-Case Studies
- Inspection and Data Loggers
- Emergency Medical Response and Trauma Care Management with hands-on
- Liability in Accident Cases
- Personal, Institutional & Societal Safety practices & Disaster Management
- Use of Data Analytics & Artificial Intelligence for Safety

### 3. Pedagogy

Case study, experience sharing and sessions by field experts & practitioners

### 4. Duration : 3 weeks

**Venue:** Indian Railways Institute of Transport Management

### 5. Contact Person

**1. Professor (DM & Admn),**  
Mob.: +91 9794862003,  
E-mail: prdm.iritm@gmail.com



Rail Safety



## Artificial Intelligence & Data Analytics in Service Delivery

### 1. Overview & Objective

Large amount of structured and unstructured data is generated in the course of operation and maintenance of transportation services. Decision making facilitated by use of data analytics & artificial intelligence results in better, reliable & satisfactory service delivery. It results in improved predictive maintenance of assets, replacement, rehabilitation & planning. This programme envisages purposeful discussion on basics of emerging technologies and their application in service delivery. Exposure to this programme will enable the professionals to take timely and effective decisions.

### 2. Content

- Introduction to Big Data Analytics and Artificial Intelligence
- Case Studies
- Applications of AI in service design & delivery
- Asset Management for Value Creation
- Complaint Management & Grievance Redressal - use of DA
- Leveraging Cloud, Mobile & AI for Business Transformation
- Cloud Computing for Business/leveraging scale
- Social Impact of Machine Learning/Artificial Intelligence

### 3. Pedagogy

Case study, experience sharing and sessions by field experts & practitioners

### 4. Duration : 2 weeks

**Venue:** Indian Railways Institute of Transport Management

### 5. Contact Person

**1. Sr. Professor (IT & Trg),**  
Mob.: +91 9760530901,  
E-mail: trips1967@gmail.com

## Traffic Planning, Logistics & Supply Chain Management

### 1. Overview & Objective

Various sectors of economy require different logistic frameworks. Efficient logistics & supply chain management requires multi-modal transport infrastructure. It becomes imperative to strengthen the infrastructure by planning new assets and easing bottlenecks within the existing transport systems. Our programme provides for comprehensive coverage of Logistics & Supply Chain Management with due emphasis on sectoral requirement, logistics solutions, network strengthening and assets planning.

### 2. Content

- Introduction to Logistics and SCM
- Planning, Costing and Rating of Transport Services
- Strategic Planning for Multi Modal Terminals & Sidings
- Logistics & SCM for facilitating E-commerce & FMCG Industry
- Logistics for Military Movement
- Logistics for Cement, Coal, Food-grains, etc.

sharing and sessions by field experts & practitioners

### 4. Duration : 1 week

**Venue:** Indian Railways Institute of Transport Management

### 5. Contact Person

**1. Professor (Comml & Trg.),**  
Mob.: +91 9794862002  
E-mail: p09sshukla@iima.ac.in

### 3. Pedagogy

Conceptual inputs, Case study, experience

## Development of Commercial Spaces & Sidings

### 1. Overview & Objective

Land is a high value asset in any organization more so in Railways who own large chunks of land in prime locations. Its efficient use entails, inter alia, the commercial development of vacant spaces, efficient design of yards to maximize non-fare revenue generation. This programme covers land value capture techniques including valuation methodology of land assets, various models of collaborative development (PPP), architecture and design of commercial spaces. It aims to align various stakeholders by exposing them to extant policies and contemporary development models.

### 2. Content

- Introduction to Policies on PPP and land development
- Various models of PPP and collaborative efforts
- Designing of yards and terminals
- Sector wise requirement of yards and siding design
- Advances in development of Logistics Parks, PFTs, etc.
- Legal Framework for long term contracting & arbitration
- Integration of all transport sectors for integrated transport solutions.

### 3. Pedagogy

Class room sessions, Case discussion, experience sharing and sessions by field experts & practitioners

### 4. Duration : 1 week

**Venue:** Indian Railways Institute of Transport Management

### 5. Contact Person

**1. Sr. Professor (Ops & Admn),**  
Mob. : +91 9760530902,  
E-mail: kapilirts@gmail.com



Library



Class Room





## Details of Programme JRRPFA

## Law Enforcement in Railways and related area

## 1. Overview & Objective

This programme is meant for public and private law enforcement agencies. The coverage includes basics of security protocols, weapons handling, and statutes etc.

## 2. Content

- Basic Drill knowledge
- Basic Physical Training
- Proper Wearing of Uniform
- Familiarizing with different weapons presently used in the uniformed services.
- To develop leadership qualities & to learn command and control.
- Familiarization with the issues of Law Enforcement over Railways



Firing Range

### 3. Pedagogy

Workshop style with some class room sessions

4. Duration: 1 week

**Venue:** Jagjivan Ram RPF Academy



## IED Model Room

## 5. Contact Person

**1.SC/OD JRRPF Academy, Lucknow.**

Mob: +91 7524984029

## Explosives, IEDs & Counter Measures

## 1. Overview & Objective

In present times, Improvised Explosive Devices (IEDs) are widely used by terrorists, naxalites & criminals to instill terror and disrupt law & order. This programme will equip participants with basic knowledge of explosives/explosions etc. It helps in dealing effectively with incidents of bomb threats/blasts etc. and taking follow-up action apart from preventive measures.

## 2. Content

- Introduction to Explosives, Types of Explosions, Effects of Explosion etc.
- Concept of IEDs/Bomb & visit to IED Model Room at the Academy.
- Introduction to BD equipment & visit to BD Unit of Army
- Countermeasures: Bomb Threat Contingency Plan, Real bomb calls, Hoax bomb calls & DO's & Don'ts

- Forensic Science Laboratory: Examination of exploded materials, collection, investigation techniques, and report writing.

### 3. Pedagogy

Theory and concepts in class rooms,  
laboratory sessions, field visits and inputs by  
field experts & practitioners

**4. Duration.: 02 week**

**Venue.:** Jagjivan Ram RPF Academy

### 5. Contact Person:

1. ASC/Training, JR RPF Academy,

**Mob.: +91 9794833732,**

+91 9838276086(Whats app);

**E-mail:** mskhan.rpf@gmail.com

# INDIAN RAILWAYS CENTRALISED TRAINING INSTITUTES CONTACT DETAILS

## National Academy Of Indian Railways, (NAIR)

📍 Lalbaug, Vadodara-390 004, Gujarat, India.  
☎ +91-265-2652987  
📠 +91-265-2638267  
✉ mail@nair.railnet.gov.in  
🌐 www.nair.indianrailways.gov.in

## Indian Railways Institute of Electrical Engineering, (IRIEEN)

📍 Post Box 233, Nasik Road - 422 101,  
Maharashtra (India)  
☎ +91-253-2462545/2462546  
📠 +91-253-2462548  
✉ admn2@iriesen.railnet.gov.in  
🌐 www.iriesen.indianrailways.gov.in

## Indian Railways Institute of Mechanical & Electrical Engineering, (IRIMEE)

📍 Workshop Road, East Colony,  
JAMALPUR -811214  
Dist. MUNGER, BIHAR, INDIA  
☎ +91 6344- 243184 📠 +91 6344-243293  
✉ diririmee@gmail.com  
🌐 www.irimee.indianrailways.gov.in

## Indian Railways Institute of Signal Engineering and Telecommunications, (IRISET)

📍 Tarnaka Road, Secunderabad - 500 017  
☎ +91-40-27820315  
📠 +91-40-27823922  
✉ aptrg@iriset.railnet.gov.in  
🌐 www.iriset.indianrailways.gov.in

## Indian Railways Institute Of Civil Engineering, (IRICEN)

📍 11A, South Main Road, Koregaon Park,  
Pune 411001  
☎ +91 -26123436  
📠 +91 - 20-26128677  
✉ mail@iricen.gov.in  
🌐 http://www.iricen.gov.in

## Indian Railways Institute of Transport Management, (IRITM)

📍 Hardoi By-pass Road, P.O. Manak Nagar,  
Lucknow – 226 011, Uttar Pradesh, India  
☎ +91-522-2451942 📠 +91-522-2451964  
✉ director.iritm@gmail.com  
🌐 www.iritm.indianrailways.gov.in

## Jagjivan Ram RPF Academy, (JRRPFA)

📍 Talkatora Road, Alambagh,  
P.O.-Manak Nagar, Lucknow-226011  
☎ 0522-2451730, 2450341  
✉ directorjrrpfacademy@gmail.com