वार्षिक रिपोर्ट | **Annual Report**

November 24, 2021

Indian Railways Institute of Signal Engineering & Telecommunications

Secunderabad

Index

Part I

○ Short Brief

○ Indian Railway Institute of Signal Engineering and Telecommunications (IRISET) was established in 1957. The institute is the 4th established Centralised Training Institute among 7 Institutes in Indian Railways. Today, the institute is completing 64 years of its existence. The institute is a secured, eco-friendly, and clean-and-green campus spreading over 28 hectares and is located centrally in the city and easily accessible from any part of the country.

○ The institute is a premier technical inhouse training institute in Asia and has trained more than 98,090 personnel since its inception. The institute is one of the well equipped and state-of-art classrooms of 350 seat capacity, 350 hostel beds and 5,000 sq mtr lab setups, 220 seat Indoor auditorium, 1000 seat Open Auditorium and indoor & outdoor sports facilities

○ Contributions to Indian Railways

○ The institute has steered the review committee to revise the Signal Engineering Manual (SEM) and successfully complete the work. SEM has been published in ebook format and searchable pdf format for the first time in July 2021. The one set of published copies has been issued to all zonal railways and Railway Board.

○ The Telecom Manual was revised and released in September 2021, in which the institute was represented as a review committee member.

○ The institute formalised the initial courses for huge intake of new supervisors on hybrid model of content delivery and could conduct the training even during pandemic time.

○ The institute has formalised the course contents for new upcoming technologies like Kavach, LTE and IP-MPLS.

○ Improvements & Innovations

○ Improvements to infrastructure, training and subject notes are a continuous process. Some of the key improvements are to be mentioned. They are as:

(1) Set up of Kavach - Train Protection System Laboratory having all vendor makes

(2) Set up of Siemens RRI System in Electrical Signalling Laboratory

(3) New video content on Intranet - 94 nos of new educational videos and 70 hours of classroom session videos developed in-house , 580 short videos of e-learning content

(4) Deployment of Learning Resources Matrix on Intranet for trainees for locating appropriate resources on the subject

(5) Provision of QR Codes in all laboratories for ease of access of Lab resources

(6) Preparation of New Subject Notes - Kavach, LTE and IP-MPLS

(7) Augmentation of Train Detection Lab with High Availability Single Section Digital Axle Counter Equipment

(8) Provision of 4 new state-of-the art Interactive projectors in Classrooms

(9) On infrastructure, 14 crores are being spent to have a 100 bed Officers hostel, 2 new state-of-art Class Rooms and improvements to existing infrastructure.

(10) Update the knowledge of faculty on new technologies - Electronic Interlocking, LTE, IP-MPLS and organised Field Visits to OEM premises, station installations

(11) Launch of IRISET Trainee Management System (ITMS), a comprehensive portal for managing the training, course, hostel and logistics management

(12) Upgrade of bandwidth to 250 Mbps, sourcing of 1TB web server, deployment of 135 GB for secure access to all trainees, 5 Virtual Conference accounts, 20 VPNs for hybrid learning

(13) Formalising of New Courses for IP-MPLS, LTE, Kavach

(14) Access to eMagazines, ePaper and eManuals to trainees through the Library Management System

○ Policy Implementation

○ Implementation of Human Resource Management System Modules - Service Record, ePass, Provident Fund, APAR, Retirement settlement

○ Celebration of national events - Republic Day, Independence Day,

○ Observance of Constitution Day, Mahaparinirvan Diwas, International Womens Day, Dr BR Ambedkar Jayanthi, Anti Terrorism Day, International Yoga Day, World Environment Day, Sadbhavana Diwas, Rashtriya Ekta Diwas, Swachhta Pakwada, Rajbhasha Pakhwada, Communal Harmony Week, Vigilance Awareness Week, Railway Week

○ Administering of Pledges - Integrity, Sadbhavana, Anti-terrrosrim, Swach Bharath and Rashtriya Ekta.

○ Performance

○ The institute is actively involved in the handholding of Zonal S&T training schools in policy formulation for training of S&T manpower. A common shared digital repository is put in place for optimum utilization of resources among all stakeholders including the Zonal S&T training schools and Zonal S&T training managers. In the current year, the recorded lectures of Refresher courses and equipment courses on IPMPLS and LTE are made available on the shared facility.

○ The Institute trained the executives of CMRL, DFCCIL and RVNL organisations engaged in creation of infrastructure for nation building.

○ The institute conducted 85 on-line and 27 on-campus courses in the year catering to different target groups. The institute trained 5801 personnel (567 Gazetted, 5144 Non-Gazetted and 90 executives of PSUs) in the year. The number of trainees trained is 18.4% more than previous year. IRISET reached the historic milestone of logging 1, 00,000 trainee days on 03rd September

2021 within 8 months of calendar year. IRISET is the first CTI to achieve this feat.

○ IRISET has taken this momentous opportunity to rename the Indoor Auditorium after Shri S.A. Srinivasan, Founder Principal of the Institute, as a mark of respect and gratitude to the great visionary. As on 31.10.2021, the Institute has registered 1, 24,882 trainee days, an increase of 138%, in the current year.

○ The institute earned Rs 1, 40, 05,553 through training of 90 executives of DFCCIL, RVNL and Chennai Metro. The institute has also conducted 12 online equipment courses on modern technology systems like Kavach, LTE and Digital Axle Counters.

● Challenges

● The biggest challenge before the Institute in the current year was to undertake on-campus training of 1500+ supervisors newly inducted into the Zonal Railways through various selections amid pandemic challenges. The capacity to train is constrained as a consequence of restrictions imposed for management of COVID-19. It is happy to note that this institute has taken all pandemic measures in true spirit and there was no single case of serious outburst of pandemic within the campus during the year.

● Activities in the Institute during the year 2021 amidst the pandemic times are quite different from those in the year 2020. The year 2020 was engaged with redesigning of training courses in hybrid structure and imparting training through virtual platforms. With the progressive improvement of the COVID-19 situation, the Institute commenced physical classes for mandatory initial training courses from 18.12.2020. The Institute initially commenced on-campus sessions for only a couple of batches with strict protocol for management of COVID-19 in place and subsequently, the full capacity was reached in March 2021.

● The trainees were isolated during the initial two weeks of their reporting at the institute in individual rooms. The hostel authorities had made arrangements to supply food to the trainees in their rooms throughout the duration of isolation. Medical advice from doctors of South Central Railway

was arranged for the symptomatic trainees.   The Institute had mandated recording of the status of the individual on the Arogya Setu app in the CCTV cameras kept at the entry locations of the buildings in the institute.   The audio visual systems available in the Institute were predominantly used for sensitization of the inmates of the institute on the precautions to be taken to prevent spread of COVID-19.   Sports & Cultural facilities were restricted during this period, to avoid trainees moving in large groups.   Restrictions were imposed on the movement of trainees outside the campus.

- The Institute had taken swift action to make arrangements of spacious class rooms with adequate physical distance, equipped with multiple displays and interactive writing panels and an augmented public address system.   The timings of mess and physical classes are staggered to prevent the congregation of a large number of trainees.

- A vehicle was made available 24/7 at the disposal of trainees for enabling them to reach hospital in the shortest possible time. The close proximity of Central Hospital, Lallaguda within a distance of 2 km is an added advantage for the Institute to handle the pandemic scenario effectively. The pandemic period has seen hospitalization of three trainees in Central Hospital, Lallaguda for COVID-19 complications. The active support of medical authorities of South Central Railway has also helped the institute to vaccinate its employees and trainees extensively.   In addition to getting vaccinated in the community facilities arranged by South Central Railway in the vicinity of the institute, the institute also arranged vaccination camps within the institute's campus on 04 occasions exclusively for the faculty, staff and trainees. Approximately 500 trainees were vaccinated in these camps. The vaccination facility was also extended to the outsourced staff working in the Institute.

- Since the situation during the 2nd wave of pandemic is not conducive to invite trainees to the campus, new modalities were decided for Refresher and Intermediate training courses. The literature and 57 demonstration videos of practicals are made available on the website for access by all trainees. The practical doubt clearance sessions were arranged for 4 weeks through a virtual platform to enable the trainees to clear their doubts pertaining to a particular laboratory on a nominated day of the week from the faculty of IRISET. This facility was used by trainees of Refresher courses, promoted JE courses (Intermediate courses) and faculty of Zonal S&T training schools. Subsequently, the subjective examinations for Refresher Courses and Promoted JE courses were conducted in the premises of Zonal Railways in association with the nodal examination officers nominated in each division.

The evaluation of answer sheets was done and results were declared by IRISET. Supplementary examinations were also conducted to benefit the trainees who could not write examinations in the first instance. Refresher Course examinations were conducted for 1115 Signal supervisors and 690 Telecom supervisors at one go in this fashion. In case of Promoted JEs, the responsibility of practical exposure of trainees is delegated to the Zonal Railways in their training schools.

● There was flexibility and dynamism in taking various decisions in conducting the training courses during the pandemic in order to maintain the momentum in spite of the adverse circumstances. The trainees of the institute had strong faith in the management of the Institute and obeyed the discipline meticulously. Greater flexibility is exercised to plan training courses with an aim to complete mandatory training of a large number of new recruits in the shortest possible time.

○ Looking Forward

○ Fast changing technology and the need to expand at the expected rate in the creation of infrastructure highlight the need for training not only to the new members of the family but to the in-service personnel. Appropriate training inputs are required to meet the customer needs and aspirations of the people of the country on the national transporter in the changing scenario of ecosystem and management structure of the organisation. It is imperative for an organisation like IR to lay adequate emphasis on training the human resources. The annual expenditure incurred to run IRISET and create infrastructure is around 1% of the total expenditure incurred by the S & T department. The institute is required to be upgraded to enhance the capacity of training and equip with modern technology systems for first hand exposure of the trainees from all corners of the country. The decision to post Director Generals to head CTIs is a welcome step. Adequate delegation of powers and functional autonomy are the need of the hour to improve the efficacy of training.

○ The Institute is working on improving the quality of on-line classes through various means of imparting training and evaluation with inclusion of audio visual content in an appreciable manner.   The Institute has also commenced work on improving the quality of question banks.   The Institute aims to

introduce self learning courses for Refresher Training of Signal and Telecom supervisors. The Institute would be scheduling Equipment courses on Modern Signalling & Telecom. Subjects like Kavach, Electronic Interlocking, CTC, IPMPLS, LTE etc for all the categories of S&T Personnel in the next year. The institute would also tap the potential for training of manpower in PSUs as well as private bodies.

○ Training needs of rail industry to be catered for, and thereby revenue generation to the railways

○ Online Self-learning Courses for reskilling of working supervisors

○ Smart Class rooms having Interactive Boards, Webcasting Facility, equipped with Wi-Fi, High fidelity Audio Systems and High Definition Video Display System with High Bandwidth connection for Streaming and Streaming of 4K Video Lectures/Videos.

○ Auto selection of nomination of Trainees as per the Mandatory Schedule and requirement.

○ The update of knowledge and content delivery of Trainers of STTC by Training them via dedicated High Bandwidth Video TeleConference.

○ New labs for latest technologies like LTE, IP-MPLS, SDNet, Artificial Intelligence, BIG Data mining, Internet of Things and augmentation of the existing Telecom Labs.

○ Fully eco-friendly campus with Water recycling, Solid waste management, Sewerage Treatment, Drip irrigation and Solar panels.

Part II

○ About

○ It was established in 1957 as All India S&T School. After changing its name four times in between, it was named as Indian Railway Institute of Signal Engineering and Telecommunications (IRISET) in January 1971. It has completed 64 years of its existence and has imparted training to more than 98,000 personnel.

○ IRISET is the Fourth Centralised Training Institute to be established on Indian Railways for imparting Training in Railway Signalling Engineering and Telecommunications.

○ Mission, Vision, and Values

मिशन विवरण ⋆ Mission Statement
To deliver the knowledge to make the workforce competent and confident in their field of working
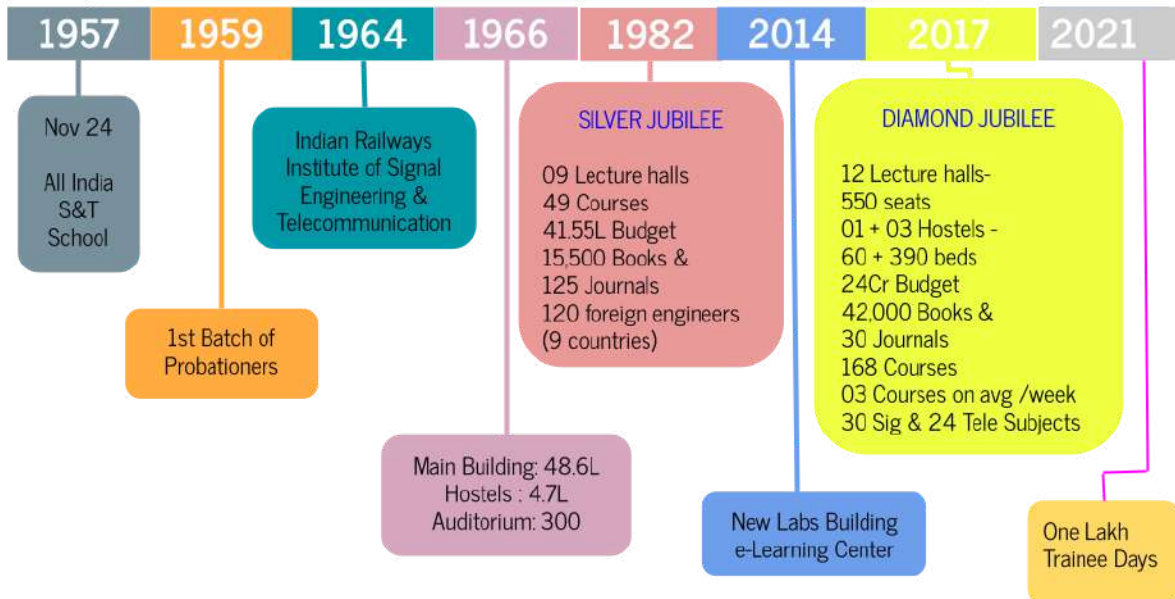
विज़न विवरण ⋆ Vision Statement
To make IRISET a technical institute of global repute

महत्व ⋆ Values
Discipline, Devotion to duty, Integrity, Competence, Team Working and Safe Working

Safety, Security & Punctuality

○ # Milestones

1957	1959	1964	1966	1982	2014	2017	2021

1957 — Nov 24 — All India S&T School

1959 — 1st Batch of Probationers

1964 — Indian Railways Institute of Signal Engineering & Telecommunication

1966 — Main Building: 48.6L / Hostels : 4.7L / Auditorium: 300

1982 — SILVER JUBILEE
- 09 Lecture halls
- 49 Courses
- 41.55L Budget
- 15,500 Books & 125 Journals
- 120 foreign engineers (9 countries)

2014 — New Labs Building e-Learning Center

2017 — DIAMOND JUBILEE
- 12 Lecture halls- 550 seats
- 01 + 03 Hostels - 60 + 390 beds
- 24Cr Budget
- 42,000 Books & 30 Journals
- 168 Courses
- 03 Courses on avg /week
- 30 Sig & 24 Tele Subjects

2021 — One Lakh Trainee Days

○ # Role

○ IRISET imparts training on Signal & Telecommunication subjects and certain general subjects of interest. IRISET has a mandate to conduct mandatory training courses both initial and Refresher Courses for officers and supervisors. IRISET conducts specially designed customer specific courses on modern technology systems . IRISET delivers training to executives of PSUs , Metros and private bodies.

○ The clientele of IRISET is around 4000 plus in a year. IRISET has also trained 332 trainees from 19 foreign countries on Railway systems and Signal & Telecommunication technology.

Trainees

Courses
- Initial & Integration Courses
- Appreciation Courses
- Electronic Interlocking Courses
- Signalling Design Courses
- Equipment Courses
- General and Safety Courses
- Special Customised Courses

2021
Courses   :   112
Trainees   :   5,801
Trainee Days : 1,24,882
Earnings   : Rs. 1.40Cr
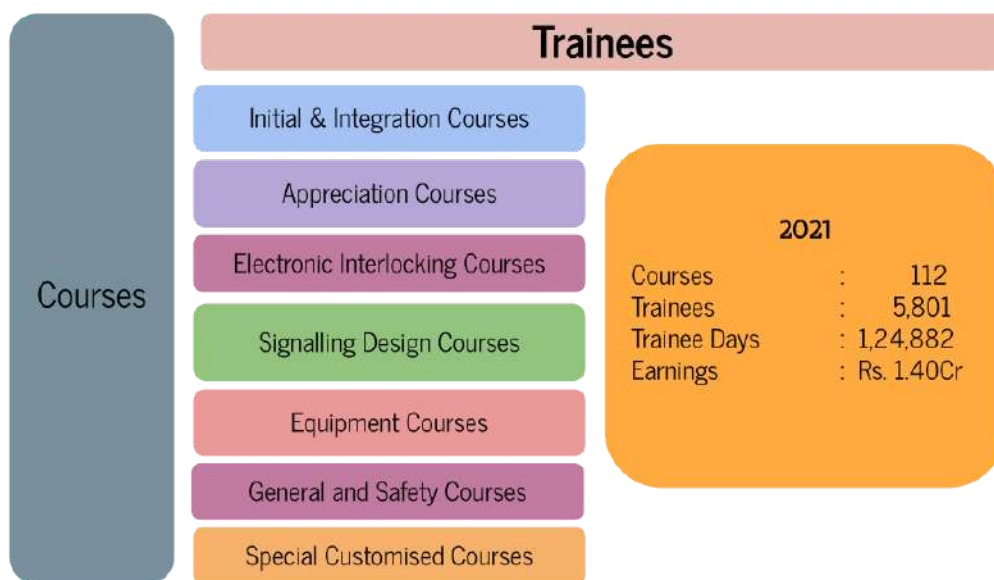
○ Location

- The Institute is Situated in Secunderabad, Telangana. It is conveniently located in South Lalaguda, has road and metro train access, just 3 km away from Secunderabad Railway Station and about 42 kms from Hyderabad Airport. The campus is spread over an area of 28.3 hectares.

○ Organization

- IRISET is headed by a Director General (DG) who is a Higher Administrative Grade Plus officer belonging to Indian Railway Service of Signal Engineers. DG is assisted by Additional Director General. The Dean of the institute lookafter the campus infrastructure and works. He is assisted by Assistant Library and Information Officer, Rajabhasha Adhikari. Signal, Telecom and Information Technology wings are headed by Senior Professors and they are in turn assisted by Professors, Assistant Professors, Lectures and Instructors. Administration work is looked after by Senior Professor Administration and he is assisted by Professor , Executive Assistant and Assistant Secretary. Training wing will schedule the courses and look after the training needs of the trainees. He is assisted by an Assistant Professor.

- All faculty members possess rich experience in their field and have a flair for teaching. Training in laboratories is primarily managed by 32 instructors who are in various supervisory grades.
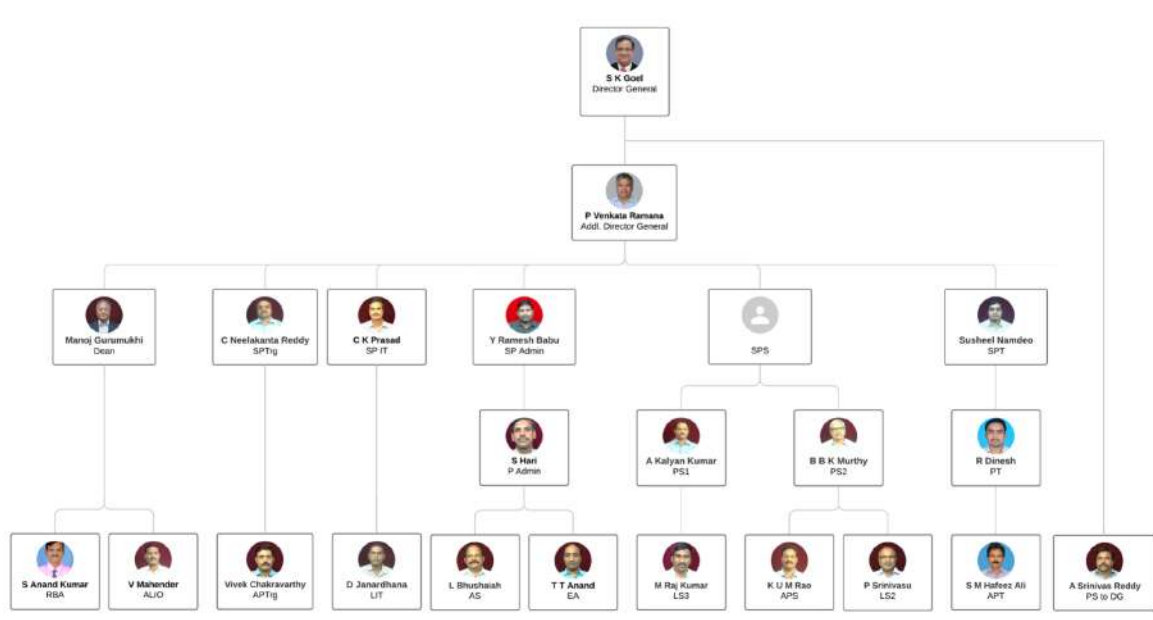
○ Infrastructure

○ Campus

○ The institute is a secured, eco-friendly, and clean-and-green campus spreading over 28 hectares and is located centrally in the city and easily accessible from any part of the country.

○ Security

○ Campus is secured 24x7 with security guards.

○ An Integrated Security Camera System with 132 cameras has been provided on the campus to monitor open areas, administrative block, classrooms, laboratory, hostel and sports premises.

○ Wifi

○ 124 Nos. of Wifi access points have been provided in Administrative Block, Laboratories, all Hostels for seamless internet provision.

○ ## Classrooms

○ There are 12 classrooms with a seating capacity of 550. The classrooms are provided with state of the art Audio Visual equipment, Air conditioned to provide a decent level of comfort to trainees.

○ In conforming to covid-19 guidelines ,two rooms are converted into classrooms duly equipped with required logistics.

○ Two new class rooms with modern class room facilities are made ready to augment the classroom capacity.

○ ## Hostels

○ There are four hostels, out of which one is for Officers and the remaining three for Supervisors with a capacity to accommodate 450 trainees. Recently renovation works have been carried out in all the hostels to provide a comfortable stay to the inmates. Day to day housekeeping activities in all the hostels have been outsourced. A separate mess is attached with each hostel, which is run on contract basis. Televisions, Gym, some indoor games like Table Tennis, Carroms, Chess etc. are available in each hostel. In addition Billiards table and a state of art Gymnasium is available in Officers Hostel. A new Supervisors hostel to accommodate 112 trainees is under construction.

○ # Sports

- ○ Institute has excellent facilities of cricket, badminton (two synthetic courts and one wooden floor court), tennis (one synthetic and four clay courts), volleyball, basketball, skating rink and Golf within the campus.

○ # Auditorium

- ○ There is a well furnished centrally air-conditioned auditorium with a seating capacity of 320 seats, which is used for training using projectors, large screen, organising seminars, official functions, cultural programmes.

- ○ Openair Auditorium of 1000 seat capacity is located in the campus for conducting major functions and celebrations.

○ Library

○ Institute's library with a seating capacity of 60 persons has a collection of about 30000 books on various subjects. A wide collection of signalling and telecommunication books are available. Library subscribes to 30 journals and periodicals of India and abroad. There is a large collection of Hindi literature books. Library is automated by providing the


State - of - art library management system software (Libsoft). Online public

access catalogue (OPAC) is available to search any type of documents in the library. All the books are barcoded to facilitate inventory management and issue return of books. A scanner and photo Identity card-cum-library card printer are available.. Four PCs are provided for the use of trainees for browsing the internet and also for viewing audio visual CDs. The access for e-journals, e-magazines, e-books, e-manuals and NDL has been provided in ITMS.

○ National Knowledge Network (NKN) with 100Gbps pipe is made available on campus intranet to access a large number of technical and research books.

○ # Laboratories

○ The Institute has well equipped laboratories for imparting hands-on training to the trainees on various subjects relevant to their jobs. A new laboratory building for capacity enhancement has come up in the year 2014 for housing new equipments on modern technologies.
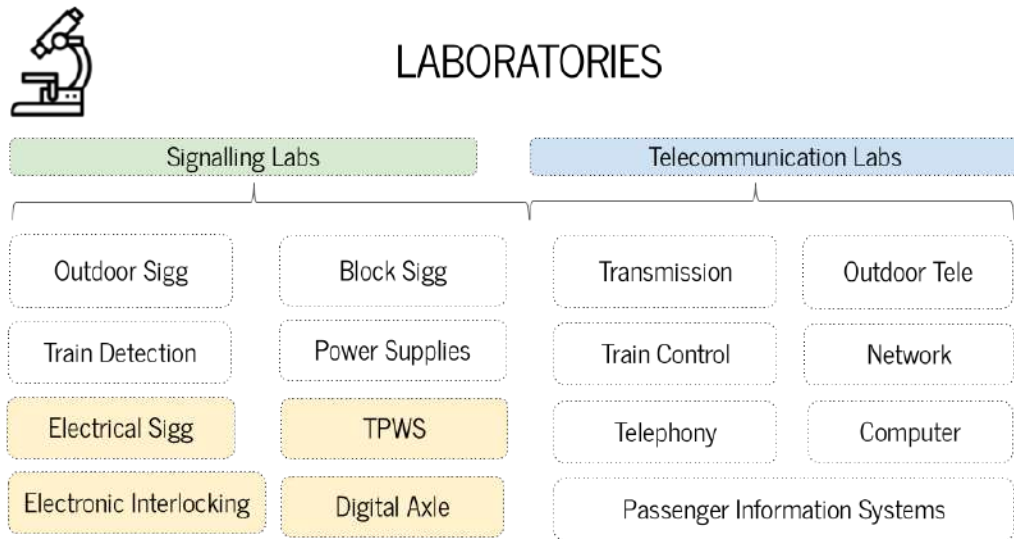
● Signalling Labs

● Outdoor Signalling Lab

● This lab will give the exposure to the trainees on various outdoor signalling gears available in the field viz.,Point machines (IRS-conventional & thickweb) , LC gates -MOLB &EOLB ,both RH and LH turn out layouts consists of type of point layouts like LH & RH turnouts with point machines like IRS (conventional & thickweb), Track circuits for RE & Non RE , Signals with different types of route indicators and cascading arrangements, Mechanical signalling arrangements

- ## Train Detection Lab

  - This Laboratory is mainly equipped with different types of track detecting devices like Audio Frequency Track Circuit of ABB ,Ansaldo UM71, Siemens FTGS and Alstom makes. The trainee will be able to study about the functionality of the systems,measure various parameters and troubleshoot minor failures created.

- ## Digital axle counters Lab

  - This lab consists of different types of Single/Multi/Dual (High Availability) digital axle counters of CEL, GGtronics ,Medha, Eldyne makes.The trainee will be able to study the general architecture of system,their functions and system power supply requirements.The trainees will be able to appreciate the advantages of Digital axle counters over conventional track circuits.Trainee will be able to know the advantage of HASSDAC over SSDAC in improving the reliability of the system.

- ## Train Protection and Warning System Lab

- This lab consists of

  - TPWS systems of Ansaldo and Siemens makes

  - IRATP system : Kavach Equipments of HBL, Medha and Kernex makes

  - The trainee will be able to study the general architecture , various modes of operation and features of TPWS and Kavach systems

○ The trainee will be able to differentiate the functionality between TPWS and Kavach systems.Testing of Kavach control table can be demonstrated.The trainee will be able to simulate various field cenarios using simulation panel.

- ## Electrical Signalling Lab

- The trainees will be exposed to different types of Electrical signalling Interlocking systems (British and Siemens).

- The trainee will be able to study various features of panel operation. The trainees will be exposed to troubleshooting the failures created. The trainee will be able to study different types of relays and their purpose.

- ## Electronic Interlocking Lab

- This lab consists of Electronic interlocking systems of different makes(Ansaldo,Medha,Siemens,Kyosan and GE)..The trainees will study about various EI system architecture(centralized or distributed), reliability features of the system and power supply arrangements of the systems .The lab consists of FAT setup model which enables them to test the signal control table.The trainee will be able to appreciate the compactness and reliability of these systems compared to conventional RRIs.

- ## Power Supply Lab

- This lab consists of various types of IPS Systems.The trainee studies about various parts of IPS system, and their functions.He will be able to appreciate the ease of maintenance of these compact systems compared to bulky conventional systems.He will be able to access the load requirements of a station.

- ## Block Signalling Lab

- This lab consists of various types of block instruments ,IBS, UFSBI, bench model of Automatic block working system.The trainee studies about various type of single line and double line block instruments there features,modification required to suite to RE area,functioning of various block circuits, The trainee studies about the concept of Intermediate block working and automatic block workin and their circuity. Trainee will be able to appreciate the line capacity enhancement using these systems. .

- ## Telecom Labs

- ## Outdoor Telecom Lab

- This lab facilitates the trainees in Study of construction details of various types of Underground cables and indoor cables used for Telecom application and pair/quad identification. Measuring the electrical parameters of cables i.e. Loop resistance, insulation, transmission loss, psophometric noise. Jointing methods of underground cable. Fault localization and Cable Route Tracing with specialized instruments. Study of Power supply arrangements, maintenance practices for Telecom applications. Battery chargers - self regulating and SMPS based. Lead acid cells - Maintenance free and VRLA type. Construction and maintenance practice of Earthing arrangements.

- ## Computer Lab

- The computer lab is well equipped for conducting online examinations for 50 trainees at a time using Moodle service which is debian based open software developed in house. It also provides support for all the hardware, Software and Networking.

- ## Network Lab

- This lab is aimed to train the trainees in concepts of TCP/IP networking by providing the real time environment. It is equipped with layer 2 and layer 3 switches, IP routers, SHDSL modems, Statmuxes and Terminal server.

Training is imparted in Establishing LAN and WAN, IP configuration of network devices

- ## Passenger Information System (PIS) lab

- The Lab is equipped with IPIS rev 2.0 of RDSO/SPN/TC/61.and IPIS rev 4.0 Integrated Passenger Information system with complete model setup along with application software & hardware like Platform display boards, Coach guidance display boards & At a glance display boards is established with hot standby mode.

- Aimed to impart training to the trainees on Study of Passenger Information System, PIS Network Configuration and Troubleshooting of IPIS Network

- ## Telephony Lab

- This lab is equipped with different types of Circuit Switching basedTelephonySystems(ISDN-PBX) to impart training on hardware, software configuration and inter exchange connectivity using PRI, E1 and COinterfaces.

- This lab is also equipped with Packet Switching based IP-Telephony Systems (Open source server based IP-PBX)to impart training on hardware, software configuration and inter exchange connectivity using IP- Trunks, SIP trunks, PRI Gateways and CO gateways.

- Apart from these, training on IP-DSLAM Equipment and its end point ADSL Modem configuration for extending broadband and voice services to subscribers is imparted.

- ## Train Traffic Control Lab

- This lab gives an opportunity to trainees to get acquainted with the actual system of Train Control Working with the help of various types of control communication equipment like Control Communication Equipment over Optical Fibre (CCEO) and Conventional Control Equipment available all over Indian Railways.

- ## Transmission Systems Lab

- The Transmission Systems Lab Houses all the equipment needed for long distance communication. It offers training in programming of the systems and measuring various parameters, to establish and maintain a stable communication link. Trainees are exposed to sophisticated measuring instruments, like SDH Analyser ANT20 of JDSU make, PDH Analyser, OTDR, Fusion Splicing Machine etc.

- This lab imparts training on OFC, PDH and SDH equipment upto STM-4.

IRISET Club

- In addition to the academic activities and to have an overall development of trainees, a club has been formed in the Institute to promote various extra-curricular activities. The club provides a platform for interaction between the trainees and staff. The Club organises various Sports and Cultural events. Tournaments in cricket, carroms, badminton, volleyball, Table tennis and chess are organised on a regular basis. During official functions, cultural programs are organised with active participation from trainees. Holi Milan, Diwali Sammelan and get-togethers are organised by Club.

○ # Heritage Gallery

○ A Heritage gallery having a collection of various Signalling and Telecommunication equipment depicting the evolution of Railway Signalling and Telecom was inaugurated in the year 2018 as part of the Diamond Jubilee Celebrations of the Institute.

○ # eLearning Center

○ e-Learning has been established to augment the traditional learning. This facilitates anywhere, anytime learning. A reliable computerised training network has been established which acts as a central repository of all S&T content including professionally developed multimedia modules. A total of 29 modules have been developed on various Signalling and Telecommunication contents which are available both on Railnet and Internet.

○ ## Courses

○ Railway Signal Engineering is not covered as a curriculum in any university, college or any other teaching institutions. The availability of literature on this subject is also limited. This puts IRISET in a unique position as the only institution imparting training on Railway Signal Engineering, not only in India, but also in larger parts of the world.

○ The following courses are conducted for officers and supervisors on regular basis.

Category	Name of Training Course	Duration (weeks)
Gazetted Officers	Initial Course for IRSSE Probationers Phase-I	12
	Initial Course for IRSSE Probationers Phase-II	12
	Integration Course for Group B Officers (Sig to Tele) Phase I	04
	Integration Course for Group B Officers (Sig to Tele) Phase II	04
	Integration Course for Group B Officers (Tele to Sig) Phase I	06
	Integration Course for Group B Officers (Tele to Sig) Phase II	06
	Special Course for SAG Officers	06
	Appreciation Course for All other Services Probationers	01
	Equipment Course on Signalling & Telecom Systems including modern Technology subjects	1-2
Signal Supervisors	Initial Course for App.JE/SSE (Signal)	28
	Initial Course for Promoted JE(Signal)	17
	Initial course for App.JE/SSE(Design)	18
	Refresher Course for JE/SSE(Sig. & Design)	4

|	Equipment Course on Signalling Systems including modern Technology subjects	1 - 2
Telecom Supervisors	Initial Course for App.JE/SSE (Telecom)	28
	Initial Course for Promoted JE(Telecom)	12
	Refresher Course for JE/SSE(Telecom)	4
	Equipment Course on Telecom Systems including modern Technology subjects	1 - 2

○ Railway Signal Engineering is not covered as a curriculum in any university, college or any other teaching institutions. The availability of literature on this subject is also limited. This puts IRISET in a unique position as the only institution imparting training on Railway Signal Engineering, not only in India, but also in larger parts of the world.

○ Initiatives

### ○ Virtual Classes

○ A Classroom session of IRISET is virtually extended to all the Zonal Signal and Telecom Training centres so as to extend the benefit to Technicians.

Signalling & Telecommunication Training Centers

- Moula-ali/SCR
- Kharagpur/SER
- Sabarmati/WR
- Byculla/CR
- Nainipur/CR
- Bilaspur/SECR
- Liluah/ER
- Malda/ER
- Ghaziabad/NR
- Gorakhpur/NER
- Pandu/NFR
- Podanur/SR
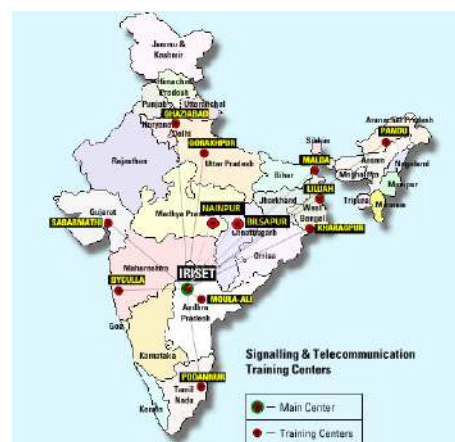
○ Learning Management System – A new Initiative

○ Learning Management System (LMS) based on Moodle Platform is implemented which is a free and Open source product. This enables educators to make dynamic courses that extend learning anytime, anywhere. Online Course Content with Subjective Questions and objective question bank with more than 10,000 questions is made available in this LMS. It is also Mobile friendly. Online examinations have been conducted on this platform.
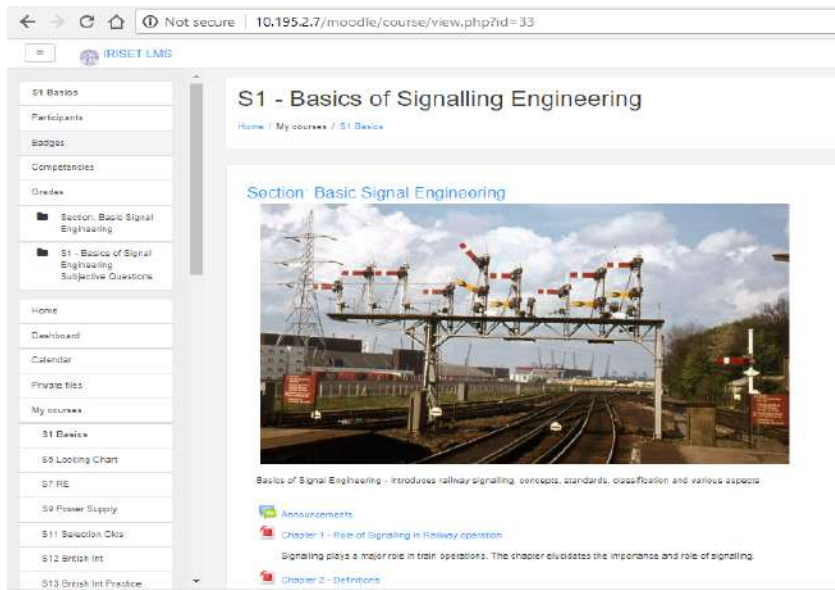
○ Question Banks
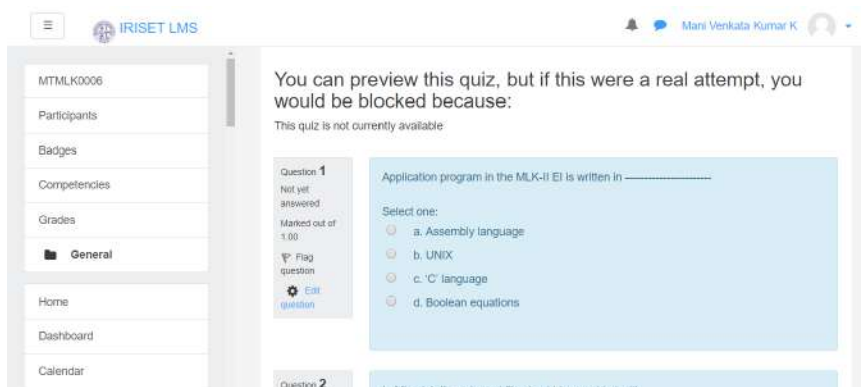
The learner can access his understanding by taking quiz on each chapter

○ Audio - Visual Content

○ Workshops & Seminars

○ Missions

- IRISET campus is a green campus. Golf course on campus adds to the scenic beauty. During important occasions and dignitaries visit, tree plantations are carried out to constantly improve the green cover.

- Swachh Bharat Mission: Swachhta Pakhwada is organised as per guidelines issued by Government of India. In addition to this shramdaan activities are planned and carried out to have a clean campus.

- The campus has lots of open places and rain water in the institute recharges the water table. In addition to this Rain water harvesting pits and a man - made lake is developed in the Institute.

- Due to the greenery, lots of green waste and dry leaves are available. A Vermi compost pit is made to convert this waste into useful manure.

- Solar panels are installed in all the buildings of the institute. The power generated is fed to the grid.

○ # Training Summary

○ Executive Summary of Productivity

Sn	YEAR		2016	2017	2018	2019	2020	2021 (Upto Oct - 21)
1	Number of courses conducted / concluded	Gazetted	41	38	58	52	55	25
		Non - Gaz	92	79	106	85	91	84
		PSU	5	4	4	9	2	3
		Pvt.	0	0	0	0	0	0
		FN	0	0	0	0	0	0
	Total		138	121	168	146	148	112
2	Number of Personnel trained	Gazetted	591	458	516	643	988	567
		Non - Gaz	2740	2602	2758	2465	5480	5144
		PSU	38	129	84	393	44	90
		Pvt.	0	0	0	0	0	0
		FN	0	0	0	0	0	0
	Total		3369	3189	3358	3501	6517	5801
3	Earnings in Lakhs of ₹	PSU	113.31	50.53	80.65	732.44	109.84	140.05
		Pvt.	0	0	0	0	0	0
		FN	0	0	0	0	0	0
	Total		113.31	50.53	80.65	732.44	109.84	140.05
4	Refresher Training imparted							
	Signal	Trainees	581	581	724	695	1341	654
		Courses	12	9	13	13	20	10
	Telecom	Trainees	432	360	457	374	813	444
		Courses	9	9	13	13	19	11
5	Special Course on Safety	Trainees	120	76	71	60	58	0
		Courses	8	5	4	3	2	0
6	Trainee Days		75575	76315	73618	59739	82283	124882

○ Works

○ Details of Works Under Progress (PH-6500, SCR):

Sn	PB No. (21-22)	Name of the Work	Alloc	Sanc Cost (Cr.)
1	727 (2016-17)	IRISET- Augmentation of Training Facilities.	RRSK, DF-III	4.63
2	729 (2017-18)	IRISET- Upgradation of basic amenities to Supervisors Hostel-1 & Hostel-3, B-block.	RRSK	3.88
3	730 (2017-18)	IRISET- Provision of KYOSAN EI system & strengthening of FAT setup for various Electronic Interlocking systems.	RRSK	3.61
		Sub-Total (PH-6500 P.B.)		12.12

● Details of Works Under Progress (PH-6500, OSW-LSWP, SCR)

Sn	PB No. (21-22) (Sanc'n Year)	Name of the Work	Alloc	Sanc Cost (Cr.)
1	733 (2018-19)	IRISET- Enhancement of SDH and PDH equipment set up in the Transmission Lab.	RRSK	0.24
2	733 (2018-19)	IRISET- Improvements to Hostel rooms, toilets and mess at Hostel No. 2.	RRSK	0.45
		Sub-Total (PH-6500, OSW-LSWP, SCR)		0.69

● Details of Works Under Progress (PH-6400, OSW-LSWP, SCR)

Sn	PB No. (21-22) (Sanc'n Year)	Name of the Work	Alloc	Sanc Cost (Cr.)
1	722 (2015-16)	IRISET- Construction of Class Rooms on 2nd floor of newly constructed building opposite e-Learning Centre.	DF-III	1.92
		Sub-Total (PH-6500, OSW-LSWP, SCR)		1.92

● Details of Works under progress (PH: 6500 Trg/HRD)

Sub-Umbrella work of Western Railway- Augmentation of training facilities (for DG/NAIR for works of CTIs) (PB#1154/2018-19/NR):

Sn	PB No. (21-22)	Name of the Work	Alloc	Sanc Cost (Cr.)
1	UI PB 745 (PB 1154/ 2018-19/ NR)	IRISET- Strengthening of Electronic Interlocking and FAT setup.	RRSK	11.79
2	UI PB 745 (PB 1154/ 2018-19/ NR)	IRISET- Replacement of Supervisors Hostel No. 2.	RRSK	9.47
		Sub-Total of PH-6500 (Itemized Umbrella Works, CTIs).)		**21.26**

● Details of Works under progress (PH: 6500 Trg/HRD)

● Sub-Umbrella work of Western Railway- Augmentation of training facilities (for DG/NAIR for works of CTIs) (PB#1113/2019-20/NR):

Sn	PB No. (21-22)	Name of the Work	Alloc	Sanc Cost (Cr.)
1	UI PB 748 (PB 1113/ 2019-20/ NR)	IRISET– Upgradation to Administrative Building- Improvements to Corridors, Staircases, Doors, Windows, Wall Finishing, Railings and Roads.	DF-III	2.46
2	UI PB 748 (PB 1113/ 2019-20/ NR)	IRISET- Provision of Video Conferencing system and VOIP Exchange at IRISET for training as well as administrative use.	DF-III	1.67
3	UI PB 748 (PB 1113/ 2019-20/ NR)	IRISET- Upgradation to Hostel-4, Classrooms, Canteen, Suites in 'C' Block of Officers Hostel and Provision of Security Post in Hostels	DF-III	2.36
4	UI PB 748 (PB 1113/ 2019-20/ NR)	IRISET- Provision of Air Conditioners in 28 Rooms of Officers Hostel Along With Strengthening Of Power Supply Arrangements And Provision Of Lifts.	DF-III	1.97
5	UI PB 748 (PB 1113/	IRISET-Development of Conference room, Installation of Video Surveillance System	DF-III	2.49

	2019-20/ NR)	and Provision of webcasting at IRISET.		
6	UI PB 748 (PB 1113/ 2019-20/ NR)	IRISET- Improvements for all the classrooms along with 2-Studio classrooms for e-classes.	DF-III	2.45
7	UI PB 748 (PB 1113/ 2019-20/ NR)	IRISET- Providing OFC ring connectivity and improvements to LAN and Wi-Fi connectivity in Admin Building and Hostel 4.	DF-III	2.38
8	UI PB 748 (PB 1113/ 2019-20/ NR)	IRISET– Improvement in Laboratories, Development of Multimedia content and Providing UPS for Admin Building and all Hostels.	DF-III	2.46
Sub-Total of PH-6500 (Itemized Umbrella Works, CTIs)				18.25

- Details of New Works under Proposal in 2021-21 (PH: 6500 Trg/HRD)

- As Itemized Sub-Umbrella Work of Western Railway- Augmentation of training facilities (for DG/NAIR for works of CTIs) (PB 1113/2019-20/NR, Phase-1):

Sn	PB No. (21-22)	Name of the Work	Alloc	Sanc Cost (Cr.)
1	UI PB 748 (PB 1113/ 2019-20/ NR)	IRISET– Replacement of Hostel-1 by constructing two more additional floors to accommodate 100 trainees in the new Supervisors Hostel building.	DF-III	15.58
2	UI PB 748 (PB 1113/ 2019-20/ NR)	IRISET– Replacement of A-block of Hostel-4 by providing a new block to accommodate 30 Trainees (1/room) behind Hostel No. 2.	DF-III	11.65
3	UI PB 748 (PB 1113/ 2019-20/ NR)	IRISET- Upgradation to Hostel-4, Classrooms, Canteen, Suites in 'C' Block of Officers Hostel and Provision of Security Post in Hostels.	DF-III	2.49
4	UI PB 748 (PB 1113/ 2019-20/ NR)	IRISET- Setting up of Centre for Reliability Studies.	DF-III	0.65

5	UI PB 748 (PB 1113/ 2019-20/ NR)	IRISET- Setting up of Centre for Safety Critical Software.	DF-III	0.65
Sub-Total of Proposed PH-6500, Itemized Umbrella Works				31.02

- Details of New Works >2.5Cr Proposed in 2021-22 (PH: 6500 Trg/HRD)

As Sub-Umbrella work of NR Pink book/Item No. 1181/2020-21 (PB 1175 /2021-22)

Sn	PB No. (21-22)	Name of the Work	Alloc	Sanc Cost (Cr.)
1	US PB 1175 (PB 1181/ 2020-21/ NR)	IRISET- Capacity augmentation at IRISET for integrated skill development of S&T Officers and Supervisors over Indian Railways.	DF-III	30.86
2		IRISET- Replacement of old Mechanical Signaling system at Outdoor yards at IRISET with EI&CTC facility.	DF-III	25.18
Sub-Total of Proposed PH-6500, Itemized Umbrella Works				56.04