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# THE EDGE

THAT MAKES YOU  
INDUSTRY'S FIRST CHOICE

PROSPECTUS 2019

ONE YEAR POSTGRADUATE  
PROGRAM IN METRO &  
RAIL TECHNOLOGY





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# V I S I O N

To be a world-class, research based institution, responsible for creating and nurturing the next generation technology managers in the metro and rail sector.

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## What the future holds

Over 700 km of Metro in various stages of execution in India and an additional 7500 km planned in the 12th Plan.

## IMRT: Building skills for the Metro & Rail industry

Institute of Metro and Rail Technology (IMRT) is a first of its kind initiative in the country. It aims to establish a world-class knowledge based institute focusing on the Metro and Railway sectors.

IMRT was envisioned with the objective of providing training and professional development services through high quality courseware, innovative teaching methods, case

and problem based learning and experience sharing by national and international experts from metro and mainline railway sectors. IMRT will design training models and programs across different domains aimed at building capacities and professional competencies for working professionals and graduate engineers.

IMRT is an initiative of Balaji Railroad Systems Limited (BARSYL), an ISO 9000 Certified Company with 30 years of enriched experience with over 750 projects in more than 15 countries covering various services in different forms of Rail, including Freight, Passenger, Metro and Monorail systems.

IMRT has active associations and collaborations with reputed national and international organizations and academic institutions for education, research and training for metro and rail systems and technologies.





## Director's Speak

**We are at the threshold of a new transportation revolution and the Rail industry is at the forefront.**

However, one of the key challenges faced by most of the stakeholders in the rail and metro industry is the scarcity of professionally qualified engineers. The Post Graduate Program in Metro and Rail Technology was conceived as the answer to this challenge. Since 2011, when the Institute of Metro and Rail Technology was promoted, the institute has organised and successfully conducted various specialized training programs in railway and metro rail systems. This has given us an insight into the actual requirement of the industry, which otherwise would have been difficult to accurately assess.

Our findings and analysis led us to design the First Full Time One Year Post Graduate Program in Metro & Rail Technology, which aims to groom the next generation of engineers, capable of handling complex challenges in project management, systems assurance, interface etc. This will be spearheaded by our faculty, a team of veteran railway and metro rail professionals, who have taken great pains to put down a robust syllabus and develop learning materials right from scratch.


The general complaint against today's engineers is that they want spoon feeding. IMRT will aim to change this perception.

"Tell me and I forget. Teach Me and I Remember. Involve Me and I Learn." said Benjamin Franklin. This has been the guiding philosophy behind our program design process. The program design ensures that students get hands on experience by way of real life assignments, projects, etc. In addition to this, site visits to different construction, manufacturing sites will ensure exposure to industry practices.



Sunil Srivastava  
Founder Director, IMRT



A high-speed train, likely a Shinkansen, is shown from a front-facing perspective, moving rapidly along a track. The train is white with red accents and has a large, rounded nose. The background is heavily blurred, suggesting high speed, and the overall lighting is a warm, golden yellow, possibly from a setting or rising sun. The tracks lead towards the train, creating a sense of depth.

What the  
**industry**  
is saying of us

"I congratulate IMRT for taking this initiative of starting a Post Graduate Program in Metro & Rail Technology for first time in the country. I feel it is the need of the hour and I am confident that IMRT will become a world class institute."

**NVS Reddy , IRAS**  
Managing Director  
Hyderabad Metro Rail Ltd

"I am very pleased to be present at the launch of the PGPMRT. I believe it is really important to develop the link between academia and the industry. Industry cannot meet the needs and objectives of its projects without the right set of competencies. IMRT will surely bring the right kind of competencies at the right time to the industry"

**Emmanuel K uhn**  
Former MD  
Keolis Hyderabad MRT P Ltd

"It's a pleasure for me to welcome the first batch of PGPMRT. I am sure with the eminent teaching staff and their experience in various railway systems, IMRT is going to be one of the world class institutions in India"

**C Sankaralingam**  
VP and Head Task Force Leader  
L&T ECC Hyderabad Metro Rail Project

"It is a historic moment for the Metro Industry with the first batch of PGPMRT being kicked off in Hyderabad. I am sure with the robust and dynamic leadership of the IMRT Governing Council and the distinguished professionals associated, this institute will carve a niche in the annals of academic excellence"

**N K Kumar**  
CGM Chennai Metro Rail Ltd

"I am delighted to be present for the launch of the first ever Post Graduate Program in Metro and Rail Technology. India is at the cusp of transformation and I see a lot of opportunity for young engineers to be a part of this and build an excellent career"

**Bharat Salhotra**  
Managing Director  
Alstom Transportation India



What our  
**students**  
think of us





"I had, like many, chosen a beaten path right up to graduation. After joining IMRT, life seems to be on "fast track". What I learnt here is that there are so many different ways of learning. The learning environment at IMRT is its greatest strength. Core engineering apart, we get exposure to soft skills, creative thinking and public speaking. It is a great platform to catapult your career."

**Nitinraj S**  
RAMS Engineer, Cyient

"This is a great initiative! I am extremely happy about the fact that I get to work in a core engineering sector. IMRT has hand-picked faculty with hands-on knowledge in the Rail Industry. The course is intense, however, the institute handled the transition from engineering subjects to Metro Rail subjects well and we are now on our way to gaining expertise in this field."

**Ravi Teja M**  
Rolling Stock Engineer  
Hyundai Rottem

"Learn to make a difference" is one strong belief that IMRT goes by. When we started the course they said we would go on a journey of empowered learning, and they were right! When you are a part of the Infrastructure building of a country like India, merely getting subject knowledge is not enough. Group dynamics, Team work, people skills are an integral part of today's world. IMRT has structured in Leadership skills, Responsibility and Accountability in the curriculum."

**Armaan Motaria**  
Project Engineer  
Nippon Koei India

"At IMRT, teaching goes beyond the books. Classroom teaching is supported by assignments and the site visits. Learning by experience, by research, by writing reports and analyzing case studies not only helps us discover the subject, it also helps us go beyond our conventional styles of studying. Teachers at IMRT generate a sense of curiosity and interest in subjects and are genuinely interested in our success."

**Akhila C**  
Quality Engineer  
AECOM, Hyderabad  
Metro Rail Project

## One year can transform your career

The Postgraduate Program in Metro & Rail Technology (PGPMRT) at IMRT is a one-year intensive program to equip prospective technology managers and leaders with creative problem solving abilities to meet the unique challenges of the growing mass rapid transit market. The intensity of the program and its focus on Metros is designed to help students understand MRTs from a global technology perspective, along with an understanding of the social and economic impact of the Metros on the Indian society. The program has been carefully designed incorporating various teaching-learning models including focus on real life case studies, cutting-edge curriculum developed by industry professionals using effective delivery methods and hands-on learning.

With the main campus located in Hyderabad, along with four regional centers on the anvil, IMRT's Postgraduate Program in Metro & Rail Technology is designed based on the following building blocks:

- ◆ High quality courseware customized to individual customer requirements
- Innovative tools, techniques & methods to optimize teaching-learning process
- Latest training equipment and software like simulators, CBT etc.
- Well-qualified and trained professionals drawn from both domestic and international metro and rail sectors
- Collaboration with globally recognized organizations and universities for curriculum design and delivery

## Why PGP at IMRT?

The one-year program has been designed keeping in mind the growing interest of urban policy makers and government agencies in adopting modern Metro Rail Transit systems to address the transportation issues associated with a growing urban population across India.

The program structure is designed to educate and train engineers to grow into competent professionals who can plan, design, execute and operate metro systems by adhering to global standards and practices including environmental standards, safety norms and operational excellence. The PGPMRT is an incisive one-year program that has been designed to fulfill an important professional need – to train managers to quickly adapt to the industry working environment.

## A curriculum designed to help you excel

At IMRT, the focus is on three attributes of learning – Knowledge, Skills and Attitude. These three attributes are ingrained in all aspects of IMRT's initiatives, be it the curriculum, the teaching process or the industry interface. The core academic model revolves around three core principles: Mastering Fundamentals, Hands-on Learning and Solving Problems.

Significant emphasis is given to classroom learning through expert lecture sessions, discussions etc. At the same time, a lot of effort is put into ensuring learning beyond the classroom. This is achieved through industry assignments, real life case study discussions; technology enhanced learning, simulations etc. All of these elements form the Learning Framework, through which the overall vision of the institute is realized.



## The PGP course details

### Transportation Systems

- Urban Transport Planning
- Introduction to Metro and Railways
- Freight & Heavy Haul
- Introduction to High Speed Rail
- Monorail, LRT, APM Systems
- Maglev & Other Emerging Rail Technologies

### Infrastructure

- Railway Track, Alignment & Structure
- Metro Track, Alignment & Structures – I
- Metro Track, Alignment & Structures – II

### Railway Systems

- Railway Traction & Electrification
- Metro Traction Power & Electrification – I



### Operations & Management

- Train Operations & General Rules
- Metro Train Operations & General Rules
- Project & Interface Management
- Procurement & Contract Management
- Legal Issues & Funding for Rail Transit
- Transit Oriented Development

- Metro Traction Power & Electrification – II
- Signaling & Train Control for Railway
- Signaling & Train Control for Metro – I
- Signaling & Train Control for Metro – II
- Railway Telecommunications
- Metro Telecommunications – I

- Metro Telecommunications – II
- Rolling Stock Engineering
- Rolling Stock for Metro – I
- Rolling Stock for Metro – II

### **General Management**

- Creativity, Problem Solving & Innovation
- Work Place Communication
- Human Resource Management
- Financial Management
- Marketing Management
- Information & Systems Management

### **Dissertation, Assessments and Industrial Project**

- Seminars
- Industry interaction program
- Case study & analysis
- Projects & assignments (individual & group)
- Site Visits
- Term paper
- Final dissertation

### **Individual Project**

The Individual Project is perhaps the most critical component of the programme. It is an opportunity to fast track your entry into the industry and encourages you to work on real-world issues. The project allows you to take the initiative to combine your domain expertise and hands on experience on the field. This exposure gives a relevant perspective that can help shape your career.

### **Industry Learning Program**

The Industry Learning Program (ILP) encourages you to work with the railway/ metro/ allied industries on real-world situations. This gives you the chance to apply classroom learning to the outside world setting and gain new perspectives on industry and major global issues. ILP allows you to comprehensively understand the applications of various concepts learnt during the first three terms and gain relative expertise in your area(s) of interest. This is a group based activity where 4 – 6 participants are attached to a company on real assignments and to advice/ work on select issues or challenges.

### **Pedagogy**

A typical classroom at IMRT will comprise passionate engineers from across India. So participating in a classroom with individuals who possess technical skills across specializations, and being a part of a peer group with diverse backgrounds will only enrich your learning. Interaction with experts from around the world further adds to your learning experience at IMRT. The various methods of teaching-learning process include the following:

- Classroom lectures and notes
- Video lectures and video conference with international subject matter experts
- Guest lectures from national and international faculty
- Case study analysis
- Lab based simulations
- Group and individual assignments and presentations
- Project work, report preparation, paper presentations
- National/ international seminars and workshops



- Site visits to manufacturing locations, metro construction sites in India
- Overseas study tour

### **Assessment**

- Project work and reports
- Quizzes and assignments
- Term exams
- Final Exam – Objective and Descriptive (Online/off-line)

### **What do we look for in our students?**

Learning and Thinking; yes, all that we look for in the applicants is the willingness, enthusiasm and effort to think and learn. We will scrutinize and evaluate to filter and select those who show ample evidence of perseverance, motivation, focus, creative application, emotional toughness, grit & determination, and integrity. We sift through information provided by the applicants: the academic record, awards, distinctions, co/extra-curricular achievements, social & interpersonal skills, statement of purpose, personality traits, uniqueness, community development, clarity of thought and clear communication.

There is no stipulated minimum achievement in academic grades, GATE score, games & sports participation etc., for admission. Candidates showing promise of raising the standards of class room participation/ interaction, contribution to individual and group problem solving, evidence of overall strong academic, co & extra-curricular orientation, diverse thinking, enthusiasm to stretch oneself, higher resilience and collaborative leadership qualities will stand a better chance of selection. Our admission process is a selection process and not an elimination process. So, we strive to select those

with a better chance of going through the academic rigor; hard work, high propensity to seriously involve in thinking, learning and problem solving are prerequisites. If you can give us ample and valid reasons to select you, then most probably you will be selected!

The application form that you fill and submit is the main tool for our selection. Our admission committee will give each and every application form a thorough scrutiny to assess the overall potential of the applicant before offering admission to the PGPMRT program so that after one year, the candidate can make a real difference and impact in the Metro & Rail Industry in India and abroad.

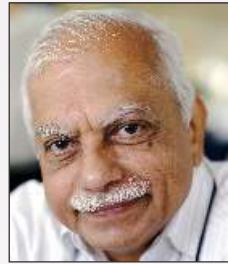
## The Faculty



**Dr. P Raja Goundan**  
Academic Director - IMRT

He holds a PhD in Electrical Engineering from IIT, Chennai. He leads the academic initiatives at IMRT and is responsible for the partnerships and academic associations of the institution. With over 35 years of experience globally, he is considered an authority in the Signaling and Telecommunication field and has an understanding encompassing all aspects of railway engineering and is an expert in signaling, electrification and railway telecommunication principles. He was the CEO of Integral Coach Factory, Chennai, and is currently the Joint Director of the Center for Wireless Technology (IIT Chennai). He also leads a research team of scientists working towards enabling India attain a leadership position in Wireless Technology, especially 4G.

He was deputed by the Government of India to implement several railway projects in Africa. As the Additional Member of Telecom at the Ministry of Railways, India, he was responsible for Strategic Management of Railway Telecom Network at an apex level, encompassing policy formulation and control of National Railway Telecom Network of 60,000 route kilometers for Train Traffic Control, management of large data networks and 20,000 route kilometers of MW Radio network and 20,000 route kilometers of Optical Fiber Network. He is also known for introducing modern electronics based Signaling in the Indian Railways.



**Mr. BSC Rao**  
Civil Structures  
and Metro Rail Systems

Mr. BSC Rao is a highly respected professional in Indian Rail & Metro sector. With over 35 years of professional experience encompassing technical, commercial, concessional, financial, legal and administrative aspects in the sector, Mr. Rao boasts of a highly decorated career. He was involved in Design, Construction Management of Metro Systems in Taipei and Singapore. More recently, He was on the Board of Namma Metro Bengaluru. Today, he is an advisor to many reputed organizations and visiting faculty to internationally acknowledged institute, CEPT University, Ahmedabad.



**Christopher Hyland**  
Project and Interface  
Management

He is a Mechanical Engineer from Adelaide University and has had an illustrious career in infrastructure and building projects for transportation, hotels, hospitals, and industrial facilities across Australia, Spain, Taiwan, Singapore, Thailand, Philippines, China, Vietnam, India, and Hong Kong. He has held major planning and design roles for Hong Kong MTRS and KCRC, Singapore LTA, Taiwan CKS MRT, Taiwan High Speed Rail Project, Thailand MRTA, and MRTs in India. He was also the MD of Parsons Brinckerhoff, India.





**MUM V araprasada Rao**  
Electrical Power Systems

After completing his M.Tech in Computer Science at IIT Kanpur, he has served the Indian Railways with distinction. Before becoming a consultant in Electrical Engineering to the Hyderabad Metro Rail Network, he was the Technical Director at ICOMM and a Chief Electrical Engineer with the Indian Railways. Among his several accomplishments, he commissioned the passenger reservation system at Secunderabad and introduced networking software in the passenger reservation system in railways.



**R Sriraman**  
Rolling Stock &  
Mechanical Systems

A Mechanical Engineer from the University of Madras, he has carved a niche for himself in the Rolling Stock and Mechanical Systems domain. His expertise include design, manufacture and inspection of various types of passenger coaches, diesel and electric multiple units, metro coaches and other self-propelled vehicles. He went on to become Joint Director of the RDSO and served the organization for nine years.

## IMRT's Guest faculty

### **Dr. Geoff Hunt**

Former Consultant, Delta Rail, UK

### **John Self**

Former General Manager,  
London Underground

### **Michael Schabas**

Director, First Class Partnerships Ltd, UK

### **Malcolm G Owens**

Project Director - Independent Consultant  
Engineer KVMRT (Metro Rail - Malaysia)

### **Mary Bonar**

Head Rail & Rail Finance, Stephenson  
Harwood International Law Firm

### **Sunil Jagdev**

RTA, Dubai

### **William Barter**

Former Consultant, Transport for  
London, Network Rail





## Learning from industry's best

IMRT brings together a faculty comprising some of the best minds in the industry of transportation. With a collective experience that spans across India and the world, you will be guided by experts who have redefined the industry bringing you their expertise and experience within your classrooms. The faculty at the institute is actively involved in transportation research, with each member involved as consultants to several projects across geographies. Interacting with such a group of visionaries will only set you off on a fulfilling career.

## World-class infrastructure

IMRT offers the best infrastructure to help you with your learning experience. Classrooms are equipped with modern teaching aids like two-way video-conferencing facilities and high-definition projectors. The entire campus is Wi-Fi enabled. Other learning aids include computer-based simulators, an exhaustive library with reports and case studies, and spaces for collaborative project work.

## Learning Model

"My teachers have the knowledge, experience, wisdom and the tricks of the trade. Their job is to feed all that to me in the classroom, and my job is to soak it up, and then reproduce it in my exams. If I can do that, I have learned what I need to know to complete my course and will be ready for a glamorous job in the metro/railway industry."

If you think like this, you should reconsider before applying to IMRT. When you go out into the big and unforgiving world for your job and a career, there are no teachers, lectures, homework, exams and pass marks. There are

only problems; usually poorly defined ones, and solutions that are acceptable or unacceptable or rather solutions that work or don't work. To make matters worse, you don't get partial credits or pass marks for solutions that don't work. And yet every day, hundreds of engineers, some of them brighter than you, struggle a lot, when they find that the real world is quite different from the class room. They have to learn from mistakes and progress slowly, whereas in IMRT, you will find the process very different.

The IMRT system and faculty provide you the conditions to inspire, involve and apply yourself to learn. The faculty's aim is to arouse the curiosity and desire in you to think, do and learn; not spoon-feed you with the information and share their knowledge for you to memorize. If you are successful in IMRT you will be successful in your professional and/or entrepreneurial career because you will be solving practical and hypothetical problems, individually and while working in groups.

## The learning style in IMRT involves:

High level of class room interaction, quizzes, and discussions

- Learning from live problem-solving, problem-solving and more problem-solving and situations throughout the course
- Focus on honing verbal, written, presentations, and communication skills
- Regular guest lecturers from the industry, site visits, workshops and conferences and participation in industry events continuous learning
- Research orientation – participation in independent and sponsored research programs

## Admissions Overview

The PGPMRT is designed for those who are keen on building their careers in the revolutionary sector of rail based transportation. The pre-requisites for admission to the programme are:

BE / B.Tech (Mechanical / Civil / Electronics & Communication / Electrical) from any recognized university in India or abroad.

### Admission Procedure

The admission to the PGP in Metro Rail Technology will be based on holistic and multiple selection parameters which include overall academic performance, written test and interview.

### How to apply?

Interested candidates please apply online at [imrtindia.edu.in](http://imrtindia.edu.in). The application fee is INR 1000 and has to be paid while submitting the application.

### Programme Fee

INR 6.00 Lakhs (including GST)

The fee does not include expenses towards:

- External Training with a leading metro
- Software Training
- Site Visits

These will constitute an extra expense, amounting to (approx) Rs. 60,000, and will be borne by the student.

## Scholarships and Student Loans

IMRT is committed to enlist the best qualified students. To facilitate this, the institute has tie-ups with leading banks/institutions to provide funding for the program. In addition, all students who secure admission are eligible to apply for the merit & need based scholarships, industry sponsorships, teaching assistantship and institute assisted fee waivers. Upto 80% of admitted students can get the assistance offered by these scholarships or grants. All those desirous of availing these are requested to apply in the first cycle as we will consider applicants on a first-come basis. Applicants are advised to check the date schedules and familiarize themselves with the deadlines and award dates.

### Guaranteed Placement

All students admitted to PGPMRT 2018, are guaranteed placement subject to the following:

- Obtain minimum prescribed attendance (85%).
- Satisfactory completion of course work.
- Satisfactory attendance in all site visits and completion of individual projects and assignments.
- Successful completion of final external evaluation.

On clearing the above you will be eligible.



For information on the course, fees,  
scholarship/funding, registration, admission  
process, scholarship/ sponsorship etc.

Log on to [imrtindia.edu.in](http://imrtindia.edu.in)

For more information, write to

[academy@imrtindia.edu.in](mailto:academy@imrtindia.edu.in)

or call 040-27903311





# INSTITUTE OF METRO AND RAIL TECHNOLOGY

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