

# SKILLING INDIA

## NATIONAL RAIL & TRANSPORTATION INSTITUTE



Ministry of Railways  
Government of India



National Rail and  
Transportation  
Institute

## Skilling India: National Rail & Transportation Institute (NRTI)

India's transportation infrastructure has changed significantly since the 1990s. Transport traffic is rapidly increasing with rail and roads continuing to be the dominant modes in India. It will continue to grow over the next five years to keep pace with rising traffic and in response to increase government investments in roadways and railways, and a more conducive business environment for public/private partnerships.

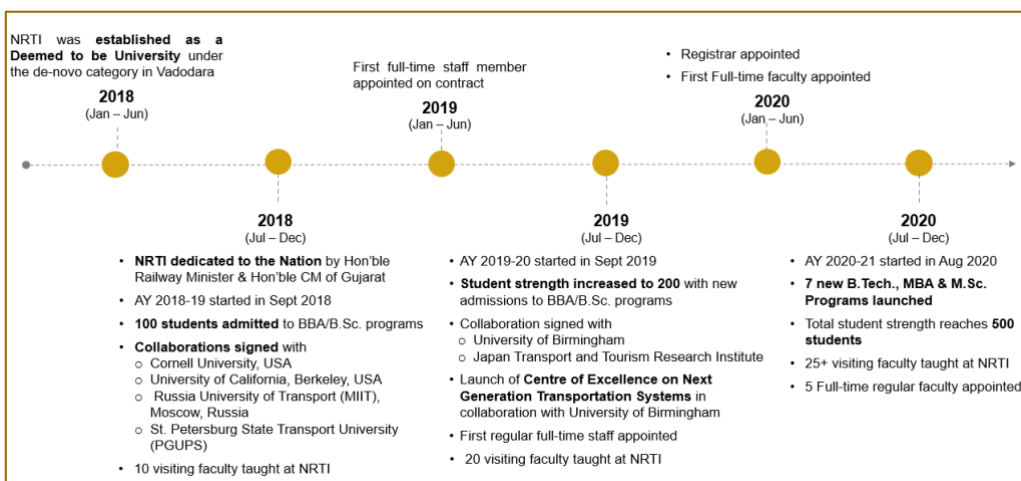
The share of transportation and logistics to GDP is forecast to increase from 5.8 percent in 2015 to 6.8 percent in 2025. Over the last couple of years, the railways sector has seen tremendous investments. In 2019-2020, around INR 1.48 Lakh Crores were spent mainly on improving infrastructure and the expected spend in 2020-2021 is around INR 1.61 Lakh Crores. Indian Railways (IR) has shown growth on multiple dimensions, such as infrastructure improvement, focus on customer service and the revival of freight business.

The National Skill Development Corporation's report on "Human Resource and Skill Requirements in the Transportation, Logistics, Warehousing and Packaging Sector—2022", indicates that India will need a workforce of around 2.51 Crores by 2022, a significant increase from 0.73 Crores in 2008. The sector is expected to witness one of the highest incremental human resource requirements across the 24 sectors that have been mapped.

### NEED FOR ESTABLISHING THE NATIONAL RAIL & TRANSPORTATION INSTITUTE

With the rapid growth of the transportation and logistics industry and the huge manpower that it supports, India urgently needs to develop and upgrade capabilities and talent in the area of infrastructure development, especially planning, project identification and development, efficient and transparent contract procurement, administration, and operation and management.

It was the vision of Hon'ble Prime Minister Modi to establish a dedicated specialised university focused on transport-related academics and research to support this unprecedented growth and to contribute to boosting the economy through skilling of manpower for the rail and transport



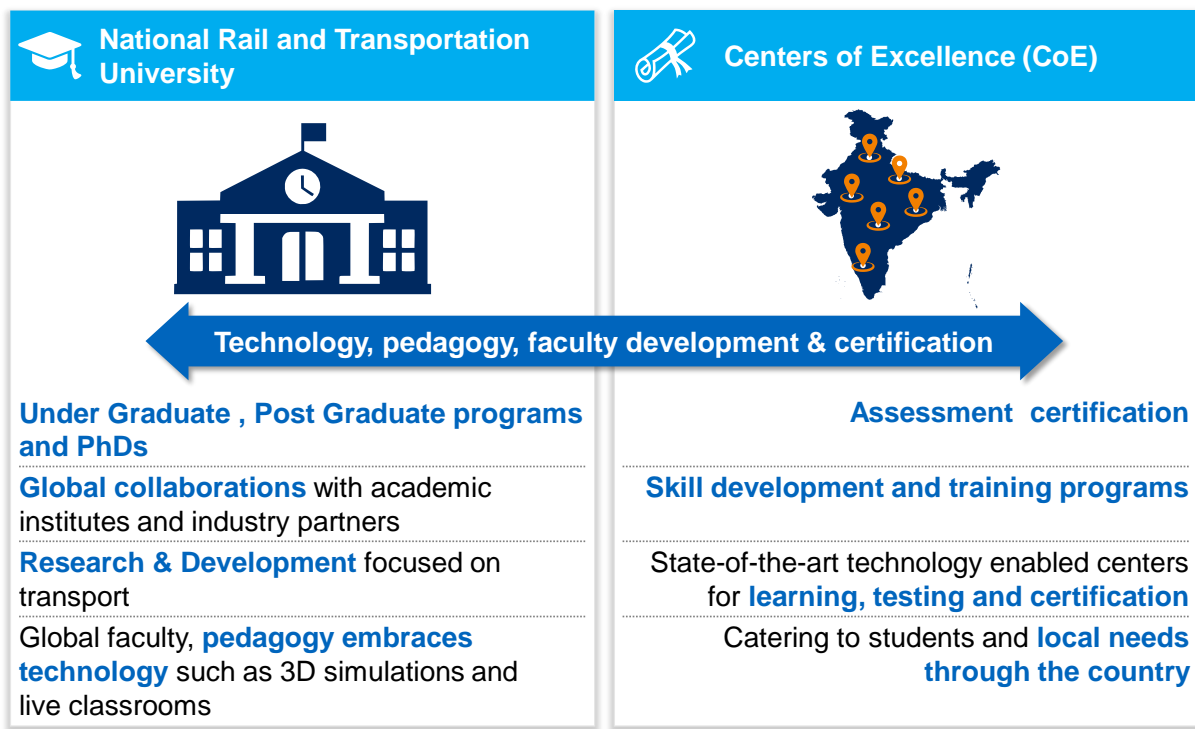
sector, fostering innovative entrepreneurship, generating large-scale employment opportunities and promoting efficiency in movement of people & goods. The Ministry of Railways

launched India's first transport focused university, the National Rail and Transportation Institute (NRTI), a deemed to be university, in 2018.

NRTI aims to help to attract fresh talent into rail and other transportation-related sectors, in addition to developing the capabilities of existing talent in Indian Railways and other organisations in the sector. In addition, it will facilitate the mastering of new skills in service operations, technology, data analytics etc. to meet the changing needs of the transport sector.

NRTI has a dual focus, one on higher education and other on skills training and capability building each delivered through a tailored model.

### Dual focus on higher education at University campus and Centers of Excellence at scale



### A BOLD VISION

NRTI is envisioned to be a top 10 university in India, ranked #1 in its domain. This is to be achieved with bringing in high-quality faculty, promoting targeted research to develop Indian solutions for the Indian sector, enabling in-person as well as digital delivery of programmes, leveraging public-private partnerships, and creating a Large scale platform for technical skill training and continuous learning.

In the next five years the Institute’s vision is to have a significant impact in strengthening of skills and capabilities in the sector by:

- Upgrading skills of more than 12 lakh employees of Indian Railways by delivering training to in critical areas of operations, safety and market orientation

- Extending capabilities of nearly 10,000 officers of Indian Railways to drive transformation helping run it as one integrated enterprise by building interdisciplinary skills, strengthening specialised capabilities and acquiring new age skills in emerging areas.
- Skilling and certification of 50,000 youth in vocational skills required for the sector to power its growth and professionalisation
- Contributing a cadre of 5,000 graduates from the University through its unique transportation focussed diploma and degree programmes to provide a backbone of professionals and future leaders for the sector



When we are moving towards the transformation of the Indian Railways, highly skilled specialist manpower and professionals are also very important. This is the motive behind the establishment of India's first Deemed Railway University in Vadodara.

*PM Narendra Modi*



## **CONTRIBUTING TO THE TRANSFORMATION OF INDIAN RAILWAYS**

NRTI is envisaged to act as the apex body to oversee training and development in Indian Railways, ensuring standardized quality of delivery, provide guidance and interventions in revamping existing training offerings, provide best-in class training programmes that are currently not being offered, and designing assessments and offering certifications under NRTI for Indian Railways courses.

### **Employee Training**

With a workforce of more than twelve lakh employees, Indian Railways conducts upwards of 1 crore man days of training annually. The transformation of Indian Railways has to be driven from within by upgrading the skills and capabilities of this talent pool through experiential training programmes, certifications, technology driven self-paced learning. This would also be extended to new entrants and private train operators which will depend on Indian Railways as a source of expertise.

The newly introduced as well as redesigned existing programmes will follow an experiential pedagogy, bringing in contemporary topics and frameworks. The programmes will be offered to the

---

staff by NRTI or Indian Railways depending on the category of training, and role and function of the staff:

- Induction - basic technical, operational and managerial capability program imparted to new joiners driven by NRTI through certification programs, mainly for Grade C & D staff
- Operational - capability programmes for running current operations (e.g. engine operations, track inspection, rail welding etc), usually will include both technical & non-technical trainings which are best delivered by Operational Staff/executives, largely delivered by Indian Railways
- Developmental - the "new" capability required for reengineering current operations and new emerging areas such as large data simulations, analytics, service excellence, imparted by NRTI

The training facilities of Indian Railways will be upgraded and extensively utilised, operating as a network of L&D centres for the purpose. One centre in every state and Union Territory will be made available to NRTI for extending its programmes to participants even beyond Indian Railways.

### Capability building for officers

In December 2019, the Union Cabinet approved the restructuring of Indian Railways, whereby its eight major cadres are being integrated into one single service, the IRMS with the objective to run the Indian Railways as one integrated enterprise.

This will ensure that the Organisation is managed and led by a group of employees that are all aligned in their capabilities as well as their mental models and mindset. The training and capability building engine at Indian Railways will need to be revamped to meet this new requirement.

The IRMS officers of the future will have to be equipped, akin to any top Indian or global corporate organisation, to manage *all* functions of Indian Railways over time.

NRTI has been given the responsibility to develop a comprehensive roadmap encapsulating a mix of inter-disciplinary skills, specialized courses and new age topics to enhance skills of IRMS officers across the newly defined functions: Infrastructure; Operations & Business development; Finance; and Rolling stock.

Medium and long term emerging areas like Renewable Energy Systems; Sustainable Energy Technology; SPV system design; Cold Chain Management; Transport Information Systems and Cyber Security; Mechatronics and Robotics; Digital systems innovation; BIM; PPPs in the transportation sector, Artificial intelligence applications, Design thinking etc. will be a focus of the new age programmes to be offered by NRTI.

These capability-building programmes will be supported by partnerships with high-quality institutions in India and overseas. For example, NRTI is collaborating with the Logistics Division, Ministry of Commerce and Industry, and the Task Force on Project & Program Management under the aegis of NITI Aayog to provide training on logistics, infrastructure and project management.

---

## SKILL & CAPABILITY DEVELOPMENT FOR THE SECTOR

### Skilling & Certification of youth

NRTI aims to help train 50,000 youths by 2024 for careers in the transportation sector. This involves building on the initiatives of Indian Railways to utilise the capacity of its workshops and production units as well as L&D centres envisaged in each state, partner with agencies for content & delivery under the NSDC skill framework, and enabling these units to achieve this goal.

NRTI will establish a Centre of excellence for youth skilling led by a Director which will work with a counterpart team at Indian Railways with relevant rail and transportation experience to set up and manage these training and certification in a collaborative model where the programmes will be identified and content creation will be managed by IR faculty, NRTI Board, other academicians, *taking reference from NSDC QPs*, with budgetary support from Indian Railways.

### Degree & Diploma programmes

NRTI has focused on offering world-class higher education bringing best-practices in curriculum and pedagogy, committed faculty and creating an environment where students acquire the latest concepts, in-depth knowledge and develop abilities to think critically, innovate and solve problems. Undergraduate and Masters programmes in Management, Engineering and Applied Science are already being offered with 500 students enrolled in nine programmes in Academic year 2020-21. These unique programmes cut across disciplines and offer students a holistic techno-commercial perspective of the transportation sector. NRTI's

#### NRTI's envisaged schools

- Management & Leadership
- Engineering & Applied Science
- Transport Planning & Design
- Humanities, Arts & Social Sciences
- Transport Policy & Law

#### Programmes offered by NRTI

1. BBA in Transportation Management
2. B.Sc. in Transportation Technology
3. B.Tech. in Rail Infrastructure Engineering
4. B.Tech. in Rail Systems & Communication Engineering
5. M.S. in Transportation Technology & Policy
6. M.S. in Transportation Information Systems & Analytics
7. MBA in Transportation Management
8. MBA in Supply Chain Management
9. M.S. in Railway Systems Engineering & Integration (Intl.

vision for higher education involves pursuing aggressive growth from the current student strength of 500 to reach 5,000 students in five years, offering a wide range of undergraduate and postgraduate degree and diploma programmes including PhD.

NRTI has built partner-ships with some of the leading global universities engaged in education & research in rail and transportation so far, such as Japan Transport and Tourism Research Institute, St Petersburg State Transport University, Russia University of Transport, University of Birmingham, Cornell University and the University of California, Berkeley. In India, partnership for offering joint programmes has been forged with IIT Kharagpur and others are in discussion.

## India's 1st Railway University! Piyush Goyal dedicates to nation unique Indian Railways institution; 10 facts

The National Rail and Transportation Institute (NRTI), deemed university in Vadodara, had opened its doors to the first batch of 103 students ...

Dec 15, 2018

options to help faculty orchestrate their classrooms more effectively and allow learners follow a more self-directed learning approach, ease the management of learning process and programmes through effective learning management systems, use of technology based tools to conduct assessments and provide certifications, and devise new age digital interventions for a state-of-the-art training ecosystem involving gamification, AR/VR and use of Apps and portal for delivering curated modules.

bility development at scale. It will be g with Technology enabled content er's needs, use of technology based

NRTI will continue to directly supports the vision and goals of Atmanirbhar Bharat. Currently, students have to go abroad for Master's and PhD degrees in transportation because such programmes are not available in India. Significant financial resources are also expended on executive education and training in universities abroad. Through its degree programmes, offering state-of-the-art executive education and initiatives for the development of Skilling and Digitising India, NRTI aims to go a long way in making India self-reliant in the transportation sector. Finally, and most importantly, NRTU will carry out valuable and critically-needed research and development to create innovative technologies that will drive local manufacturing and substitute the imports of expensive technology, equipment and products for the Indian Railways and the transportation sector in our country.

### CREATING IMPACT

**FINANCIAL EXPRESS**  
Read to Lead

#### Indian Railways takes huge step forward! Modi govt gives India its 1st rail university

By: [EE Online](#) | September 5, 2018 5:47 PM

PM Narendra Modi-led NDA government has gifted India its first railway university today! On September 5, to mark Teachers' Day, India's first railway university has been opened in Gujarat's Vadodara. The National Rail & Transport Institute (NRTI) was first announced in the Railway Budget 2014 and has since then faced several roadblocks. According to an IE report, work on the university gathered steam in the last one year, with the ministry claiming that files were cleared at record speed. To begin with, the railway university is part of the of the erstwhile Gaekwad estate which also houses the National Academy of Indian Railways.

#### Indian Railways Announces The Launch Of Joint Research Initiatives And Teaching Programmes With University Of Birmingham At National Rail Transportation Institute

By: [India Education Diary](#) | On: Feb 20, 2020

New Delhi: Chairman, Railway Board, Shri Vinod Kumar Yadav and Lord Karan Billimoria, Chancellor, University of Birmingham announced the launch of a Joint Masters programme in Railway Systems Engineering and Integration in academic year 2020-2021 by the National Rail Transportation Institute (NRTI). Shri Rajesh Tiwari, Member Traction and other senior officials of Railway Board along with Professor Sir David Eastwood, Vice-chancellor and faculty members of University of Birmingham were present on the occasion.

Financial Express

#### India's 1st Railway University! Piyush Goyal dedicates to nation unique Indian Railways institution; 10 facts

The National Rail and Transportation Institute (NRTI), deemed university in Vadodara, had opened its doors to the first batch of 103 students ...

Dec 15, 2018

EdexLive

#### National Rail and Transportation Institute launches seven new courses in applied core subjects

National Rail and Transportation Institute (NRTI), Vadodra has launched seven new programmes, two BTech UG programmes, two MBA and ...

Nov 12, 2020