



Faculty of Civil Engineering and Transportation
University of Isfahan

Introduction to Department of Railway Engineering and Transportation Planning

Established in 2008, the Department of Railway Engineering and Transportation Planning includes:

- 3 Associate Professors
- 7 Assistant Professors
- 4 Department Deputies (Education, Research, Culture, and International Affairs)
- 5 Laboratories
- 2 Majors in the BSc Programme
- 5 Majors in the MSc Programme
- 1 Major in the PhD Programme
- 881 Students and Graduates**



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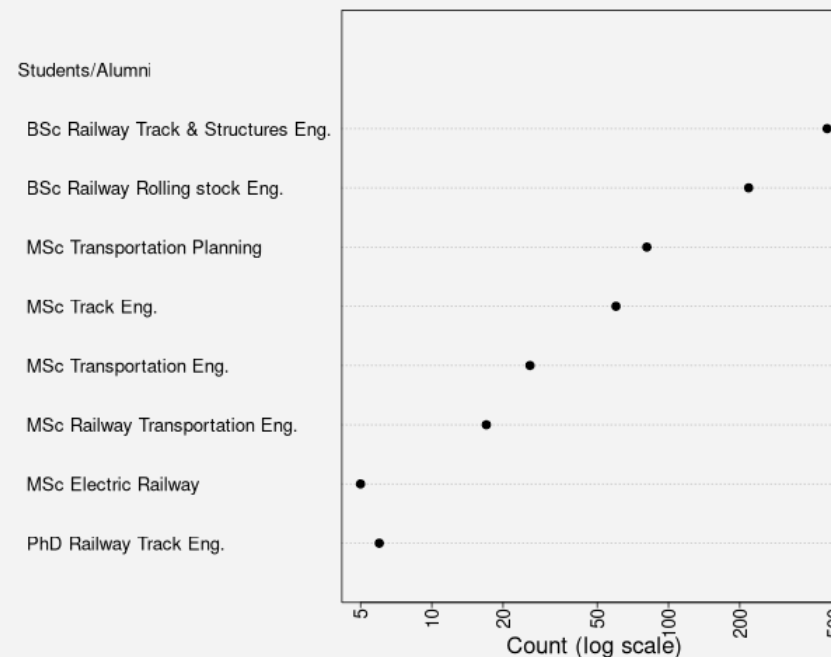
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Summary of Student Statistics

The numbers of current and graduated students, broken down by academic level and major, are shown in the following chart (as of March 2025).



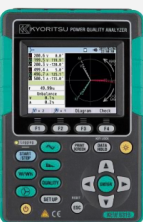
Research Areas

The research areas of the faculty members include:

- Analysis and Design of Rigid and Flexible Pavement
- Recycled Construction, Demolition Waste and Materials in Pavement
- Geometric design of roads and railways
- Polymer Modified Bitumen (PMB)
- Flexible Pavement (Analysis and Design)
- Pavement Management System (PMS)
- Sustainable Materials in Road Pavement
- Self-Healing in Pavement Layers



- Railway Intelligent Transportation System (RITS)
- Data Science (Data-Mining, Machine Learning, Neural Network)
- Network Modelling and Optimisation
- Railway Transportation Planning/Scheduling
- Multiple Criteria/Objective Decision Analysis Methods
- Project and Strategic Management
- Transportation Planning
- Railway Transportation
- Network Design Problems
- Disaster Response Routes
- Railway Capacity
- Railway Noise and Vibration
- Railway Track Maintenance Management Systems
- Metro Systems
- Analysis and Design of Ballasted and Slab-track Systems
- Optimisation of Railway Track
- Field Investigation on Dynamic Behaviour of Railway Substructure and Superstructure Systems
- Train-Track Interaction
- Dynamics of Railway Bridges
- Numerical Modelling
- Masonry Railway Arch Bridge Dynamic Behaviour
- New Methods of Underground Structures Construction (Metro Stations)
- Supply System of Electric Railway (AC and DC)
- Analysis of Overhead Contact Systems
- Control of Electrical Traction Motors Drives
- Linear Motors & MAGLEVs
- Power Electronics
- Propulsion System of Electric Trains
- Metro Rectifier Substations (RS)
- High Voltage Direct Current (HVDC) Systems



Field of Project	Project Title	Funder/Client
Metro and Railway	Field study of measurement of vibration of subway lines and vibration isolation of Khaneh Shahr building in Tehran, located in the northern area of Imam Khomeini Square	Civil Organization of Tehran Municipality
	Studying and evaluating the vibrations and sound reaching residential, commercial and historical buildings in the area of Tehran subway line 6 and providing corrective solutions if necessary	Tehran Urban Railway Company
	Performing engineering services in order to carry out preferential studies of rail vibration of Qom subway line A project	Qom Urban Railway Company
Safety and Traffic	Providing a safety proposal for the movement of pedestrians and disabled people on the level of Ahmedabad square and the streets connected to the square	Isfahan Municipality
Planning and Decision Making	Train scheduling under demand uncertainty	Isfahan Steel Company
Intelligent Transportation	Determining the optimal location of passenger stations and optimizing the route, the number and type of the commuter vehicles for the Isfahan Oil Refining Company	Isfahan Oil Refining Company
Road Pavement	Preparation of technical guidelines for the use of cold emulsion asphalt	Sang & Kooch Company
	Using bitumen modified with rubber powder in the black base layer	Zarin Bitumen Refinery
	Investigating the causes of sliding cracks in highways	Eskandeh Company
Metro and Electric Railway	Investigating the condition of Isfahan metro earthing and bonding system, extracting problems, and providing solutions for correction and improvement	Isfahan Regional Metro Compony
	Simulation of the 20kV power supply system in Isfahan metro line one	Isfahan Regional Metro Compony
	Optimal management and reduction of electricity consumption in urban electric rail transport networks using energy recycling	Center for International Scientific Studies & Collaborations (CISSC), Ministry of Science, Research, and Technology of Iran
New Methods of Design and Construction of Underground Structures and Subway Stations	Compilation of code and guidelines for the underground structures with top-down method	Ministry of Road & Urban Development
	Investigating the precast concrete column to beam connection based on coupling system	F.B.S Corporation
	Compilation of a guide for concrete reinforcing systems	Iranian Concrete Institute
Disaster Response Routes Network Design	Large scale disaster response routes network design	Tehran Disaster Mitigation and Management Organization
Railway Transportation and Railway Capacity	Railway capacity calculation and evaluation software using GIS	Islamic Republic of Iran Railways
Economics and Transportation Planning	Educating and consulting in applying data mining tools in transportation	Iran Ministry of Roads & Urban Development