Postgraduate Diploma

Railroad Infrastructure and Superstructure Technology

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Postgraduate Diploma
Railroad Infrastructure and Superstructure Technology

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/pk/engineering/postgraduate-diploma/postgraduate-diploma-railroad-infrastructure-superstructure-technology**

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01

Introduction

New high-speed passenger services, the decongestion of cities through new urban rail systems and the necessary transfer of goods from other modes of transport to rail, is creating a permanent evolution of this system. Therefore, knowing the basics of the electrical system of this type of transport is a requirement for many engineers in the railway field. This makes it essential to have specialized professionals in this area. That's why the Postgraduate Diploma in Railroad Infrastructure and Superstructure Technology is designed so that the student is able to start specializing in the new technologies that have an impact on this growing field.

Take advantage of a Postgraduate Diploma that will boost your professional career, making you more innovative in a highly-demanded sector in the field of engineering"

If there is one field in which the railroad has been a pioneer and a driving force in technology, it is that of electricity, which was applied very early on. Thus, while other modes of transport are trying to migrate to this "electric feature" at the moment, the railroad already did so at the end of the 19th century, which has allowed it to become one of the most efficient modes of transport.

In this way, this Postgraduate Diploma is presented to deal with the application of electric energy in the different serviced of railroads, analyzing its functional situation and the characteristics of the different elements that make up the electric traction system from a present-day perspective. It should be pointed out that the approach focuses on the electricity used for electric traction of trains, which is by far the main destination of the electricity consumed. One aspect of great interest is the detailed analysis of direct current and single-phase alternating current electrical systems independently and highlighting the particularities of each one of them.

On the other hand, it will aim to provide detailed knowledge on all aspects and components of the railway control, command and signaling technology (CCS), with an up-to-date view of all of them. Of special relevance is the in-depth study of the ERTMS and CBTC systems as the main references of modern signaling worldwide, which have become true standards in all metropolitan, urban and interurban rail networks. All the technical components that make up these systems and that ensure the maximum safety of train traffic are analyzed beforehand.

It is also important to mention the technical analysis that will address the different elements that make up purely railway telecommunications, highlighting the study of the GMS-R system as the main railroad standard at present, and its necessary migration to the new 5G standard. Likewise, the entire environment surrounding these telecommunication systems is analyzed, such as providing services to third parties and the control of the entire network.

The experience of the teaching staff in the field of railroads, in different areas and approaches such as administration, industry and the engineering company, has made it possible to develop this practical and complete content oriented to the new challenges and needs of the sector. Unlike other programs in the market, the approach is international and not only oriented to one type of country and/or system.

This **Postgraduate Diploma in Railroad Infrastructure and Superstructure Technology** contains the most complete and up-to-date program on the market. The most important features of the program include:

- Improve professional skills in the field of railroad systems
- Update and focus the student's company's strategies in these terms
- Demand new requirements in the technology acquisition processes
- Add value to the technical projects to be developed by student's companies and organizations
- The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where the self-assessment process can be carried out to improve learning
- Special emphasis on innovative methodologies
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection

Understand the analysis of the dynamics of a train itself with the infrastructure and the particularities of each of these structures"

Learn about the process of digital transformation and technology that has been developed in the railway sector in recent years following a program focused on engineering professionals"

Learn new concepts that support new disciplines of great importance within the railway field.

Boost your career with a complete program adapted to the international needs of the railway system.

The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive training programmed to train in real situations.

This program is designed around Problem Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Objectives

The design of this Postgraduate Diploma allows the student to update their knowledge in a highly demanded sector in the field of engineering. In this way, the key aspects have been developed in a curriculum that will boost the career of engineers from a global perspective, identifying the main technical aspects of railway telecommunications at the present time, also seeking to understand, in depth, the specific characteristics of signaling systems. As a result, students will develop their skills while aiming to achieve this eminently technological objective, gaining up-to-date knowledge of current trends in railroad systems. In view of the above, TECH establishes the following general and specific objectives to guarantee the satisfaction of the future graduate.

Analyze the characteristics that must be met by the engineering project associated with CCS installations and achieve your professional objectives with this Postgraduate Diploma"

General Objectives

- Gain in-depth knowledge of the different technical concepts of the railroad in its different fields
- Know the technological advances that the railroad sector is experiencing mainly due to the new digital revolution, but without forgetting the traditional approaches on which this mode of transport is based
- Understand the changes in the industry that have triggered the demand for new technical requirements
- Implement strategies based on the technological changes that have arisen in the sector
- Gain up-to-date knowledge in all aspects and trends of railroads

Head for academic excellence in the field of infrastructure technology by following case studies developed by experts"

Specific Objectives

Module 1. Electric Traction Energy

- Make an exhaustive analysis of the main technical aspects of electric traction energy in railroads, highlighting the most important milestones and their current situation
- Specify the technical characteristics of the installations associated with the electric traction energy according to the different railroad systems
- Gain a deeper understanding of the specific aspects related to the electric braking systems used on trains and their strategic importance for the railroad infrastructure
- Establish the technical characteristics of the different components that make up the railroad electrical system, including a detailed analysis of them
- Gain knowledge on the particularities of direct and alternating current electrification, emphasizing their operational advantages and disadvantages
- Analyze the characteristics that the engineering project associated with the traction electric power installations must have
- Direct the student in the practical application of the content presented

Module 2. Control, Command and Signaling (CCS)

- Explain in a clear and structured way the main technical aspects of the installations associated with railroad control, command and signaling
- Specify the technical characteristics of the different components that make up the CCS system
- Provide an in-depth breakdown of the specific characteristics of ERTMS and CBTC signaling systems, as the newest standardized systems in the current context

- Specify in detail the technical characteristics of the CCS installations according to the different railroad systems
- Analyze the characteristics that the engineering project associated with CCS installations must have
- Direct the student in the practical application of the content presented

Module 3. Telecommunications

- Identify the main technical aspects of the railroad telecommunications in the current moment
- Specify the technical characteristics of the different components that make up fixed railroad telecommunications
- Be able to delve into the technical characteristics of the various components that make up railroad mobile telecommunications, including future migration to the FRMCS standard
- Reflect on how telecommunications in the railroads is currently focused on a commercial business where third parties use the railroad's own infrastructure
- Analyze the characteristics that the engineering project associated with telecommunication installations must have
- Direct the student in the practical application of the content presented

Module 4. Civil Infrastructure

- Gain deeper understanding of the interaction of the vehicle with the civil infrastructure, analyzing in detail the dynamic phenomena that occur, in order to determine the design parameters of the platform and the rest of the components
- Specify the technical characteristics of the different components that make up the infrastructure subsystem, such as platform, tunnels, bridges and viaducts
- Specify the characteristics of the road as the main component of the civil infrastructure Take into account its traditional typology as a ballastless track, analyzing the different elements involved
- Establish the characteristics of the track devices, highlighting the turnouts, switches and crossings, as well as other auxiliary elements associated with the operation of the track
- Address the technical characteristics of the civil infrastructure according to the different railroad systems
- Integrate the concept of infrastructure resilience to external events, analyzing its current importance in the strategy of railroad infrastructure management companies
- Direct the student in the practical application of the content presented

03

Course Management

In our commitment to offer education for all, TECH works with renowned professionals in order for the student to acquire solid knowledge in the specialty Railroad Infrastructure and Superstructure Technology. For this reason, this Postgraduate Diploma has a highly qualified team with extensive experience in the sector, who will offer students the best possible resources in the development of their skills during the course. In this way, students have the guarantees they need to specialize at an international level in a booming sector that will catapult them to professional success.

Have the support of a highly-trained teaching staff from the field of railroads and take your career to the next level"

Management

Mr. Martínez Acevedo, José Conrado

- Experience in the public railroad sector, occupying various positions in construction, operation and technological development of the Spanish high-speed and conventional railroad networks
- Head of Research, Development and Innovation projects at Administrador de Infraestructuras Ferroviarias (Adif), a state-owned company attached to the Spanish Ministry of Transport, Mobility and Urban Agenda (MITMA)
- Coordinator of more than 90 technology projects and initiatives in all areas of the railroad
- Industrial Engineer and Master's Degree in Specialization in Railroad Technologies and in Construction and Maintenance of Railroad Infrastructures
- Professor in the Master's Degree courses on railroads at the Pontificia de Comillas University (ICAI) and the University of Cantabria
- Member of the IEEE (Institute of Electrical and Electronics Engineers) and member of the Editorial Committee of Electrification Magazine at the same institution (magazine specialized in transportation electrification)
- Member of the AENOR group CTN 166 "Research, Technological Development and Innovation Activities (R&D&I)"
- Adif representative in the MITMA R&D&I and EGNSS (Galileo) working groups
- Speaker at more than 40 congresses and seminars

Professors

Mr. Fernández Sánchez, Angel

- Control, Command and Signaling Technician at Administrador de Infraestructuras Ferroviarias (Adif), a state-owned company attached to the Spanish Ministry of Transport, Mobility and Urban Agenda (MITMA)
- Director of Control, Command and Signaling Projects, including: suppression of telephone blockades, installation of automatic banalized blockades, standardization and modernization of blockades and
  and modernization of interlocks and interlockings, and effects on the CCS subsystem derived from infrastructure projects
- Responsible for the analysis and study of blocking systems based on alternative technologies in Adif's Conventional Network. Case Study, Caceres-Valencia de Alcántara
- Industrial Engineer and Master's Degree in Engineering and Land Transportation Management

Mr. García Ruiz, Mariano

- Head of Telecommunications in the General Directorate of Conservation and Maintenance at Administrador de Infraestructuras Ferroviarias (Adif), a state-owned company attached to the Spanish Ministry of Transport, Mobility and Urban Agenda (MITMA)
- Experience in the railroad sector, having held various positions of responsibility in several projects and construction works of the Spanish high-speed rail network: GSM-R Mobile Telecommunications on the Madrid-Lleida, Córdoba-Málaga and Madrid-Valencia-Albacete-Alicante High Speed Lines; GSM-R Fixed and Mobile Telecommunications on the Madrid-Toledo and Madrid-Segovia-Valladolid High Speed Lines
- Responsible for Maintenance and Operation of the Fixed Telecommunications, GSM-R Mobile, Energy Remote Control and Public Mobile Telephone Operator facilities of the Spanish high-speed network
- Telecommunications Engineer and Master's Degree in Construction and Maintenance in Railroad Infrastructures

04

Structure and Content

The following syllabus meets the indispensable requirements in the area of Railroad Infrastructure and Superstructure Technology. In addition, it has the support of an experienced teaching team, resulting in a curriculum with all the necessary information to provide a broad overview of this area in engineering. For the student, this translates into an excellent opportunity to catapult their career to an international level, incorporating all the fields of work involved in the engineer's professional development in this type of work environment. From module 1, students will see their knowledge broadened, which will enable them to develop professionally, knowing that they can count on the support of a team of experts.

Gain in-depth knowledge of the interaction of the civil infrastructure with the different railroad systems in this program designed for experts"

Module 1. Electric Traction Energy

1.1. Electric Energy and Railroads
- 1.1.1. The Power Semiconductor
- 1.1.2. Electrical Voltage and Current on the Railroad
- 1.1.3. Overall Assessment of Railroad Electrification in the World

1.2. Relationship Between Rail Services and Electrification
- 1.2.1. Urban Services
- 1.2.2. Interurban Services
- 1.2.3. High-Speed Services

1.3. Electrification and Braking of the Train
- 1.3.1. Electric Brake Performance at the Traction Level
- 1.3.2. Electric Brake Performance at the Infrastructure Level
- 1.3.3. General Influence of the Electric Regenerative Brake

1.4. Electric Railroad System
- 1.4.1. Constituent Elements
- 1.4.2. Electrical Environment
- 1.4.3. TPS (Traction Power System)

1.5. TPS (Traction Power System)
- 1.5.1. Components
- 1.5.2. Types of TPS Depending on the Electrical Operating Frequency
- 1.5.3. SCADA

1.6 Traction Power Substation (TPSS)
- 1.6.1. Function
- 1.6.2. Types
- 1.6.3. Architecture and Components
- 1.6.4. Electrical Connections

1.7. Transmission Line
- 1.7.1. Function
- 1.7.2. Types
- 1.7.3. Architecture and Components
- 1.7.4. The Uptake of Electrical Energy by the Train
- 1.7.5. The Overhead Elastic Transmission Line (Catenary)
- 1.7.6. The Overhead Rigid Transmission Line

1.8. The Direct Current Railroad Electric System
- 1.8.1. Specific Particularities
- 1.8.2. Technical Parameters
- 1.8.3. Use

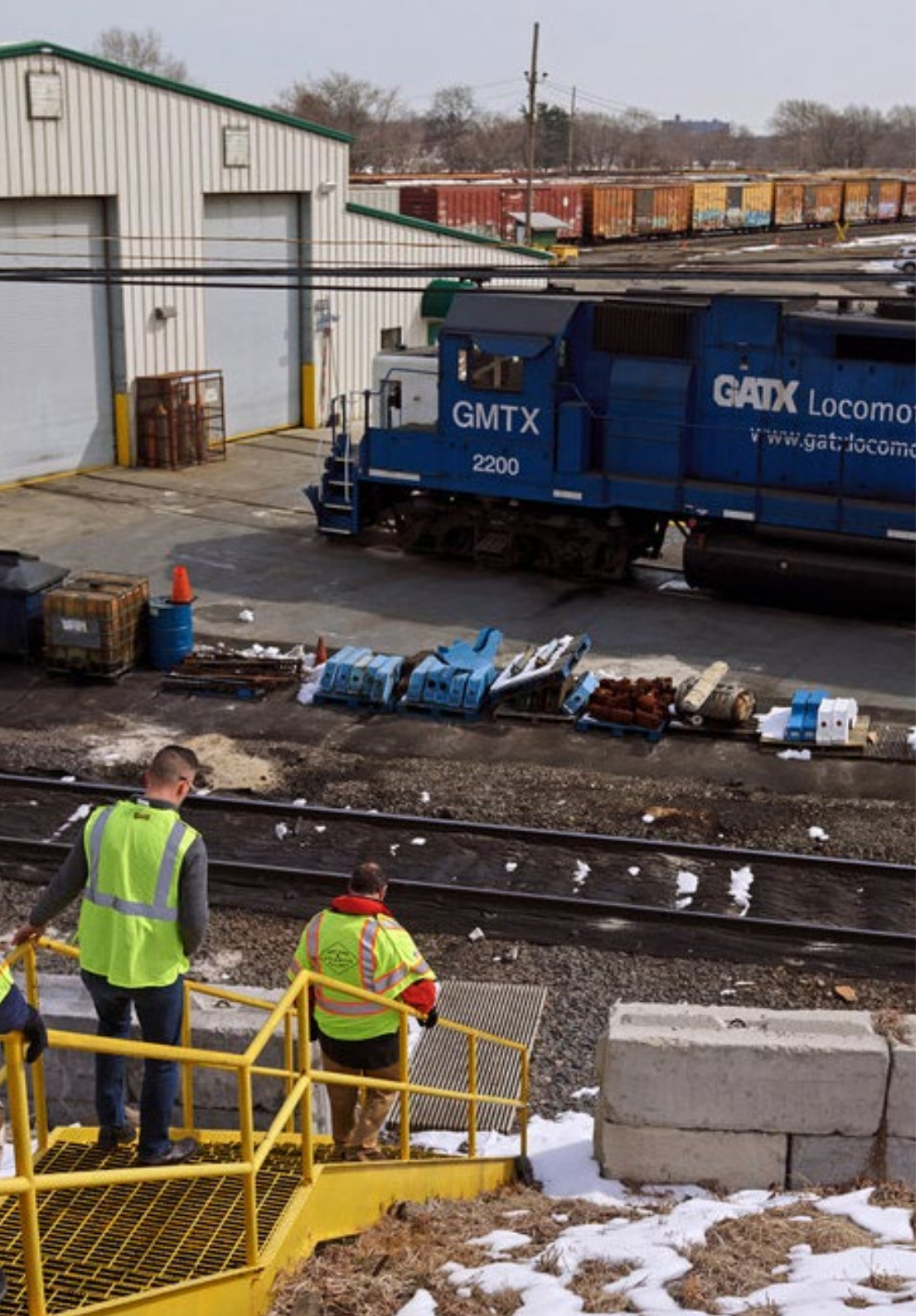
1.9. The Single-Phase Alternating Current Railroad Electric System
- 1.9.1. Specific Particularities
- 1.9.2. Technical Parameters
- 1.9.3. Disturbances and Main Solutions
- 1.9.4. Use

1.10. Engineering Project
- 1.10.1. Regulations
- 1.10.2. Index of the Project
- 1.10.3. Planning, Executing and Putting It Into Practice

Module 2. Control, Command and Signaling (CCS)

2.1. CCS and the Railroad
- 2.1.1. Evolution
- 2.1.2. Railroad Safety
- 2.1.3. The Importance of RAMS
- 2.1.4. Railroad Interoperability
- 2.1.5. Components of the CCS Subsystem

2.2. The Interlocking
- 2.2.1. Evolution
- 2.2.2. Principles of Use
- 2.2.3. Types
- 2.2.4. Other Elements
- 2.2.5. Program of Use
- 2.2.6. Future Developments



2.3. The Blockade
- 2.3.1. Evolution
- 2.3.2. Types
- 2.3.3. The Capacity of the Transport and the Blockade
- 2.3.4. Design Criteria
- 2.3.5. Communication of the Blockade
- 2.3.6. Specific Applications

2.4. Detection of the Train
- 2.4.1. Track Circuits
- 2.4.2. Axle Counters
- 2.4.3. Design Criteria
- 2.4.4. Other Technology

2.5. Elements of the Field
- 2.5.1. Track Apparatus
- 2.5.2. Signals
- 2.5.3. Level Crossing Protection Systems
- 2.5.4. Detectors to Support the Operation

2.6. Train Protection Systems
- 2.6.1. Evolution
- 2.6.2. Types
- 2.6.3. Onboard Systems
- 2.6.4. ATP
- 2.6.5. ATO
- 2.6.6. Design Criteria
- 2.6.7. Future Developments

2.7. The ERTMS System
- 2.7.1. Evolution
- 2.7.2. Regulations
- 2.7.3. Architecture and Components
- 2.7.4. Levels
- 2.7.5. Modes of Operation
- 2.7.6. Design Criteria

2.8. The CBTC System
- 2.8.1. Evolution
- 2.8.2. Regulations
- 2.8.3. Architecture and Components
- 2.8.5. Modes of Operation
- 2.8.6. Design Criteria

2.9. Relationship Between Rail Services and CCS
- 2.9.1. Urban Services
- 2.9.2. Interurban Services
- 2.9.3. High-Speed Services

2.10. Engineering Project
- 2.10.1. Regulations
- 2.10.2. Index of the Project
- 2.10.3. Planning, Executing and Putting It Into Practice

Module 3. Telecommunications

3.1. Railroad Telecommunications
- 3.1.1. Safety and Availability of Telecommunication Systems
- 3.1.2. Classification of the Railroad Telecommunications Systems
- 3.1.3. Convergence to IP Networks

3.2. Transmission of medium
- 3.2.1. Copper Cables
- 3.2.2. Radio Links
- 3.2.3. Optical Fiber

3.3. Transport and Access Networks
- 3.3.1. Digital Transmission
- 3.3.2. PDH Systems
- 3.3.3. SDH Systems
- 3.3.4. Evolution of the Systems

3.4. Voice Communication Systems
- 3.4.1. Traditional Telephone Operation
- 3.4.2. Switched Telephony
- 3.4.3. Voice Over IP
- 3.4.4. Voice Network Architecture
- 3.4.5. Numbered Plan

3.5. Networks of IP Data
- 3.5.1. Fundamentals. OSI Model
- 3.5.2. Packet-Switched Networks
- 3.5.3. Local Ethernet Networks
- 3.5.4. IP/MPLS Networks

3.6. Mobile Communications
- 3.6.1. Fundamentals of Mobile Communications
- 3.6.2. Train-Ground Analog
- 3.6.3. Wifi Systems
- 3.6.4. TETRA Systems

3.7. GSM-R Mobile Communications
- 3.7.1. Specific GSM-R Features vs. GSM (2G)
- 3.7.2. Architecture
- 3.7.3. Call Management
- 3.7.4. High Availability Network Design
- 3.7.5. ERTMS L2: GSM-R + ETCS L2
- 3.7.6. GSM-R Evolution Towards 5G (FRMCS)

3.8. Operation and Supervision of Telecommunication Networks
- 3.8.1. ISO TMNS Model
- 3.8.2. Standard Protocols and Proprietary Managers
- 3.8.3. Centralized Management Systems
- 3.8.4. Provision of Services

3.9. Telecommunications Services and Clients in the Railroad Environment
- 3.9.1. Railroad Services and Clients
- 3.9.2. Fixed Telecommunications
- 3.9.3. Mobile Telecommunications

3.10. Engineering Project
- 3.10.1. Regulations
- 3.10.2. Index of the Project
- 3.10.3. Planning, Executing and Putting It Into Practice

Module 4. Civil Infrastructure

4.1. Approximation of the Characteristics of the Railroad Civil Infrastructure
- 4.1.1. Interaction of the Infrastructure With a Vehicle
- 4.1.2. General Dynamic of the Railroad
- 4.1.3. Parameters of the Design of the Infrastructure

4.2. Railroad Platform
- 4.2.1. Constitution of the Platform
- 4.2.2. Typology
- 4.2.3. Railroad Bedding Layers

4.3. Bridges
- 4.3.1. Typology
- 4.3.2. Characteristics and Techniques
- 4.3.3. Interaction With the Vehicle

4.4. Tunnels
- 4.4.1. Typology
- 4.4.2. Characteristics and Techniques
- 4.4.3. Interaction With the Vehicle
- 4.4.4. Particularities in the Aerodynamic Field
- 4.4.5. Particularities in the Field of the Civil Protection and Safety

4.5. The Ballasted Track
- 4.5.1. Typology
- 4.5.2. The Running Rail
- 4.5.3. Other Components
- 4.5.4. The Flying-Ballast Phenomenon

4.6. The Ballastless Track
- 4.6.1. Typology
- 4.6.2. Components
- 4.6.3. Transition of Ballastless Track to a Ballasted Track

4.7. Track Apparatus
- 4.7.1. Typology
- 4.7.2. Diversions and Crossings
- 4.7.3. Expansion Equipment

4.8. Other Auxiliary Elements
- 4.8.1. Stops and Braking Zones
- 4.8.2. Multifunctional Barriers
- 4.8.3. Width Changers
- 4.8.4. Scales

4.9. Relationship Between Rail Services and Civil Infrastructure
- 4.9.1. Urban Services
- 4.9.2. Interurban Services
- 4.9.3. High-Speed Services

4.10. Resilience of Infrastructure Against Extreme Events
- 4.10.1. Meteorological Events
- 4.10.2. Sliding
- 4.10.3. Landslides

Achieve your professional goals knowing the main technical aspects of railroad telecommunications in the present-day world and position yourself as an international expert"

05

Methodology

This training program offers a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH we use the Case Method

Our program offers a revolutionary method of skills and knowledge development. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

At TECH, you will experience a way of learning that is shaking the foundations of traditional universities around the world"

We are the first online university to combine Harvard Business School case studies with a 100% online learning system based on repetition.

The student will learn, through collaborative activities and real cases, how to solve complex situations in real business environments.

A learning method that is different and innovative.

This intensive Engineering program at TECH Technological University prepares you to face all the challenges in this field, both nationally and internationally. We are committed to promoting your personal and professional growth, the best way to strive for success, that is why at TECH Technological University you will use Harvard case studies, with which we have a strategic agreement that allows us, to offer you material from the best university in the world.

> *Our program prepares you to face new challenges in uncertain environments and achieve success in your career"*

The case method is the most widely used learning system by the best faculties in the world. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

Relearning Methodology

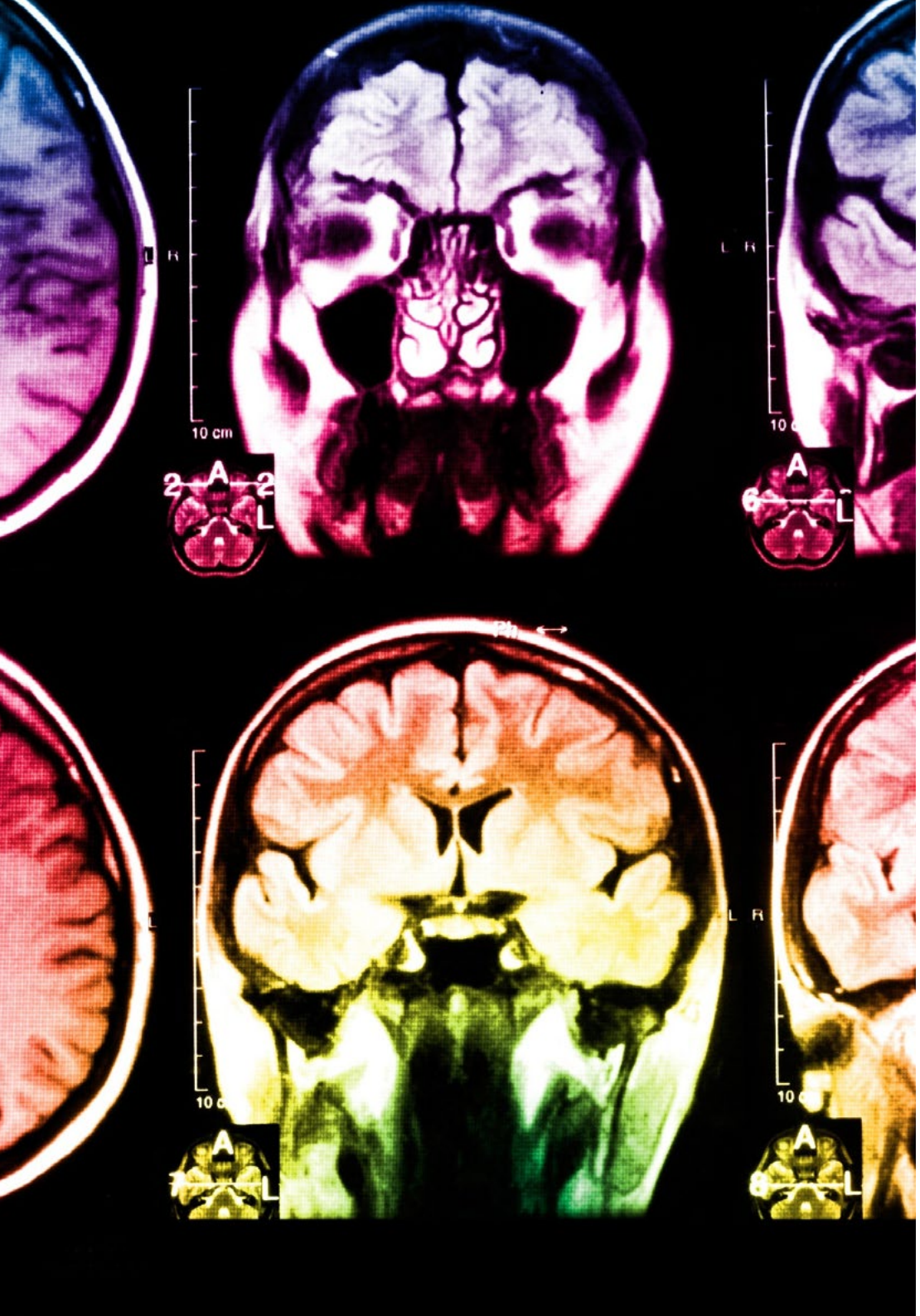
TECH is the first university in the world to combine Harvard University case studies with a 100% online learning system based on repetition, which combines 8 different didactic elements in each lesson.

We enhance Harvard case studies with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

At TECH, you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only university in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically. This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.

This program offers the best educational material, prepared with professionals in mind:

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.

Classes

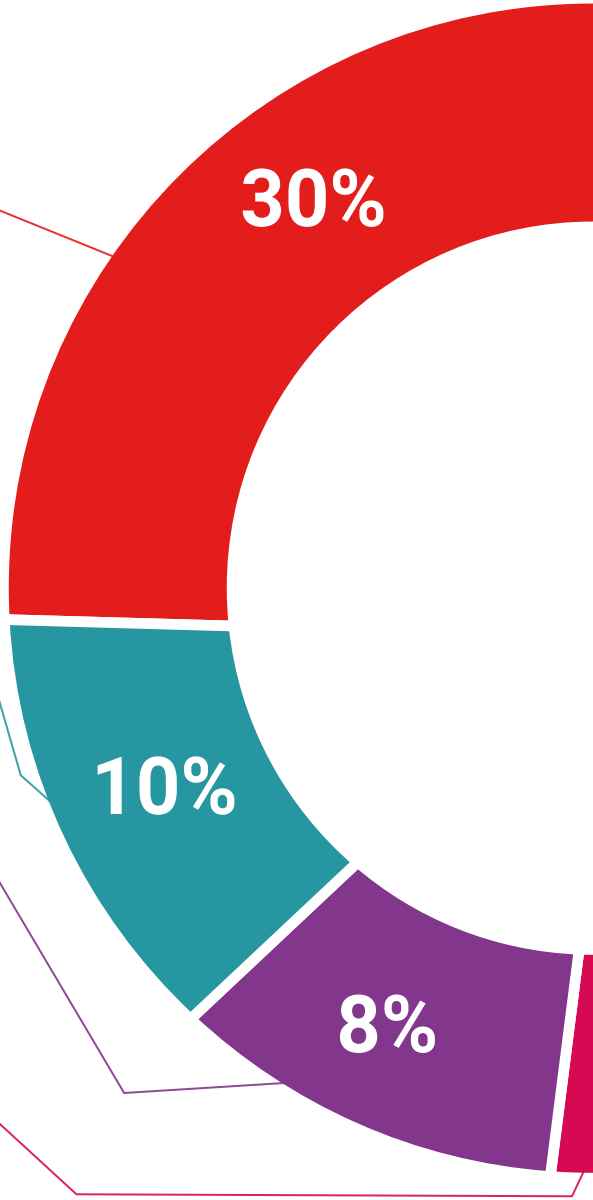
There is scientific evidence suggesting that observing third-party experts can be useful. Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

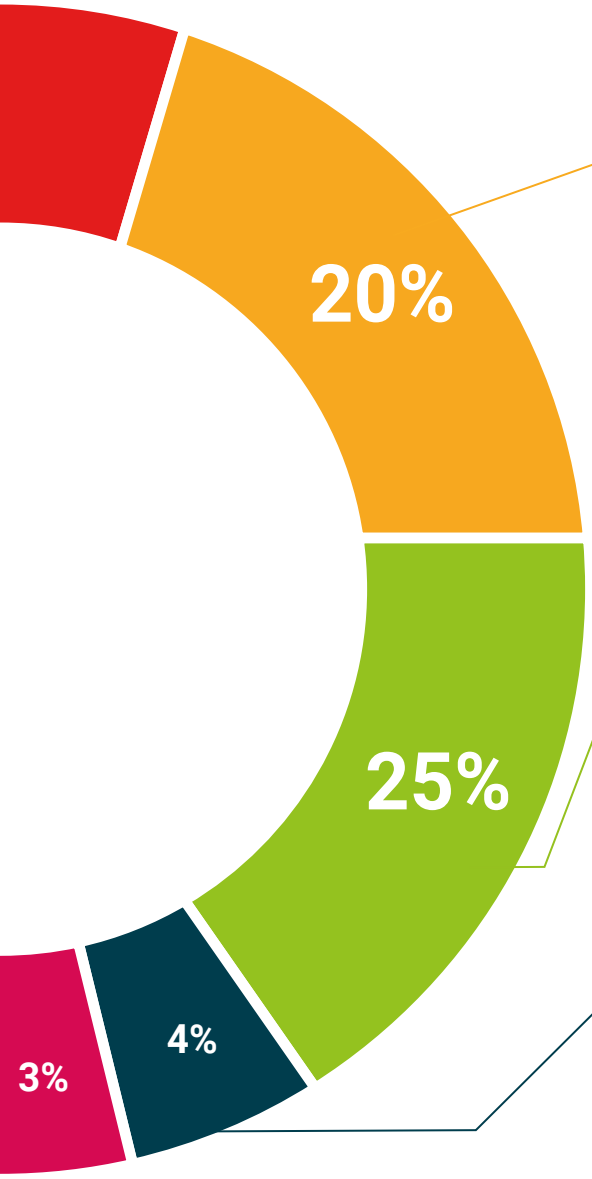
Practising Skills and Abilities

They will carry out activities to develop specific competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization we live in.

Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





Case Studies

They will complete a selection of the best case studies in the field used at Harvard. Cases that are presented, analyzed, and supervised by the best senior management specialists in the world.

Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive multimedia content presentation training Exclusive system was awarded by Microsoft as a "European Success Story".

Testing & Retesting

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises: so that they can see how they are achieving your goals.

06

Certificate

This Postgraduate Diploma in Railroad Infrastructure and Superstructure Technology guarantees you, in addition to the most rigorous and updated training, access to a Postgraduate Diploma issued by TECH Technological University

Successfully complete this training and receive your university degree without travel or laborious paperwork"

This **Professional Diploma in Railroad Infrastructure and Superstructure Technology** contains the most complete and updated program on the market.

After the student has passed the evaluations, they will receive their corresponding Postgraduate Diploma issued by **TECH Technological University** by tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Diploma in Railroad Infrastructure and Superstructure Technology**

Official Nº of hours: **600 h.**


tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Railroad Infrastructure and Superstructure Technology

This is a qualification awarded by this University, equivalent to 600 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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Postgraduate Diploma
Railroad Infrastructure and Superstructure Technology

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- Duration: **6 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Postgraduate Diploma

Railroad Infrastructure and Superstructure Technology

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