Master Degree

TRANSPORT SYSTEMS ENGINEERING

SAPIENZA
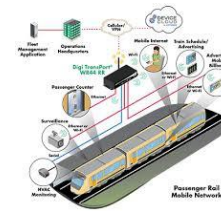UNIVERSITÀ DI ROMA

YOU ARE GOING TO STUDY …

How to:
- Plan
- Design
- Operate
- Monitor

What:
- Technologies
- Operational measures

On:
- Infrastructures (Railways, Roads, Sea, Air)
- Vehicles (Trains, Trams, Trucks, Buses, Cars, Motorbikes, Bicycles, Ships, Planes)
- Services (Passengers, Freight)

YOU ARE GOING TO ACQUIRE SKILLS ON TECHNIQUES, METHODS AND MODELS FOR …

- Transport and mobility planning
  - Technical and economic aspects at various levels
- Design, supervision and monitoring of transport systems
  - Dimensions and Performances of components
- Transport systems operations and management
  - Real time and operation planning
- Mobility of people and goods
  - Transport demand/supply on multi-modal networks
- Transport service planning and logistics organization
  - Production, distribution, stocking
- Economic and environmental assessment of transport systems
  - Investigations, measurements, experiments

ON INFRASTRUCTURES …

- Network planning
- Design
- Tests
- Operation
- Maintenance
- Scrapping

ON VEHICLES …

- Definition of functional requirements
- Design
- Homologation
- Operation
- Maintenance
- Scrapping

ON PASSENGERS SERVICES …

- Public transport networks
- Metro and tramways systems
- Intermodal nodes
- Local and High-speed rail systems
- Airlines
- Maritime RO-PAX and cruise lines

ON FREIGHT SERVICES …

- Local and urban distribution
- Combined transports
- Stocks and logistics
- Intermodal terminals
- Maritime lines
- Air cargo

IN ENGLISH BECAUSE …

We want to offer:

1) **To Italian students** a programme of studies and a degree of higher values in Italian and international job markets
   - <u>More job</u> options
   - <u>More qualified job</u> options

2) **To foreign students** the accessibility to a programme of studies and a degree at a prestigious University highly qualified in the transport engineering sector
   - Unique in Italy
   - Rare in other European countries

HOW THE STUDY PROGRAMME IS ORGANISED ...

120 ECTS

- 4 compulsory modules on characterizing disciplines (48 ECTS)
- 2 compulsory modules on integrative disciplines (12 ECTS)
- 4 optional modules on characterizing disciplines chosen by the student in a optional group (24 ECTS)
- 2 modules freely chosen by the student (12 ECTS)
- Other education activities proposed by the student in coherence with educational purposes of the Master Degree (3 ECTS)
- Thesis work (21 ECTS)

HOW TO BE ADMITTED …

Open for Students with Engineering Bachelor's Degree

Minimum curricular requirements for Italian BSC students
- 18 ECTS in MAT/03, MAT/05, MAT/06, MAT/07, MAT/08 or MAT/09;
- 12 ECTS in CHIM/03, CHIM/07, FIS/01, FIS/07, ING-IND/11 or ING-IND/21;
- 18 ECTS in ICAR/01, ICAR/02, ICAR/03, ICAR/04, ICAR/05, ICAR/06, ICAR/07, ICAR/08, ICAR/09, ICAR/10. ICAR/11, ICAR/17 or ICAR/20.

Possible admittance of students not completely meeting the requirements under knowledge integration

YOUR CYCLE OF STUDIES …

SEMESTER 1

Module	ECTS
Traffic Engineering and ITS (1/2)	6
Transport Networks and Vehicles	12
(*) Geolocation and Navigation	6
(*) Programming for Transport Systems	6

SEMESTER 2

Module	ECTS
Traffic Engineering and ITS (2/2)	6
Transport Modelling and Planning	12
(*) Air Transport	6
(*) Maritime Transport	6
(*) Road Safety	6
(*) Transport Infrastructures	6

SEMESTER 3

Module	ECTS
Railway Engineering	12
Urban and Regional Policy	6
(*) Freight Transport and Logistics	6

SEMESTER 4

Module	ECTS
Safety and Risk Analysis	6
(*) Maritime Constructions	6
(*) Public Transport Management	6
(*) Transport Policies	6

INTEGRATIVE ACTIVITIES

Module	ECTS
2 freely chosen modules, suggested among (*)	12
Other education activities proposed by the student	3
Master's thesis	21

(*) elective modules

AFTER THE MASTER DEGREE … OUTSIDE SAPIENZA …

First job within 6 months (historical data 2003-2019)

Placement

- Regular contacts with industries, operators, consultants, public agencies and administrations, research centres, other subjects interested to employ Transport Systems Engineers
- Active support from companies with hosted internships and funded scholarships
- Yearly dedicated *Open Day*

AITEC
research in the railway sector

AKKA Technologies
consultancy in the railway sector

Autorità di Regolazione dei Trasporti
transport regulation authority

BOMBARDIER
one of the leading companies in the transport industry

EMSA
European Maritime Safety Agency

FERROVIE DELLO STATO ITALIANE
the main Italian railway company

FlixBus
mobility provider for travelling across Europe

IDAL Group
developing maritime constructions

Ikos
consultancy in the railway sector

MOVESION
mobility management

PricewaterhouseCoopers
transportation and logistics consulting

PTV SISTeMA
spin-off of Sapienza, modeling and technological development of ITS

TEAM Engineering
transport design and consultancy

TECHNITAL
engineering services for major works and consultancy

AFTER THE MASTER DEGREE …
INSIDE SAPIENZA …

- **Post-Master Specialist Courses (1 year)**
  - Railway Infrastructures and Systems Engineering
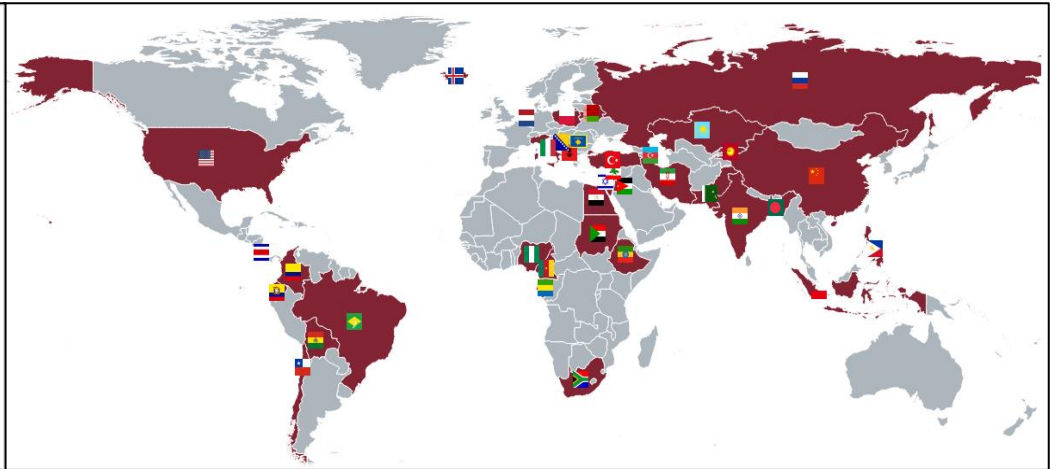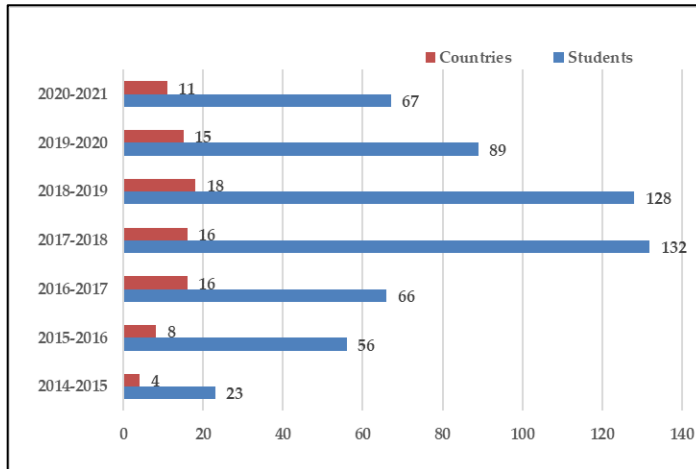

  - Airports Construction and Management

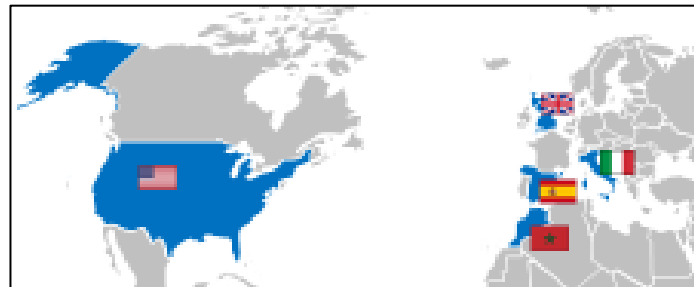- **PhD (3 years)**
  - Infrastructures and Transport

FEEDBACK FROM PREVIOUS ACADEMIC YEARS …

International students environment

International teachers environment

Minor linguistic problems
Opportunity to increase own English linguistic knowledge

TO KNOW AND UNDERSTAND MORE …

TRANSPORT ENGINEERING EDUCATION AREA

https://web.uniroma1.it/cdaingtrasporti//

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