University of Applied Sciences and Arts
of Southern Switzerland
SUPSI

MOBLAB
CENTER FOR SUSTAINABLE
MOBILITY AND RAILWAY

Railways and Sustainable Mobility

Master of Advanced Studies

Advanced Studies+
Continuing education

The understanding, the management, and the development of a sustainable mobility: a key factor for corporate and industrial success.

Transportation is becoming a multisector and interdisciplinary industry, with continuously new products and concepts coming to the market. New pioneering approaches are urgently required to tackle the challenges of the next decades.

Therefore, preparing the next generation mobility experts is becoming the central aspect for a flourishing economy.

The holders of a MAS in Railways and Sustainable Mobility are recognized specialists in this discipline. Thanks to the skills developed during the study, you will have a proven ability to master complexity and you are equipped with the fundamentals for further professional development.

With RSM you grow to new dimensions: not only a mobility manager, a mobility and technical leader!

RSM, exploring mobility.

Objectives

Students acquire the skills needed for careers in departments such as research and development, production, consultancy, and public institutions and are capable of taking responsibility to lead teams, to strategize concepts, and to manage complex interdisciplinary projects.

- Understand and apply the concepts of integrated mobility
- Acquire the latest skills and competencies in the mobility sector
- Immediately apply the new acquired competencies in the respective area
- Be familiar with the technical standards of railway and transportation system
- Understand, and apply the latest technologies applicable to the mobility sector

Prospects

The Master is devoted to managers and experienced employees from the railways and mobility sector as well as to people interested to work in this sector through the acquisition of the knowhow provided by this course.

Requirements

Bachelor Graduates from Engineering Programs, Management, or other Technical and Scientific faculties. Non-graduates Professionals and Manager from the fields Railways and Mobility with at least 3 years of experience. The Master is held in English (lessons and documentations) therefore basics command of English is required.

Languages

Lessons are usually held in English. In agreement with the whole class, certain lessons can be held in Italian, German or French.
The mini-theses for the respective CAS, as well as the final Master's thesis, can be written in English, Italian, German or French.

Admission steps

Online applications are accepted at any time.
A minimum number of applicants for each CAS (8-10 Students) is required. Four trial days free of charge are available for students to check a single CAS. If you wish to attend the course in another language, please mention it during registration. The Course could be held in another language if there were at least 8-10 participants.

Advisory Board

Martin Bütikofer (Swiss Museum of Transport)
Luca Diviani (SUPSI)
Felix Hauri (independent consultant)
Andrea Mazzone (Bombardier)
Filippo Tadini (FART)
Nicola Simionato (Google)
Simone Bernasconi (MobLab)

Faculty

Simone Bernasconi (MobLab) – Course Leader
Claudio Rolandi (SUPSI) – Course Responsible

Didactic credits

67 ECTS

Certificate

Master of Advanced Studies SUPSI in Railway and Sustainable Mobility.

Duration

24 months. Each CAS is composed by approximately 132 hours (mixed approach with traditional classroom lectures and distance learning), which accounts for 11 ECTS. For the MAS, at least 660 hours of lessons and approximately 300 hours for the Master Thesis.

Time

Lectures are scheduled on Wednesday (4 hours online), Friday and Saturday (8 hours).

Dates
The lectures schedule will be available onto the website rsm.moblab.swiss or on SUPSI website www.supsi.ch/fc.

Location
At the "Officine FFS" in Bellinzona (5 minutes walking from the station).

Tuition fees
Single CAS: CHF 6'100.–
Final project: CHF 1'000.–
Entire MAS: CHF 21'500.– (+1'000.–)

Discount available for groups of students coming from the same company. Special conditions for particular cases and talented students can be granted on a case by case evaluation.

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Carolina Ferrari-Rossini
Responsible
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Mobility Management
Mobility management in a wide context, the most relevant notions of the regulatory frame work, communication conveyance, information management, today's security challenges as well as capital investment, plus visibility achievement and promotion of your own services are going to be the academic subjects of this CAS in Mobility Management.

Modules:
- Regulations (Railway & PT)
- Regulations (Aviation)
- Strategy basics
- Asset management
- Information & communication
- Security & threats management
- Marketing, advertising & sales

Railway vehicles technology
Attendees are going to study railways engineering in a wide context and learn the most important concepts of vehicle design, traction and control. They will be able to understand and manage technical information, complex projects and understand how a railway vehicle is conceived, produced, tested and put into operation.

Modules:
- Introduction/basics of rolling stock
- Mechanical systems
- Brake system
- Wheelsets & bogie
- Electrical traction system
- Thermal traction system
- Vehicle control systems
- System integration
- Safety systems

Mobility advanced technologies

Students will learn about the latest trend technologies, how to innovate in a sustainable way, identify and adapt transportation systems to customer requirements and also about the ultimate travel possibilities (autonomous drive).

Modules:

- Innovation & entrepreneurship
- Innovation & creativity
- Integrated mobility
- Future technologies
- Autonomous train
- Autonomous drive

Integrated technology

Participants will learn about the latest technologies, how to prepare a maintenance plan, how to design a production process and implement it, how important is safety and use the required tools.

Modules:

- Planning & processes
- Maintenance system
- Maintenance aircraft system
- Safety management

Operation management

The student will learn about the possible interconnection of different transport systems, how to efficiently design a public transportation system, how to calculate footprint emission of a system, about freight cooperation and interaction between road and rail and much more.

Modules:

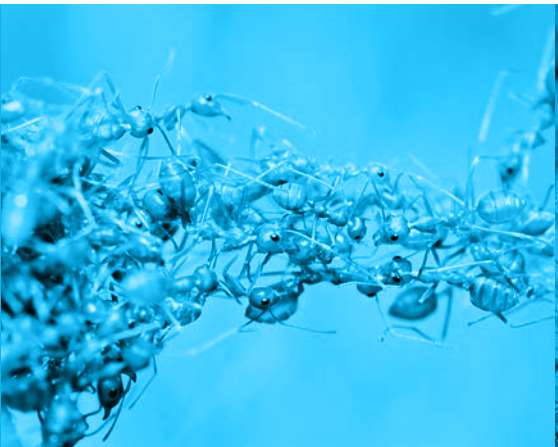
- Transportations models
- Rail passenger transport & public transportation
- Freight & intermodal transportation
- Capacity analysis & operation management
- Environmental impacts of transportation systems

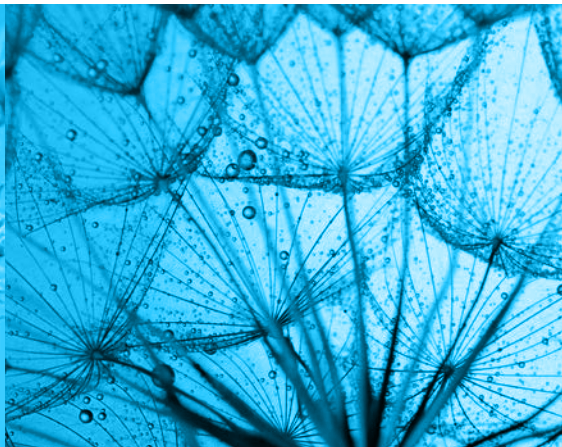
Infrastructure & controls

You are going to learn the most important concepts of infrastructure designs, safety and security control systems and be the first to have used the Gotthard Base Tunnel as educational tool. You will be able to understand and manage technical information, complex projects and you will understand how an infrastructure project is conceived, designed, developed, tested, and put into operation.

Modules:

- Introduction to infrastructure
- Maintenance & optimization
- The St. Gotthard base tunnel
- The Ceneri base tunnel
- Traffic control systems





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