



# Intelligent Transport Systems

a master's degree study program

Intelligent Transport Systems (ITS) is a quickly evolving area facing a lack of qualified professionals.

## Why are these systems important?

The ITS program integrates information and telecommunication technologies with transport engineering in order to achieve:

- better transport systems efficiency
- lower travel times
- higher safety and security
- reduction of environmental impacts
- increase in passenger comfort



**Graduates acquire** transport-technical knowledge, a detailed understanding of intelligent transport systems, their components, upcoming development in the field and also practical knowledge of the design, control and evaluation of these systems.

Part of the education is work on scientific projects and in the laboratories – e.g. Laboratory of traffic control and modelling, Laboratory of system reliability, Driving simulation research group or Laboratory for electronic identification systems and communication (e-ident).

## Graduates can find employment as:

- designers of complex transport systems
- transport specialists in both the private and public sector
- transport supervisors for complex city systems, tunnel control systems, etc.
- specialists in design of in-vehicle ITS components
- managers of large transport projects

The Intelligent Transport Systems study program is offered by the **Department of Control and Telematics** which is performing science, research and education activities in the following main areas:

- traffic control
- human factors in transportation
- identification and navigation systems
- safety and reliability of telematics systems and equipment
- theoretical telematics



## Study curriculum of the Intelligent Transport System Master's degree program

	Mathematics & Physics	Informatics	Technical	Economical & Environmental	Transportation	Special ITS	Languages & Facultative	Projects
semester <b>1<sup>st</sup></b>	ITS Mathematical Tools Theoretical Physics at Transportation	System Engineering	Control System Theory	Economy and Management of ITS Projects	Traffic Flow Theory Analysis and Prevention of Traffic Accidents	Telematic Systems and Services Systems Analysis and Design of ITS	Language	Master Project
semester <b>2<sup>nd</sup></b>	Signals and Codes Pattern Recognition	Tutorial in Informatics	Technological Aspects of Quality	Energy Analysis of Land Carriage	Traffic Simulation	Telecommunications in ITS Identification Systems Localization and Navigation Systems	Language Compulsorily Facultative Course	Master Project
semester <b>3<sup>th</sup></b>	Stochastic Models and their Applications Data Processing	Information Security Geographical Information Systems	Special Materials and Technology ( <i>facultative</i> )	ITS Effectiveness Assessment ( <i>facultative</i> )	Safety and Reliability in Transportation Road Safety Audit	Railway Interlocking Systems ( <i>facultative</i> ) Vehicle Control Systems ( <i>facultative</i> ) Advanced Telematic Applications ( <i>facultative</i> ) Safety Critical Applications in Transport ( <i>facultative</i> ) Modelling of "Human - Machine" Interface	Language Compulsorily Facultative Course	Master Project
semester <b>4<sup>th</sup></b>	Mathematical Models in the Economy Numerical Modelling	Artificial Intelligence and Expert Systems in Transport Applied Informatics	Risk Analysis and Management ( <i>facultative</i> )	Transport and Environment	Transport Infrastructure Administration	Designing of Advanced ITS Systems and Services Intelligent Vehicle and Safety ( <i>facultative</i> )	Language	Master Project

Intelligent Transport Systems study program is offered either as a single degree program at the Czech Technical University in Prague or as a multiple degree program combined with partner universities in Vienna, Austria and Linköping, Sweden.



**The Department of Control and Telematics** carries out its research activities with wide scientific and international cooperation. It cooperates with several industry partners e.g. in testing in-car telematics units and services, with research institutions (e.g. the Academy of Sciences of the Czech Republic), and with other European universities specializing in intelligent transport systems. It is also a member of the association ITS-EduNet, consisting of universities and organizations from Germany, Austria, Sweden, Great Britain, Italy, Slovenia, etc. The Department's personnel deals with many ITS research projects, both on European and national level.



**The Faculty of Transportation Sciences** is a leading transport-oriented faculty in the Czech Republic and is a part of the Czech Technical University in Prague, which has more than 300 years of history. Over 1,500 students in several specialized bachelor's, master's and Ph.D. programs benefit from project-oriented studies which, among other things, enables team work on transport projects under the supervision of experienced specialists.