Institute of land and sea transport systems (ILS)

ILS is one of seven Institutes at Faculty V, Mechanical Engineering and Transport Systems, Technische Universität Berlin

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Design and operation of maritime systems
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Dynamics of maritime systems
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Research field ocean engineering
em. Prof. Dr.-Ing. Günter Claus
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www.dms.tu-berlin.de/reina/bereich_AV/maritechnik
claus@maritechnik.de

• Intermodal analysis of transport systems
• Interdisciplinary workgroups
• Scientific methods
• Project management / team building

Naval Architecture and Ocean Engineering

• Ship design / design of water vehicles: integrated design / system design, design methodology, simulation driven design
• Underwater / deep sea technology
• Offshore wind installation, operation
• Maritime economy
• Life cycle cost
• Accommodation and outfitting: accommodation layout and design, comfort criteria, technical ship operation
• Safety and security on board and at harbor
• Construction and acoustics / acoustical assessment
• Maritime transport: sea trade / cargo flow, maritime transport systems / transport chains, commercial ship operation

Prof. Dr.-Ing. Gerd Holbach

• Ship resistance and propulsion
• Measures to increase efficiency
• Seakeeping
• Prediction of maneuverability
• Propeller and cavitation
• Numerical flow simulation (CFD)
• Development of numerical methods
• Auto- and hydrodynamics of sailing yachts
• Stability of planning boats
• Ship model tests in towing tank, cavitation tanks and seakeeping basin

Prof. Dr.-Ing. Andrés Cura Hochbaum

• Wave generation
• Wave prediction
• Wave structure interaction
• Oil recovery vessels
• Multi-body hydrodynamics
• Offshore energy
• Model tests in ocean engineering
Transport Planning and Technology of Transport Systems

Planning and operation of roads

Prof. Dr.-Ing. Thomas Richter
Sekr. TIB 3/2-3, Geb. TIB 25.1
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13355 Berlin
Tel.: +49 30 314-23308, Fax: -26269
www.strassenplanung.tu-berlin.de
sekretariat@kfh.tu-berlin.de

- Planning and design of all components of road transport (individual motorized transport, public transport, cycling, walking)
- Design of road systems within and outside built-up areas
- Operation of traffic systems (traffic lights, traffic management)
- Urban and conceptual traffic planning

Track and railway operations

Prof. Dr.-Ing. habil. Jürgen Siegmund
Sekr. SG 18, Geb. SG 12
Salzufer 17-19
10587 Berlin
Tel.: +49 30 314-23314, Fax: -29530
www.railsways.tu-berlin.de
info@railsways.tu-berlin.de

- Railway operations laboratory: simulation and analysis of operation procedures and control and safety systems
- Strategies to reduce the energy consumption
- Optimization of mobility and transport procedures

Transport systems planning and transport telematics

Prof. Dr. Kai Nagel
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10587 Berlin
Tel.: +49 30 314-23308, Fax: -26289
www.vsp.tu-berlin.de
sekretariat@vsp.tu-berlin.de

- Multi-modal modeling and simulation of traffic
- Analysis of transport policies and innovative mobility concepts
- Algorithms and methods in transport informatics and telematics

Integrated transport planning

Prof. Dr.-Ing. Christine Abread / Prof. Dr. Oliver Schwedes
Sekr. SG 4, Geb. SG 4.1
Salzufer 17-19
10587 Berlin
Tel.: +49 30 314-25145, Fax: -27875
www.vsp.tu-berlin.de
sekretariat@vsp.tu-berlin.de

- Investigation of interdependencies between traffic, regional structure, environment, technology, economics, politics and society
- Research focus: transport and mobility in international context, transport policies, mobility research with quantitative and qualitative methods, futures studies, design and evaluation of transport measures

Commercial transport

Prof. Dr. rer. pol. Gerold Liedtke
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10587 Berlin
Tel.: +49 30 314-23308, Fax: -26289
www.ivp.tu-berlin.de
liedtke@ivp.tu-berlin.de

- Multi-agent simulation of freight transport demand: production systems, trade, logistics and transport chains, tours
- Economic behavior models of logistics decisions
- Bounded rationality optimization in vehicle routing
- Economic assessment of freight transport demand: production systems, trade, logistics and transport chains, tours
- Freight transport planning and innovations in logistics

Automotive engineering and Internal Combustion Engines

Automotive engineering

Prof. Dr.-Ing. Sotfue Müller
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Gustav-Mayer-Allee 25
13355 Berlin
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www.ktf.tu-berlin.de
info@ktf.tu-berlin.de

- Vehicle safety
- Accident research
- Passive and integral safety
- Active safety
- Vehicle efficiency
- Energy management
- Light weight design
- Driving experience

Internal combustion engines

Prof. Dr.-Ing. Roland Baar
Sekr. CAR-B1
Carltonstr. 1A
10587 Berlin
Tel.: +49 30 314-26946, Fax: -26105
www.vkm.tu-berlin.de
vkm@tu-berlin.de

- Concepts of modern combustion engines and exhaust systems regarding optimization of efficiency, emissions, drivability in real cycles
- Thermodynamic and fluid dynamic investigations in experiment and simulation
- Engine process

Naturalistic driving observation for energetic optimization and accident avoidance

Prof. Dr. rer. nat. Stefanie Marker
Sekr. TIB 13, Geb. TIB 13
Gustav-Mayer-Allee 25
13355 Berlin
Tel.: +49 30 314-72970, Fax: -72505
www.fvb.tu-berlin.de
info@fvb.tu-berlin.de

- Energetic optimization and use pattern of alternative drive trains
- Power train simulation
- Individual driver behavior

Rail vehicles

Prof. Dr.-Ing. Markus Hecht
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10587 Berlin
Tel.: +49 30 314-235195, Fax: -23529
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markus.hecht@tu-berlin.de

- Vehicle running gear: multi-body simulation, rail wheel and track, reduction rolling contact fatigue
- Noise reduction: flow noise vehicle and tracks, measurement and simulation

- Vehicle safety
- Accident research
- Passive and integral safety
- Active safety
- Vehicle efficiency
- Energy management
- Light weight design
- Driving experience
- Chassis control
- Power train control
- Driver assistance systems
- Automated driving
- Autonomous development methods
- Numerical simulation
- Test benches
- Test vehicles
- Energy efficiency: vehicle improvements, measurement and calculation
- Rail freight: automatic brake test, automatic coupler
- Turbocharging
- Fuels
- Mixing
- Test equipment for engines, turbochargers, and components; measurement methods
- Conflict point analysis at intersections
- Two-wheeler safety
- Semi-automated analysis of stereo videos

- Energetic optimization and use pattern of alternative drive trains
- Power train simulation
- Individual driver behavior