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The University of Žilina (UNIZA) is a modern, university-type high education institution. It offers opportunities for diverse cooperation at six faculties (Faculty of Operation and Economics of Transport and Communications, Faculty of Mechanical Engineering, Faculty of Electrical Engineering and Information Technology, Faculty of Civil Engineering, Faculty of Security Engineering, Faculty of Management Science and Informatics). The university has more than 1,400 employees, including 541 university teachers. With its more than seventy years of history, it occupies a leading position in the Slovak educational and scientific research area, not only by the number of students and the offer of accredited study programmes, but especially by significant research and international activities. According to the prestigious Times Higher Education World University Rankings 2025, the University of Žilina (UNIZA) has become the best university in Slovakia for the first time (the best rating was achieved by UNIZA in the parameter of research environment and teaching). More information click here UNIZA.

Economics and Transport

Workplace	Description of offered activities	Contact person
Department of Communications of the Faculty of Operation and Economics of Transport and Communications	• Impact of changes of IFRS standards on the presentation of financial statements.	doc. Ing. Miriam Jankalová, PhD. miriam.jankalova@fpedas.uniza.sk
Department of Communications of the Faculty of Operation and Economics of Transport and Communications	• Impact of the company's CSR activities on the quality of life in the region.	doc. Ing. Miriam Jankalová, PhD. miriam.jankalova@fpedas.uniza.sk
Department of Communications of the Faculty of Operation and Economics of Transport and Communications	• Employee satisfaction and loyalty as a prerequisite for sustainable human resources management. Building an employer brand. Employee satisfaction survey (employee expectations, perceived quality of personnel services, employee motivation, creating a suitable work environment, communication and employee awareness, management styles). Strategic human resources management. Personnel controlling.	doc. Ing. Mariana Strenitzerová, PhD. mariana.strenitzerova@fpedas.uniza.sk
Department of Communications of the Faculty of Operation and Economics of Transport and Communications	• User testing (UX) of human interaction with the vehicle (its controls) in changing conditions by means of an eye camera and EEG in order to increase the efficiency and safety of the investigated processes.	prof. Ing. Radovan Madleňák, PhD. radovan.madlenak@fpedas.uniza.sk
Department of Communications of the Faculty of Operation and Economics of Transport and Communications	• Ergonomics of vehicle design (placement of controls in the driver's field of vision) with which a person comes into contact in the process of their control.	prof. Ing. Radovan Madleňák, PhD. radovan.madlenak@fpedas.uniza.sk

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Department of Road and Urban Transport of the Faculty of Operation and Economics of Transport and Communications	• Assessment of suitability of distribution of transported types of goods with regard to the responsibility of the loading organization for non-overloading of vehicles or their axles. Securing goods against movement during transport or securing pallet trucks with KMS company goods against movement during transport.	Ing. Ján Vrábel, PhD. jan.vrabel@fpedas.uniza.sk
Department of Road and Urban Transport of the Faculty of Operation and Economics of Transport and Communications + Institute of Forensic Research and Education	• Experimental measurements of dynamic properties of motor vehicles and driving tests, • Reconstruction and in-depth analysis of road accidents and dangerous situations in road transport (near-miss incidents) with the use of numerical simulation tools, • In-depth analysis of the impact load of road users in road traffic accidents (passengers of road vehicles as well as vulnerable road users) with the use of numerical simulation tools, • Impact tests in non-laboratory conditions (in-field real world crash testing).	Ing. Eduard Kolla, PhD. kolla@uniza.sk Ing. Ján Ondruš, PhD. jan.ondrus@fpedas.uniza.sk
Department of Road and Urban Transport of the Faculty of Operation and Economics of Transport and Communications	• Measurement of basic operating characteristics of road vehicles, • Determining (measuring and quantifying) the impact of vehicle operating modes on their energy intensity and environmental emissions; Determining the dynamic properties of vehicles; Measurement of noise and vibration (interior / exterior) emitted during vehicle operation; Diagnostics of electronic systems.	doc. Ing. Branislav Šarkan, PhD. Branislav.sarkan@fpedas.uniza.sk
Department of Railway Transport of the Faculty of Operation and Economics of Transport and Communications	• Distribution - determination of the optimal system of products distribution (type or combination of transport, transport system, etc.), including intermodal transport, • Cost controlling for various product transportation systems, • Optimization of transport processes on the railway siding, solution of transport logistics, • Process and system analysis, investigation of synergistic effects in the emergence of risks in distribution chains.	Prof. Ing. Jozef Majerčák, CSc. Jozef.majercak@fpedas.uniza.sk
Department of Railway Transport of the Faculty of Operation and Economics of Transport and Communications	• Warehouse logistics - a complex solution to the problems of warehouse management, • Inventory theory - determining the optimal batch size and supply period. Establishment of criteria for JIT supply, • Internal logistics - a system of moving material between objects within the company, • Distribution - determination of the optimal system of products distribution (type or	doc. Ing. Vladimír Klapita, CSc. vladimir.klapita@fpedas.uniza.sk

	combination of transport, transport system, etc.), • Intermodal transport - a complex solution for the technique and technology of container transhipment hub in the company.	
Department of Water Transport of the Faculty of Operation and Economics of Transport and Communications	• Logistics solutions for the transport of products of automotive industry in both export and import by inland waterway and maritime transport.	doc. Ing. Jarmila Sosedová, PhD. jarmila.sosedova@fpedas.uniza.sk

Mechanical Engineering

Workplace	Description of offered activities	Contact person
Department of Applied Mechanics of the Faculty of Mechanical Engineering	• Stress-strain and dynamic analyzes and loss of structural stability by modeling and simulations using FEM (finite element method); prediction of fatigue life of equipment and experimental verification of fatigue properties of materials; modeling and analysis of technological processes; modeling, analysis and synthesis of mechanisms and systems of bodies composed of rigid and flexible bodies; vibration diagnostics of rotary machines, analysis of starts and stops; experimental modal analysis - determination of operating modes of oscillations.	doc. Ing. Milan Vaško, PhD. milan.vasko@fstroj.uniza.sk
Department of Design and Mechanical Elements of the Faculty of Mechanical Engineering	• Design development and innovation; optimization of design parameters of proposed products; computer aided design; experimental research of tribological properties of materials; development and creation of prototypes with the use of Rapid Prototyping and Rapid Tooling technologies; research and development in the field of rolling bearings; research in the field of transmission systems and transmissions; research in the field of virtual testing; electromobility.	doc. Ing. Slavomír Hrček, PhD. Slavomir.Hrcek@fstroj.uniza.sk
Department of Materials Engineering of the Faculty of Mechanical Engineering	• Methods for assessing the resistance of materials to mechanical, physical and chemical stress; increasing the performance characteristics of construction materials intended for applications in the automotive industry (e.g. aluminum and magnesium based alloys); study of fatigue degradation mechanisms in surface layers of construction materials created by high-energy blasting; study of fatigue resistance of nanomaterials, superalloys of nickel, titanium alloys and aluminum alloys; analysis of failure mechanisms in high-cycle	prof. Ing. Eva Tillová, PhD. Eva.Tillova@fstroj.uniza.sk

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	and gigacycle fatigue; study of corrosion resistance of nanomaterials and analysis of mechanisms of corrosion failure by methods of impedance spectrometry and scanning electron microscopy.	
Department of Industrial Engineering of the Faculty of Mechanical Engineering	• 3D design of manufacturing processes and systems with the use of 3D laser scanning, augmented reality, virtual reality, simulation and other tools of digital enterprise; new approaches in the field of artificial intelligence and image recognition, the use of metamodeling and genetic algorithms; digital ergonomic analyses with the support of 3D motion capture, Motion Capture technology in the context of increasing productivity and at the same time humanizing work; organization, planning and management of business processes with the support of advanced information technologies (ERP, APS, MES, Cloud Computing, IoT, etc.).	doc. Ing. Martin Krajčovič, PhD. Martin.Krajcovic@fstroj.uniza.sk
Department of Machining and Production Technologies of the Faculty of Mechanical Engineering	• Computer aided design of technological processes and production on CNC equipment; simulation of processes for all types of technologies in ProEnginering, SolidWorks and SolidCAM interfaces; implementation of innovative progressive technologies; research of intensive productive and high-speed machining; research of progressive technologies of hard dry machining; research of high-speed and feed machining HSC and HSM; high-productivity machining HPM; implementation of precision machining with defined geometry in order to replace non-ecological technologies; machining of difficult-to-machine materials based on titanium, nickel, tungsten, sintered carbides, technical ceramics, etc.	doc. Ing. Mário Drbúl, PhD. mario.drbul@fstroj.uniza.sk
Department of Automation and Production Systems of the Faculty of Mechanical Engineering	• Intelligent robotic production systems with the use and application of IT methods, artificial intelligence methods, development of automated robotic inspection systems, application of camera vision and image recognition for the purposes of "pattern and error recognition". Implementation of neural networks and deep learning methods for robotic workplaces. Development of rope robots for inspection systems. CNC production technology and robotics, development and implementation of unconventional structures of robots, collaborative robots, handling, technological and service robots and robot-technological equipment.	prof. Ing. Ivan Kuric, PhD. Ivan.Kuric@fstroj.uniza.sk
Department of Technological Engineering of	• Welding and related processes, which focus on assessing the suitability of the proposed welding procedures, with an emphasis on	prof. Ing. Dana Bolibruchová, PhD. Danka.Bolibruchova@fstroj.uniza.sk

the Faculty of Mechanical Engineering	the use of numerical simulation analyses and modern experimental methods in measuring process variables, especially for arc welding methods, forming, which focuses on the development of new progressive unconventional technologies of forming with ab emphasis on the use of physical knowledge in forming, • Foundry, which provides work in the field of metallurgy and casting production technology; uses a comprehensive simulation program PROCAST for the analysis of casting processes, error prediction, microstructure formation, reoxidation processes and heat treatment and hardness evaluation.	
Department of Power Engineering of the Faculty of Mechanical Engineering	• Development of heat recovery equipment; design of equipment in energy - cogeneration, trigeneration; 3D simulations of energy flow and transport; energy audits of technological processes in terms of heat consumption; proposals for measures to reduce the energy intensity of technological processes, expertise, design and forensic activities in the field of heating, ventilation and air conditioning; consulting in the field of thermomechanics, fluid mechanics, heat transfer and their practical applications; expertise activity for special ventilation systems - tunnels; design and projection of hydrostatic systems and their control systems; visualization of flow of fluids in piping systems.	prof. Ing. Radovan Nosek, PhD. radovan.nosek@fstroj.uniza.sk
Department of Transport and Handling Machines of the Faculty of Mechanical Engineering	• Analysis of contact of railway wheelset and track; testing, reliability and service life of mechanical parts of braking systems of rolling stocks; structural analysis of rolling stock components and analysis of dynamic properties of vehicles with the use of simulation calculations on virtual models; construction of rolling stocks and track machines; construction of transport and handling equipment; experimental analysis of noise and vibration; design and analysis of internal combustion engine properties.	prof. Dr. Ing. Juraj Gerlici Juraj.Gerlici@fstroj.uniza.sk

Electrical Engineering and Information Technology

Workplace	Description of offered activities	Contact person
Department of Physics of the Faculty of Electrical Engineering and Information Technology	• Use of acoustic and optical methods and techniques for the study of condensed matter; acoustic spectroscopy; measurement of mechanical and structural properties of materials by acoustic (ultrasonic) methods; NSOM near-field scanning optical microscopy; DLW direct beamforming system;	prof. Ing. Dušan Pudiš, PhD. dusan.pudis@uniza.sk

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	Interference lithography; AFM microscopy; Confocal microscopy; Optical fiber sensors and capillary fibers for networks and sensor applications; Measurement of spectral and directional radiation dependences of sources and detectors, low-temperature optical and electrical measurements in the range 10K-500K.	

Department of Electromagnetic and Biomedical Engineering of the Faculty of Electrical Engineering and Information Technology	• The Department has up-to-date research infrastructure in the areas of simulation, measurement and experimental analyses connected to electromagnetic field and biomedical engineering,
	• It offers the following services:
	  • Analyses and simulations of the electromagnetic field with the use of professional numerical means,
	  • Research and development of means for electromagnetic non-destructive evaluation of materials,
	  • Research in the field of electromagnetic biocompatibility and non-thermal biological effects of the electromagnetic field,
	  • Research for biomedical applications - sensors, processing and analyses of signals,
	  • Research in the field of photopletysmography imaging and its application in medical diagnosis, acquisition and analysis of biopotentials,
	  • Translation activities in the field of biomedical engineering,
	  • Implementation of IT infrastructure (not only) for medical purposes.
		prof. Ing. Ladislav Janoušek, PhD.
		ladislav.janousek@uniza.sk

Department of Mechatronics and Electronics of the Faculty of Electrical Engineering and Information Technology	• Design of electronic systems and equipment ordered according to the specification of the target application - Creation of circuit diagrams, implementation of PCB design, functional laboratory tests,
	• Revision of equipment up to 1000 VAC / DC at the workplace or at the customer,
	• Diagnostics of processes / systems with the use of high-speed image capture,
	• Contactless measurements with the use of visual systems, high-speed sensing of events and processes,
	• Scanning through microscopy, stroboscopic measurements,
	• Creation of measuring systems through virtual instrumentation
	  • Design of measuring chains for measuring electrical and non-electrical quantities via standard sensors,
	  • Design of operating virtual instruments and graphical interfaces,
		prof. Ing. Pavol Špánik, PhD.
		pavol.spanik@uniza.sk

	• Expert and consulting activity
	  • Implementation of expert activities in the field of analysis of the state of used electronic systems solutions,
	  • Simulation analyses of complex electronic connections, use of multiphysical analyses and creation of models for estimating the lifetime of critical connection elements,
	  • Provision of professional consultations in the field of electromagnetic compatibility of electronic components in defined ranges (resistance, interference, safety, etc ...), verification tests of connections and provision of optimization procedures for compliance with applicable legislation,
	  • Thermal imaging measurements and analyses of systems by professional thermal imaging systems,
	
	• 3D scanning and displaying of objects
	  • Certified audit activity in the field of energy efficiency of buildings,
	  • Implementation of audits and certification for electrical installations and lighting of administrative, social, industrial and residential buildings,
	  • Implementation of expert activities in the field of increasing the energy efficiency of buildings with the use of renewable electricity sources,
	  • Design and implementation of projects of high-current electrical installation and lighting of industrial plants and buildings.
	  • Proposal of projects of photovoltaic power plants up to 10kWp / over 10kWp of installed capacity.
	
	• Expert activity in the field of electronic and control systems of cars
	  • Complex activities in the field of diagnostics and design of electronic systems of vehicles with petrol and diesel engines,
	  • Diagnostics and design of software and hardware modifications of vehicle control systems - chassis, safety, comfort, powertrain, infotainment,
	  • Simulation analyses of power flow in electric vehicles, design of traction battery cell balancing systems,
	  • Implementation of measurement of static and dynamic parameters of traction batteries.
	• The department provides various trainings, courses, seminars and consulting activities at	

	the request of industrial entities in the field of heavy current electrical engineering, power electronics, programming and applied electronics in mechatronic and medical systems, such as: • Design and construction of power semiconductor systems for various consumer and industrial applications, • UP and DSP programming (Freescale, Texas Instruments, etc.), • Simulation analysis of electronic systems using multiphysical simulation models with a high-resolution level, • Translations of professional studies and technical standards, • Control systems of motor vehicles with ICE, hybrid HEV and electric (battery) BEV, • Control of technological processes by programmable logic controllers PLC, including industrial informatics - industrial and information networks, • Active filters with a focus on eliminating the negative effects of electric traction equipment and industrial complexes with semiconductor converters on the electric power system, • Design and implementation of control algorithms based on programmable logic arrays FPGA, • Control of special types of converters and drives with two-phase motors for pumps with high torque, • Creation of virtual measuring devices based on virtual instrumentation, • design of control for lighting systems in special applications (microscope, ...), • Development of algorithms for computer vision, • Development of applications for high-speed cinematography.	
Department of Power Systems and Electric Drives of the Faculty of Electrical Engineering and Information Technology	• Modeling and simulation of the power system operation, application of the concept of smart grids in the management of the transmission and distribution system, • Dynamic modelling of power system components, • Stochastic modelling of various types of loads in power networks for the optimization of power network operation, • Optimization of electric vehicles charging either in home or public charging stations (power flow management), • Power system management, • Modeling of the operation of renewable energy sources for the analysis of the operation of the power system and for optimizing the	prof. Ing. Peter Braciník, PhD. peter.bracinik@uniza.sk

	deployment of these sources within the virtual units, • Comprehensive solution to the issue of power quality, EMC (harmonic components, asymmetry of power systems, overall power factor, flicker, whether in the distribution or transmission system, reactive power), • Protection of buildings facilities against electrochemical corrosion, • Protection of buildings against the effects of stray currents – corrosion engineering, • Sensorless control of electric drives, which allows to increase the overall reliability of drives as well as reduce their dimensions, • Design of new progressive management methods where the research is focused on methods using management with forced dynamics, or sliding control, • Design and implementation of control algorithms for applications with linear drives for highly dynamic applications, where research focuses on the development of such control algorithms that can eliminate undesirable effects such as friction, the effect of grooving on torque ripple, etc., • Design of electrical machines for various industrial applications with the use of modern computer software products with the possibility of optimizing existing electrical machines, • Electric drives and control of traction vehicles and electric cars, design of electric control drives with different types of electric motors, design of electric traction drives, repairs and innovations of electric drives, • The area of diesel-electric vehicles, electric power transmission, • Complete design of electrical machines for various applications in a wide range of power, the use of the finite element method in electromagnetic and thermal calculation, • Conceptual solution and technical preparation of reconstructions and modernizations of independent traction locomotives, conceptual and technical solution of diesel-electric traction, design of electrical circuits of diesel-electric locomotives, • Traction calculations for project organizations, travel times, tachograms, simulation of traction vehicles, dynamic and static simulation of electrical machine operation and control, quality management systems in accordance with the requirements of the ISO 9000 set of standards, training of internal auditors in accordance with the ISO 19011 standard, quality management literature.	
Department of Control and Information	• The key priorities are areas*:* • Modeling of safety and security features of control and transmission systems,	prof. Ing. Aleš Janota, PhD. ales.janota@uniza.sk

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Systems of the Faculty of Electrical Engineering and Information Technology	• Safety in relation to industrial process control and intelligent robotic systems,
	
	• Consulting activities in the areas:
	  • Consulting activities in the field of safe communication and safety critical control systems, analysis, synthesis and evaluation of safety of control systems with a defined level of safety, safety of information systems, preparation of project documents in the field of management of road transport,
	  • Concept design, analysis, synthesis, design and management of information systems, Industry 4.0 concept,
	  • Consultations in the development of control systems with Safety PLC.Standardization activities, consultations and cooperation in the development of standards,
	  • Network applications, transport technologies in the motorway network,
	
	• Expertise and design work
	  • Analysis and synthesis of information systems, preparation of design documents in the field of protection of persons and property and in the field of management of road transport,
	  • Assessment of the safety integrity of safety-related control systems for industrial applications,
	  • Measurement and qualification tests of metallic structured cabling for LAN networks up to 1000 Mb / s using the FLUKE CIQ-100 device,
	  • Development of microelectronic systems for RFID,
	  • Profibus and CAN fieldbus testing,
	  • Analysis of communication in Wi-Fi wireless networks,
	  • Development of safety applications in industry and transport,
	  • Development and implementation of control algorithms for industrial and transport systems,
	
	• Development of applied software
	  • PLC programming according to IEC 61131-3 standard,
	  • Creation of visualization of industrial technological processes,
	  • Drive control programming,
	  • Development of safety applications for the control of technological processes in industry,
	  • Development and implementation of control algorithms.	

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Department of Multimedia and Information-Communication Technology of the Faculty of Electrical Engineering and Information Technology	• The Department is focused on the development of information and communication technologies and a wide range of creation, processing and management of multimedia content,
	
	• The Department can provide*:*
	  • expertise in the field of optimization of communication network structures,
	  • optical fiber welding,
	  • development of electronic applications from the low-frequency field to techniques in the gigahertzh frequency band,
	  • development of applications with multimedia content,
	  • production of audiovisual courses and other audiovisual materials according to customer requirements,
	  • digital signal processing, analysis of audio and video signals according to customer requirements, including machine learning methods,
	  • measurement and evaluation of room acoustics,
	  • development of specialized electronic systems, including prototype production,
	  • measurement of electromagnetic field intensity and interference,
	  • measurement of transmission parameters of metallic and optical lines, detection of inhomogeneities using OTDR,
	  • measurement of acoustic parameters of enclosed spaces,
	  • measurements of optical systems and near-infrared spectrum analysis,
	  • 3D object scanning, digital scan processing,
	  • Development of virtual and augmented reality environments, gaming,
	  • research and development of custom software in the field of computer vision, including deep learning of neural networks,
	  • research, development and production of hardware in the field of camera systems, IoT devices and complex systems with wireless connectivity, database and web support,
	  • development and production of information systems,
	  • printing and embroidery on textiles, including electrically conductive threads,
	  • modeling and printing of 3D objects,
	
	• Rental of a media production studio equipped with 2 × three cameras in HD resolution, a Tricaster virtual studio and an editing workplace,
		prof. Ing. Róbert Hudec, PhD.
		robert.hudec@uniza.sk

	• Production of multimedia works, • Sound system for events, • Testing of GPS devices (frequency L1) on the Spirent GSS 6700 hardware simulator, • Complete design of radio links of various orientations (signal coverage, frequency plan, interference), • WiFi network emulation for localization on the Spirent GSS5700 simulator, • Design of solutions / systems for locating mobile objects - indoor / outdoor environment • Provide training, courses, seminars and consultations in areas of mobile networks, wireless and fixed local area networks, localization systems, artificial intelligence, game design, creation of graphical and multimedia content, etc.	

Civil Engineering

Workplace	Description of activities offered	Contact
Department of Geotechnics KGt Faculty of Civil Engineering	• Stress-strain and dynamic analyses. • Investigation of structural stability loss through modelling and simulations using FEM. • Verification of the interaction between the subsoil and machinery from a static and dynamic point of view. • Comprehensive analyses of geotechnical structures. • Survey of rock environments; research and development in the field of building materials. • Laboratory testing of soils • Modelling of groundwater flow • Modelling of geodynamic phenomena • Noise and air pollution propagation analyses • Mobility planning audit, mobility plans	doc. Mgr. Dana Sitányiová, PhD. dana.sitanyiova@uniza.sk
Department of Civil Mechanics and Applied Mathematics KSMAM SvF	• Vibration measurement, experimental modal analysis, strain gauge measurement. • Processing of measured data, data analysis, signal processing. • Numerical simulations using the finite element method (static and dynamic analyses, thermal analyses, contact problems, wave propagation). • Numerical and experimental analysis of vibration transmission through geological environments and building structures. • Identification of mutual influences of vibration sources in production processes and proposals for reducing adverse dynamic effects on highly sensitive equipment. • Addressing the effects of technical seismicity from transport vehicles and other sources.	doc. Ing. Daniel Papán, PhD. daniel.papan@uniza.sk

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Department of Civil Engineering and Urban Planning KPSU Faculty of Civil Engineering	• Preparation of project documentation for new and renovated buildings in the scope of zoning decisions, building permits and implementation projects. • Thermal evaluation of buildings: preparation of thermal-technical assessments (thermal-energy assessments), thermal imaging measurements, blower-door tests), energy certificates for buildings, energy audits of buildings. • Expert assessments, instrumental diagnostics of the technical condition of land structures in the field of building thermal engineering, acoustics, lighting, insolation and fire safety. • Surveying, diagnostics, analysis, consulting and design of the restoration of historic buildings (national cultural monuments). • Development of progressive building envelope structures and implementation of measurements in the form of pavilion research and in a system of climate chambers.	doc. Ing. Radoslav Ponechal, PhD. radoslav.ponechal@uniza.sk
Department of Road Construction KCS SvF	• Transport engineering analyses, capacity calculations, transport plans. • Planning, modelling and simulation of transport infrastructure. • Assessment of the impact of transport on the environment (noise, exhaust fumes). • Operational suitability and performance of roadways and roadway management systems. • Properties of asphalt mixtures, designs, evaluation. • Road design and assessment.	doc. Ing. Andrea Kocianová, PhD. andrea.kocianova@uniza.sk
Department of Railway Engineering and Track Management KŽSTH SvF	• Quality control of construction work on railway structures. • Assessment of track operational capability – diagnostics of structural elements of railway superstructure and substructure. • Design and assessment of repair technologies for railway superstructure and substructure. • Assessment of the environmental impact of railway transport on the territory and • Proposal of measures.	Prof. Ing. Libor Ižvolt, PhD. libor.izvolt@uniza.sk

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Department of Building Structures and Bridges KSKM Faculty of Civil Engineering	• Experimental verification of the actual behaviour of elements and entire structures and bridges in operation. • Load testing of bridges. • Inspections, structural engineering surveys and diagnostics of bridges and structures. • Calculations, determination of load capacity and evaluation of bridges. • Advanced numerical analyses and simulations of the behaviour of structures and bridges. • Analysis of the impact of structural failures on their overall performance and reliability. • Preparation of static assessments and control calculations. • Design of structures and bridges, • including their reconstruction, with an emphasis on highly efficient systems.	doc. Ing. Jaroslav Odrobiňák, PhD. jaroslav.odrobinak@uniza.sk
Department of Geodesy KGd Faculty of Civil Engineering	• Geodetic surveying of the actual state • Terrestrial laser scanning • Creation of 3D models, digital relief models • Measurement of deformations and displacements of building and industrial structures and objects • Application of gravimeters and radar technology in geophysical and geotechnical subsoil surveys • GIS – creation of object catalogues, collection and processing of geodetic and attribute data • Processing of orophotomaps or orthophotomosaics.	doc. Ing. Jana Ižvoltová, Dr. jana.izvoltova@uniza.sk
Department of Construction Technology and Management KTMS Faculty of Civil Engineering	• Road diagnostics, roughness, flatness, load-bearing capacity, calculation of reinforcement thickness. • Calculation of the economic efficiency of the proposed • Road repair technology • Calculation of priorities and optimisation of • Proposal for road network repairs • Determination of deformation characteristics of asphalt-bound mixtures. • Determination of fatigue parameters of asphalt concrete materials. • Assessment of recycled materials bonded with asphalt and composite materials. • Quality control of construction work on motorway, road and railway structures. • Asset management in road management.	Prof. Ing. Ján Mikolaj, CSc. jan.mikolaj@uniza.sk

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Security Engineering

Workplace	Description of offered activities	Contact person
Department of Security Management of the Faculty of Security Engineering	• Assessment and determination of the protection level of facilities (e.g., city-managed facilities – technical services, residential buildings, schools, sports facilities) and proposal of security measures; modeling of public space coverage by surveillance camera systems and their design; proposal for the implementation of artificial intelligence in monitoring centers; ensuring protection compliance with GDPR regulations, the Cybersecurity Act, the Public Administration Information Systems Act, and the Classified Information Act; cybersecurity status audit in accordance with the Cybersecurity Act; assessment of system and service resilience/vulnerability, SMART city/region agenda; participation in crime prevention programs. Protection of soft targets, security audits. Consultancy focused on physical, facility, and information security. Design and installation of alarm systems.	prof. Ing. Andrej Veľas, PhD. andrej.velas@uniza.sk
Department of Crisis Management of the Faculty of Security Engineering	• Risk assessment and management in public administration and local government; modeling and simulation of crisis events focused on hazardous substance leakage; creation of crisis scenarios for the preparation of crisis managers; preparation of crisis plans for entities involved in economic mobilization; civil protection and crisis management; population protection plans, employee protection plans, and plans for people in care; flood plans; preparation of documents for municipalities in the field of state defense and economic mobilization; crisis staff statute for municipalities; stress management and prevention; provision of psychological first aid; risks and process safety in transport and logistics; transportation of dangerous goods according to ADR; application of risk management in the field of occupational health and safety (OHS); risk assessment and management, documentation processing, and implementation of preventive measures in companies in the field of major industrial accident prevention and OHS; implementation of risk management (according to ISO 31000) and crisis management in processes; risk assessment in businesses according to ISO 9001:2015 Quality Management System; assessment of key risks from the perspective of corporate crisis prevention and preparation of action plans for response; process analysis and proposal of measures to ensure business continuity.	doc. Ing. Katarína Buganová, PhD. katarina.buganova@uniza.sk
Department of Fire Engineering of the Faculty of Security Engineering	• Fire protection; fire safety of buildings and solutions for fire safety of buildings; Occupational Health and Safety (OSH) in rescue services; assessment of combined risks; small-scale testing of building materials for thermal fire loads; measurement of selected fire technical properties of materials;	doc. Ing. Jozef Svetlík, PhD. jozef.svetlik@uniza.sk

Management and Informatics

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Workplace	Description of offered activities	Contact person
Department of Technical Cybernetics of the Faculty of Management Science and Informatics	• Mobile robots and their integration in the world of IoT - development of new control algorithms, design of elements and parameters of computer networks, analysis of dynamic properties of transport processes and means when moving between nodes and modeling of human dynamics in the control of technical systems.	Doc. Ing. Peter Ševčík, PhD. – peter.sevcik@fri.uniza.sk
Department of Mathematical Methods and Operations Research of the Faculty of Management Science and Informatics	• Electric mobility - data analysis, design of infrastructure of charging stations for electric vehicles (distribution of stations in terms of demand for charging and capacity of the electricity network).	Doc. Ing. Ľuboš Buzna, PhD. – lubos.buzna@fri.uniza.sk
Department of Mathematical Methods and Operations Research of the Faculty of Management Science and Informatics	• Simulations of large-scale transport and logistics systems, simulation methods on large-scale transport systems.	Doc. Ing. Norbert Adamko, PhD. – norbert.adamko@fri.uniza.sk
Department of Mathematical Methods and Operations Research of the Faculty of Management Science and Informatics	• Computer vision, deep learning, artificial intelligence - classification and tracking of objects, visual quality control, use of methods in augmented reality, automated processing of large data and their analysis.	Ing. Peter Tarábek, PhD. – peter.tarabek@fri.uniza.sk
Department of Informatics of the Faculty of Management Science and Informatics	• Complex database systems - storage and processing of large amounts of data, data storage security	Prof. Ing. Karol Matiaško, PhD. – karotl.matiasko@fri.uniza.sk
Department of Informatics of the Faculty of Management Science and Informatics	• Reliability analysis of complex systems	Prof. Elena Zaitseva, PhD. – elena.zaitseva@fri.uniza.sk
Department of Information Networks of the Faculty of Management Science and Informatics	• Computer networks, computer network security, modeling and simulation of computer networks	Doc. Ing. Pavel Segeč, PhD. – pavel.segec@fri.uniza.sk
Department of Software Technologies of	• Database systems, VANET	Doc. Ing. Ján Janech, PhD. – jan.janech@fri.uniza.sk

the Faculty of Management Science and Informatics		
Department of Software Technologies of the Faculty of Management Science and Informatics	• Quality of services, increasing company performance, quality management	Doc. Ing. Miroslav Hrnčiar, PhD. – miroslav.hrnciar@fri.uniza.sk
Department of Management Theories of the Faculty of Management Science and Informatics	• Innovation management - analysis of the current state, design of innovation strategy, implementation of innovation strategy in the company	Prof. Ing. Josef Vodák, PhD. – josef.vodak@fri.uniza.sk
Department of Management Theories of the Faculty of Management Science and Informatics	• Motivation of human potential and capital	Prof. Ing. Martina Blašková, PhD. – martina.blaskova@fri.uniza.sk
Department of Macro and Microeconomics of the Faculty of Management Science and Informatics	• Efficient use of production inputs with a focus on human capital	Prof. Ing. Alžbeta Kucharčíková, PhD. – alzbeta.kucharcikova@fri.uniza.sk
Department of Macro and Microeconomics of the Faculty of Management Science and Informatics	• Relationships and social responsibility in companies	Doc. Ing. Emese Tokarčíková, PhD. – emese.tokarcikova@fri.uniza.sk

Humanities

Workplace	Description of offered activities	Contact person
Institute of Mediamatics and Cultural Heritage	• Processing, storage and presentation of information, information content through information specialists using knowledge from library and information science, new media, graphic design, photography, management, marketing, digitization and subsequent processing and presentation of digital content, various forms of presentation of cultural heritage.	Mgr. Eva Augustínová, PhD. eva.augustinova@umkd.uniza.sk
Institute of Mediamatics and Cultural Heritage	• A critical thinking course teaches people how to analyze information, distinguish between facts and opinions, and apply logical procedures to problem solving. It focuses on developing the ability to doubt, ask the right questions and evaluate evidences by which help to make informed decisions and resist misinformation. It	Mgr. Jakub Švec, PhD. jakub.svec@umkd.uniza.sk

	strengthens analytical skills and supports objective thinking in various life and work situations.	
Institute of Mediamatics and Cultural Heritage	• The Geopolitical Orientation and Political Compass Seminar focuses on the analysis of global political relations, international conflicts, and power structures, helping participants understand different political ideologies and their impact on world events. At the same time, the course uses the political compass tool, which allows individuals to examine their own political positions in the context of a wider spectrum of ideological currents, and thus gain a better orientation in the current geopolitical situation.	Mgr. Jakub Švec, PhD. jakub.svec@umkd.uniza.sk
Institute of Mediamatics and Cultural Heritage	• The management course for teachers is designed to provide teachers and school staff with skills in organizational management, effective communication and planning. It focuses on managing pedagogical and administrative challenges, leading teams, managing time, resolving conflicts and promoting professional growth. This course enables educators to lead classes and projects more effectively, and at the same time contributes to the development of strategic thinking in the school environment	Mgr. Beáta Pošteková, PhD. beata.postekova@umkd.uniza.sk

Lifelong Learning / Continuous Education

Workplace	Description of offered activities	Contact person
Institute of Lifelong Learning UNIZA	• Strengthening language skills for practice - professional and general English, German, Russian and French. • Preparation for certified English and German language exams. • Verification of language competences for the needs of practice and certified exams in German - Goethe Zertifikat. • Certified exams in English - Cambridge English. • Career management, managing work changes (change of job position, leaving work), prevention of burnout syndrome.	Mgr. Gabriela Vyletelová jazyky@uniza.sk Ing.Lucia Hrebeňárová, PhD. hrebenarova@uniza.sk

University Science Park

Workplace	Description of offered activities	Contact person
University Science Park UNIZA	• Comprehensive solutions using the latest technologies in artificial intelligence (AI), including advanced neural networks (NN), time series prediction, visual object detection and tracking, as well as the application of machine learning (decision trees for mining insights from spreadsheet data). We offer customized solutions focused on specific needs and challenges, leveraging the potential of AI and machine learning. • Detailed digitization, 3D laser scanning, scan processing, volume model and report generation, digital twins.	prof. Ing. Radovan Madleňák, PhD. riaditel-uvp@uniza.sk

	• Ergonomic analyses based on real data from data suit and wireless sensors and the possibility of their subsequent comparison in a CAD simulation environment. • Complex services in the field of construction, management, and utilization of sensor networks for transportation and climate, including the deployment of sensor networks, data processing, and analysis. We utilize modern mathematical and statistical methods, machine learning, and artificial intelligence to solve logistical problems, enhance road safety, optimize service systems, manage induced traffic, and mitigate urban heat islands in cities. We offer tailored solutions focused on specific needs and challenges with the aim of maximizing the value of data for concrete societal needs.	

Research centre UNIZA / research areas

Workplace	Description of offered activities	Contact person

Research Centre UNIZA	• Department of Materials Sciences
	  • Verification of strength, deformation and fatigue characteristics at temperatures up to 1200°C, loads up to 250 kN, at high frequencies in the range of gigacycles and various load parameters
	  • Surface and volume analyzes of metal-based materials, including their degradation under various loading conditions
	  • Chemical analyzes of materials, liquids and gases
	  • Evaluation of the degradation of materials for industrial and biomedical applications in simulated aggressive environments by exposure and electrochemical methods
	  • Unconventional surface treatment of metal materials (pulse laser cleaning, plasma electrolytic oxidation, fluoride coatings, etc.)
	• Department of Renewable Energy Sources
	  • Comprehensive research of the building envelope using direct and scientific methods
	  • Analysis of heating fuels
	  • Experimental research of heat exchangers for heat recovery
	  • Energy recovery of biomaterials, waste materials and other materials produced in connection with the COVID-19 pandemic
	  • Assessment of air quality in spaces for burning solid fuels (measurement of aerosols using an optical particle counter)
	  • Analysis of air pollution with particles of size 0.5 µm, 1.0 µm and 5.0 µm
	• Department of Sensor Systems
		Ing. Filip Pastorek, PhD.
		filip.pastorek@uniza.sk
		
		Ing. Daniel Kajánek, PhD.
		daniel.kajanek@uniza.sk
		
		prof. Ing. Gabriel Gašpar, PhD.
		gabriel.gaspar@uniza.sk
		
		Ing. Peter Hrabovský, PhD.
		peter.hrabovsky@uniza.sk

	• Automated collection and objective assessment of variable and non-variable parameters of a transport route and research and development of complex tools for evaluating the economic efficiency of investment in transport infrastructure • Assessment of the degradation of roadways from heavy freight traffic • Design and optimization of sensor solutions for use in transport infrastructure, as well as in other areas of the national economy (temperature, relative humidity, pressure, deformation, intelligent control methods) • Use of deep learning on AIoT devices • Collection of spatial data (point cloud) in the environment of forest infrastructure and their preparation for further analyses	