

## BASIC INFORMATION



### FACULTY OF SECURITY ENGINEERING – UNIVERSITY OF ZILINA

Legal form: Statutory undertaker  
Principal activity: Tertiary education  
Type of ownership: National domain

#### REPRESENTATIVES

Rector of UNIZA: Dr.h.c. prof. Ing. Tatiana Čorejova, PhD.  
Dean of the faculty: prof. Ing. Zdenek Dvorak, PhD.  
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#### CONTACT

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## ORGANIZATIONAL STRUCTURE

- Office of the Dean
- Departments of School:
  - Department of Security Management
  - Department of Fire Engineering
  - Department of Technical Sciences and Informatics
  - Department of Crisis Management
- Department of Security and Safety Research

## EDUCATIONAL ACTIVITIES

Faculty of Security Engineering (University of Žilina) is a technical faculty with more than 60 years of educational and scientific activities in the field of complex protection of society and citizens. It focuses on training of crisis managers, security managers, fire fighters, rescue service workers and other security and safety professionals.

Faculty provides accredited university study programs for bachelor's (Bc), master's (Ing) and doctoral (Ph.D.) degree in full-time and part-time (external) form of studies in these specializations:

- 8.3.1 Protection of Persons and Property:
  - Security Management
- 8.3.6 Rescue Services
- 8.3.7 Civil Security
  - Crisis Management
  - Protection of Critical Infrastructure

## RESEARCH ACTIVITIES

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Improvement of security and crisis management in public administration and business entities:

- creation of a general security theory and tools to assess the security of the environment,
- complex risk management, creation of procedures for risk analysis and design of preventive measures of management and technological nature in social, business, technical, technological and natural environment,
- optimized process of emergency planning, ensuring the prevention and resolution of major industrial accidents and their ecological consequences.

Raising the level of fire safety:

- improvement of the effectiveness of intervention actions tactics of fire and rescue services,
- addressing current challenges in the integrated rescue system, with emphasis on the efficiency of deployment of manpower and resources to deal with emergencies,
- improvement of fire safety of buildings.

Ensuring complex protection of people, property and information:

- resilience assessment of the critical infrastructure and assurance of its protection,
- development of theoretical foundations of Criminalistics and Criminology, focusing on prevention projects,
- design, evaluation and implementation of physical protection systems against anthropogenic threats,
- development problems of management system of information security and its implementation into practice.

## RESEARCH INFRASTRUCTURE

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### **Laboratory for modeling and simulation of crisis phenomena**

This laboratory is a facility for simulation of various types of crises events in social, technical, technological and natural environment. Laboratory is focused on collection, processing and evaluation of data relevant to modeling and simulation of crisis events such as traffic accidents, accidents with hazardous materials release, accidents with radioactive material release as well as physical attacks on listed buildings. That helps us to examine effectivity of decision making of crisis and security managers as well as reliability of a human factor in the process of resolution of various crisis events and security incidents.

### **Laboratory for Research on Critical Infrastructure Objects**

This laboratory enables creation of polygons of systems of building protection for experimental research of resistance, efficiency and reliability of elements of alarm systems and mechanical prevention tools. This helps us to collect input data for simulation tools, dedicated for quantitative evaluation of level of protection of buildings listed in national and European critical infrastructure. Laboratory enables measurement of probability of intruder detection by alarm

systems (for example IDA, CCTV, ACS, ATS), breakthrough resistance of mechanical protection tools and measurement of reliability of these systems in correlation with change of operating conditions

### **Laboratory for Fire and Chemical Research**

This laboratory is a facility for small-scale fire testing including reaction-to-fire tests, determination of selected physical, chemical and fire properties of solid and liquid combustibles, analysis of behaviour of combustibles exposed to thermal stress and flame, and efficacy analysis of liquid hazardous substances neutralisation agents and sorbents.

## UNIVERSITY JOURNALS

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- Journal of Crisis Management (since 2002, ISSN 1336-0019)
- The European Journal of Security and Safety (since 2006, ISSN 1338-6131)
- Communications (since 1999, ISSN 1335-4205)

## RESEARCH PROJECTS

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### FP7 PROJECTS

- FP7-313308 COBACORE - The Community Based Comprehensive Recovery ([www.cobacore.eu](http://www.cobacore.eu)),
- FP7-608166 RAIN - Risk Analysis of Infrastructure Networks in response to extreme weather ([www.rain-project.eu](http://www.rain-project.eu)),
- FP7-242377 SALIANT - Selective Antibodies Limited Immuno Assay Novel Technology ([www.saliant.eu/home](http://www.saliant.eu/home)),
- FP7-621386 ERAdiate - Enhancing Research and innovAtion dimension of the University of Zilina in intelligent transport systems ([www.erachair.uniza.sk/](http://www.erachair.uniza.sk/)).

### EUROPEAN COMMISSION - DG FOR HOME AFFAIRS – CIPS

- HOME/2013/CIPS/AG/4000005073 CIPAC - Critical Infrastructure Protection Against Chemical Attack ([www.cipac.tlp.eu](http://www.cipac.tlp.eu)),
- HOME/2010/CIPS/AG/044 PACITA - Methodology for physical protection assessment of critical infrastructure elements against terrorist and other types of attacks (<https://sites.google.com/site/pacitaen/prijemce-grantu>)

### EACEA –LLP/ERASMUS+

- 2006-SE/06/B/F/PP-161031 European Energy Supply Security Management Co-ordinators UNDER way towards STANDard indicators for continuous VET ([www.understand.se](http://www.understand.se)),
- 502092-LLP-2009-1-SK-ERASMUS-EMHE - eSEC Competency Based e-portal of Security and Safety Engineering ([www.esecportal.eu](http://www.esecportal.eu))
- 573942-EPP-1-2016-1-RS-EPPKA2-CBHE-JP KFORCE - Knowledge FOr Resilient soCiEty (<http://kforce.uns.ac.rs/>)

### APVV - NATIONAL SCHEME

- APVV 0043-10 - MOPORI – A comprehensive risk assessment model of industrial processes
- APVV-0727-12 FIREFF - Model of assessment of economic effectiveness of fire prevention measures

- APVV-0471-10 - Critical Infrastructure Protection in Sector Transportation
- APVV-0532-07 - Passenger car fires, computer simulation of fires and their experimental verification

#### VEGA/KEGA - NATIONAL SCHEME

- VEGA 1/0240/15 –Model of safety and protection of critical infrastructure in the transport sector
- VEGA 1/0064/15 - Optimization of competencies in the context of correlation with the specifics of the type of positions in the private security)
- VEGA1/0787/14 Research on quality safety management in local government as a prerequisite for efficient use of funds
- VEGA1/0175/14 – Identification of factors and indicators of changes in the security situation in the security environment necessary for the design of prevention strategies and their financing
- VEGA 1/1089/11- Research and design of new hypotheses for the assessment of fatigue damage cumulating of machine parts based on the combined application of cyclic stresses bending – torsion
- VEGA č.1/0234/13 - Implementation of optimization algorithms in the experimental and numerical analysis of limiting states multiaxial exposed structural elements
- KEGA 024ŽU-4/2015 – Framework of technical training courses for professionals' emergency services
- KEGA 005DTI-4/2014 - Sectoral integration of the spatial impact of safety management of environmental risks.

#### V4 - VISEGRAD FUND PROJECT

- The National Qualifications Framework NQF in V4 Countries - The Analysis of the implementation level

#### OTHERS

- CZ.1.07/2.4.00/31.0224 Population Protection and management of crisis and emergency.
- Bilateral project: Addressing economic risks in small and medium enterprises
- NAPP 15-046 Children on road: Improving the safety of children kindergartens and primary schools in Rajec
- Camp Protection - Research on the protective properties of materials used in infrastructure works

#### INSTITUTIONAL GRANT PROJECTS

Faculty approves grant support to young researchers and PhD students of the faculty each year.

#### COOPERATION WITH COMPANIES AND ACADEMIC INSTITUTIONS

National cooperation:

- Government Office of Slovak Republic,
- Office of the Security Council of Slovak Republic,
- Ministry of Transport, Construction and Regional Development of Slovak

- Republic,
- Ministry of Economy of Slovak Republic,
  - Ministry of Defense of Slovak Republic,
  - Ministry of Interior of Slovak Republic,
  - National Security Authority of Slovak Republic,
  - Government Council for Slovak Republic for Crime Prevention,
  - Presidium of Fire and Rescue of Ministry of Interior Bratislava,
  - Slovak Chamber of Private Security,
  - Fire and technical Expertise Department of the Ministry of Interior,
  - General Directorate of Railways of the Slovak Republic – Department of Defense and Protection,
  - National Labour Inspectorate in Košice,
  - High School of Fire Protection of Ministry of Interior of Slovak Republic,
  - Association of the Protection of Persons and Property Bratislava,
  - ZSSK Cargo Bratislava,
  - LYNX Bratislava,
  - Coca-Cola HBC Bratislava,
  - Volkswagen Slovakia, a.s. – Bratislava

International cooperation:

- Institut of Crisis Management, University of Economics in Prague, Czech Republic,
- Association of Fire and Safety Engineering, Ostrava, Czech Republic,
- Deutsche Telekom Dieburg, Germany,
- University St. Stephen in Budapest, Department of Fire Protection and Safety Technology, Faculty YBL Miklósa, Hungary,
- Austrian Institute for European and Security Policy , Austria
- University of Pittsburgh, USA,
- Defence Academy of the United Kingdom, University of Cranfield, Cranfield, United Kingdom,
- Industrie – und Handelskammer Magdeburg, Germany
- European Sever Storms Laboratory - Germany,
- Technische Universiteit Delft – Netherlands,
- Gavin and Doherty Geosolutions Ltd.- Ireland,
- Dragados SA- Spain,
- Freie Universitaet Berlin-Germany,
- Roughan & O' Donovan Ltd.- Ireland,
- Hellenberg International OY- Finland,
- Istituto di Sociologia Internazionale di Gorizia I.S.I.G- Italy,
- Ilmatieteen Laitos – Finland,
- Youris.com- Belgium,
- Union Fenosa Distribucion SA - Spain,
- Aplicaciones En Informatica Avanzada SL – Spain,
- University of Beograd – Serbia,
- Ecole Nationale de l'Aviation Civile - France,
- Universitatea de Vest din Timisoara - Romania,
- Vilniaus Gedimino Techvicos Universitetas - Lithuania,
- Instituto Superior Técnico - Portugal,

- IAEM - The International Association of Emergency Managers
- Society for Science & the Public (USA)
- Technical Committee CEN TC 127 / WG 8 a Technical Committee ISO TC 92 / SC 4
- ISEG NATO „Science for Peace and Security“
- EAS – European Association for Security
- PSC – Forum for Public Safety Communication Europe
- TIEMS – The International Emergency Management Society
- AGA – Technical Security Services Association panel Alarm

## SCIENTIFIC RESEARCH AND PROFESSIONAL EVENTS

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- International Scientific Conference „Crises Situations Solution in Specific Enviroment“, Zilina, Slovak Republic, (since 1995)
- International Scientific Conference of Young Scientists and Ph.D. students (since 2005)
- Conference „Work Safety in Emergency Services“ (since 2009)
- TRANSCOM (since 2004)

## TOP PUBLICATIONS

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- **Use of network analysis in conditions of critical infrastructure risk management** / Eva Sventekova and Maria Luskova and Zdenek Dvorak. In: WMSCI 2016 : the 20th world multi-conference on systemics, cybernetics and informatics : July 5-8, 2016 - Orlando, Florida, USA : proceedings. Vol. II. - [S.l.]: International Institute of Informatics and Systemics, 2016. - ISBN 978-1-941763-43-8. - S. 247-250.
- **Currently required competencies of crisis and security managers and new tool for their acquirement** / T. Loveček ... [et al.]. In: Management innovation and business innovation : proceedings of 2016 3rd international conference on Management innovation and business (ICMIBI 2016) : June 1-2, 2016, Manila, Philippines. - Singapore: Singapore Management and Sports Science Institute, 2016. - ISBN 978-981-09-7914-0. - S. 3-8.
- **Security zones for improvised explosive devices using ANFO explosive** / Z. Zvaková ... [et al.]. In: Transport means 2016 : proceedings of the 20th international scientific conference : October 5-7, 2016 Juodkrante, Lithuania. - ISSN 1822-296X. - Kaunas: Kaunas University of Technology, 2016. - S. 1100-1104.
- **Verification of risk assessment and treatment model and software tool in chemical establishments in Slovak republik** / Katarina Holla and Jozef Ristvej. In: PSAM 12 The Probabilistic Safety Assessment & Management conference proceedings : 22-27 June 2014 Sheraton Waikiki, Honolulu, Hawaii, USA. Vol. 1. - [S.l.]: PSAM, 2014. - ISBN 978-1502398260.
- **Fire safety in tunnels forming part of critical infrastructure** / Vladimir Mozer ... [et al.]. In: ICCST 2013 the 47th annual international carnahan conference on security technology : proceedings. - [S.l.]: IEEE, 2013. - ISBN 978-958-8790-65-7.
- **Modelling, simulation and information systems as a tool to support decision-making process in crisis management** / Jozef Ristvej ... [et al.]. In: Modelling and Simulation 2013 : the European Simulation and

Modelling Conference 2013 : October 23-25, 2013 Lancaster, United Kingdom. - [S.l.: EUROSIS-ETI], 2013. - ISBN 978-90-77381-79-3. - S. 71-76.

- **Technology and safety of biomass combustion** / Jana Müllerová, Marián Mikulík. - Saarbrücken : LAP LAMBERT Academic Publishing, 2012. - 180 s. - ISBN 978-3-8443-8055-2
- **Project-based teaching, practice in the academic environment** / Eva Sventekova, Tomas Lovecek. In: Latest advances in educational technologies : proceedings of the 11th WSEAS international conference on education and educational technology (EDU '12) : Singapore City, Singapore, May 11-13, 2012. - ISSN 2227-4618. - [S.l.]: WSEAS Press, 2012. - ISBN 978-1-61804-093-0. - S. 77-81.
- **Critical infrastructure protection systems effectiveness evaluation** / Tomas Lovecek, Jozef Ristvej, Ladislav Simak. In: Journal of homeland security and emergency management. - ISSN 1547-7355. - Vol. 7, no. 1 (2010), art. no. 34, [24] s.
- **The present status of creating the security system of the Slovak republic after entering the European union** / Ladislav Simak and Jozef Ristvej. In: Journal of homeland security and emergency management. - ISSN 1547-7355. - Vol. 6, no. 1 (2009), art. no. 20, [20] p.