

GENERAL DESCRIPTION OF THE FACULTY

The Faculty of Aeronautics was established on 1 February 2005 as a successor of the Air Force Academy of gen. Milan Rastislav Stefanik in Kosice, which had been a prestigious educational institution in Europe and in the world having provided university education for pilots and air operating personnel for over 30 years. The main objective of the Faculty of Aeronautics is to contribute to the achievement of the Technical University, in particular in the field of aeronautical technology, aeronautics and aerospace. The Faculty of Aeronautics is focused on the basic and also applied research and cooperates with many research institutions in Slovakia and neighbor countries and with many companies.

RESEACH TOPICS

- Development of sensors and electronic systems according to the specific user requirements, including sensors based on the magnetic microwires, analogue circuits of the signal processing, UAV on-board electronics, magnetic measurements and measured data processing, testing and calibration of sensors.
- Measurement and signal processing of physical quantities aimed on basic and applied research, control of advanced systems and technical systems health evaluation.
- Aerodynamic measurement, flight dynamics modelling, numerical modelling of fluid flow, heat transfer and cooling.
- Creation and analysis of spatial emission characteristics of aircraft antennas in a special anechoic chamber and on real aircraft and helicopters.
- Progressive methods of research, development, modelling, control and diagnostics in the engineering and maintenance processes in the aviation industry using the NX, Tecnomatix Jack and TX Plant Simulation software.
- Computer aided design, manufacturing and engineering, mold design and manufacturing for the plastic components, CAD/CAM model creation using the 3D scanner, manufacturing of real models developed in the CAD/CAM software using the 3D printers, manufacturing of prototypes according to the specific requirements using the NC milling machine, computer aided analyses and calculations.
- Implementation of new technologies, working procedures and safety practice resulting from the Single European Sky ATM Research (SESAR) project in the area of air traffic control.
- Aviation security and safety, human efficiency, modelling and analysis of aircraft operations and procedures.
- Research in the area of design and optimization of routes in the final approach in the airports with different navigation infrastructure.

LABORATORY

- Laboratory of applied magnetometry and sensorics
- Laboratory of diagnostics
- Laboratory of intelligent control systems of aircraft engines
- Computer laboratory equipped with SIEMENS PLM technology
- CAD/CAM/CAE computer laboratory
- Laboratory of aerodynamic tunnels
- Laboratory of composite materials
- Laboratory of applied physics
- Laboratory for the human efficiency research in aviation

COOPERATION

- Ministry of Transport and Construction of the Slovak Republic
- Ministry of Defense of the Slovak Republic
- Ministry of the Interior of the Czech Republic
- Polish Air Force Academy
- University of Pardubice (Czech Republic)
- Taganrog State University of Radioengineering (Russia)
- University of Defense (Czech Republic)
- Slovak Organization for Space Activities
- More than 50 other cooperation agreements

RESEARCH RESULTS AND EXPERIENCE

- more than 50 successfully solved national projects
- more than 200 publications in CC journals indexed in the Web of Science database
- more than 30 patents and utility models
- organizing and co-organizing of important conferences, such as New Trends in Aviation Development Modern Safety Technologies in Transportation, World Symposium on Applied Machine Intelligence and Informatics, IEEE International Symposium on Computational Intelligence and Informatics, Magnetic Measurements etc.
- participation in important projects such as
 - ✓ SKCUBE – First Slovak satellite
(<http://www.skcube.sk/skcube/first-slovak-satellite-skcube/>
<http://www.skcube.sk/partneri/univerzity/letecka-fakulta-technickej-univerzity-v-kosiciach/>)
 - ✓ 7 FP - ESPOSA - Efficient Systems and Propulsion for Small Aircraft,
(www.esposa-project.eu/)

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