

Bachelor in Automotive Electronics

Technical University of Kosice, Faculty of Electrical Engineering and Informatics

Bachelor in Automotive Electronics

Supervisor of the study programme: prof. Ing. Alena Pietrikova, CSc.

Supervising department: DEPARTMENT OF TECHNOLOGIES IN ELECTRONICS

Head of the department: prof. Ing. Alena Pietrikova, CSc., KTE FEI TU, Park Komenskeho 2, 040 01 Kosice

PROFESSIONAL PROFILE OF GRADUATE

- The graduate of bachelor study programme Automotive Electronics obtains basic theoretical education from the field of study, such as mathematics, physics, electrical engineering, informatics and programming.
- During the next part of studies, student obtains basic skills and knowledge from the field of study disciplines, such as electronics, theory of signals and electronic circuits, modern methods of processing and signals transmission and transmission lines. The student also obtains skills and knowledge from the field of automotive industry electronics systems, its design and construction, especially optical, mobile and satellite info-electronic systems.
- The graduate obtains skills and knowledge within the laboratory work and the automobiles electronic control systems diagnostics in the field of study.
- The graduate obtains basics of economic and management knowledge and technical terminology language skills from the field of study.
- The graduate obtains the ability to specialize and to adapt according to the automotive industry requirements for info-electronic systems, electronic control systems and diagnostic systems. At the end of the studies, the graduate obtains the ability to specialize and he/she has preconditions for the continuous education.

Study at MSc. study programmes

The graduate of Automotive Electronics bachelor study programme can continue to MSc. study programmes, such as Multimedia Telecommunication, Info-electronics, Advanced Materials and Automotive Electronics as well as other related study programmes.

Graduate employment

The graduate of bachelor study programme Automotive Electronics can find an employment as a highly-qualified processing engineer in a car manufacturer, for example in automobile electronic systems production in subcontracting, production lines operation and their minor adjustments. The graduate can find an employment as a technician in auto services and companies engaged in the production of the electrical engineering and electronic components for automobiles.

The graduate becomes a qualified and skilled employee for the field of automotive electronics.

The graduate obtains skills and knowledge from the field of modern electronic systems design and operation for the various fields of auto-electronics, audio and video electronics and other electronic mass media, microelectronics, optoelectronics, sensor systems, instrumentation, safety electronics, radio-communications including mobile systems which he can use in the elite electronic and private companies as:

- a qualified employee for auto-electronic systems production and design,
- a qualified employee for adoption of modern electronic applications,
- a qualified employee for the auto-electronics management and marketing field,
- a qualified employee for the field of auto-electronics education.

Laboratories of Department of Technologies in Electronics

- Laboratory of mounting technologies and PCB manufacturing
- Laboratory for manufacturing of multifunction microsystems and hybrid sensors
- Laboratory of quality and reliability
- Laboratory of CAD systems and e-learning education
- Laboratory of measurement

Cooperation with foreign universities

- Technical University Ilmeneau, Germany
- University Calabria, Italy
- University SANNIO Benevento, Italy
- Technical University Budapest, Hungary
- UPC Barcelona, Spain
- University Saint Etienne, France
- ČVUT Praha, VUT Brno, Czech Republic
- Alcatel SEL Stuttgart, Germany
- Siemens Vienna, Austria
- Medav GmbH Germany, Germany

Major courses of study programme:

1. semester	2. semester	3. semester	4. semester	5. semester	6. semester
Fundamentals of Electrical Engineering	Basic of Electronics	Analogue circuits	Fundamentals of technologies in electronics	Automotive Electronics	Automotive Active and Passive safety systems
Fundamentals of Materials Engineering	Electrotechnics	Automotive Electrical Systems	Measurement in electronics and telecommunications	Automated Measuring Systems	Microwave circuits and systems

Fundamentals of Algorithms and Programming	Programming	Digital Electronics	Computer simulation of electronic and communication system	Methods of quality evaluation in technologies in automotive electronics	Embedded Systems Programming
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Department of Technologies in Electronics (Katedra technológií v elektronike - KTE) in cooperation with Department of Electronics and Multimedia Communications (Katedra elektroniky a multimediálních telekomunikací - KEMT)

Education at the Department of Technologies in Electronics (KTE) is focused on the research activities in the field of material research based on modern experimental methods application and the use of computer technologies. The departments guarantee and provide the education in auto-electronics, electrical engineering technologies and materials production technologies field at Bachelor, MSc. and PhD. studies. The staff has 23 members including 5 professors, 4 senior lecturers and 14 lecturers who take a part in providing the education.

Scientific and research orientation of department:

- Production processes in electronics.
- Standard and polymeric thick film technologies.
- Research and development of multifunctional microsystems and hybrid sensors.
- Assembly and interconnecting technologies in electronics.
- Materials and technologies of printed circuit boards.
- Multi-layer modules based on the LTCC ceramics types.
- Quality and reliability of electronics systems.

The scientific and research activities of Department of Technologies in Electronics reflects into the work on national and international projects. Students often take a part in these projects by writing their seminar papers, Bachelor and Diploma works. The majority of the study program special courses are performed in the particular assignments practical work form in the department laboratories.

The department also creates preconditions for the foreign student mobilities by means of the bilateral projects in cooperation with the universities and institutions (TU Dresden, Óbuda University Budapest, ČVUT Praha).