UNIVERSITY OF ŽILINA
Faculty of Electrical Engineering

CONTACT

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All the questions concerning your studies will be attended at the Department of Studies:
Tel.: 041/513 20 63, 20 64

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ACCREDITED STUDY PROGRAMMES
FOR THE ACADEMIC YEAR 2017/2018

MASTER´S DEGREE STUDY PROGRAMMES	
FULL-TIME STUDY LENGTH OF STUDY 2 YEARS	**PART-TIME STUDY **** LENGTH OF STUDY 3 YEARS
Applied Telematics *	-
Biomedical Engineering *	-
Electric Power Systems *	-
Electric Drives *	-
Photonics *	-
Process Control *	-
Telecommunications and Radio-communications Engineering *	-
Multimedia Engineering	-
Power Electronic Systems *	-
* study programme is accredited also in the English language	

Note:
- In the study programme Electric Power Systems , by selection of optional courses, the student may specialise in the following areas: Power and Control Systems and Mechatronic and Automotive Systems

Detailed information on particular study programmes

- syllabus,
- course information sheets

can be found at http://vzdelavanie.uniza.sk/vzdelavanie/plany.php.

FOLLOW-UP STUDIES AFTER COMPLETION OF MASTER´S DEGREE STUDIES

- There is a possibility of extended studies within follow-up doctoral degree programmes at the Faculty of Electrical Engineering UNIZA in the academic year 2017/2018 – Electric Power Systems, Electrotechnologies and Materials, Process Control, Power Electrical Engineering, Telecommunications, Theory of Electrical Engineering (respective information about particular study programmes is available at the university website).

EXPECTED NUMBER OF ACCEPTED APPLICANTS TO THE FIRST YEAR: MASTER´S DEGREE STUDY		
STUDY PROGRAMME / FIELD OF STUDY	**PLANNED CAPACITY**	
	FULL-TIME	**PART-TIME**
Applied Telematics / Automation	20	-
Biomedical Engineering / Biomedical Engineering	30	-
Electric Power Systems / Electrical Engineering	40	-
Electric Drives / Electrical Engineering	20	-
Photonics / Electronics	20	-
Process Control / Automation	40	-
Telecommunications and Radio-communications Engineering / Telecommunications	80	-
Multimedia Engineering / Telecommunications	30	-
Power Electronic Systems / Electrical Engineering	40	-
Total number	320	-

TERMS AND CONDITIONS OF ADMISSION

1. **The fundamental prerequisite of** being accepted to the graduate study program (the second degree) is the full completion of the first degree of the university study (Higher Education Act, n. 131/2002 Coll.).
2. **The next condition** of acceptance for the graduate study programmes (study programmes of the second degree) at the Faculty of Electrical Engineering UNIZA for the academic year 20017/2018 is the full completion of the first degree of the university study (bachelor´s study) in the same or related field of study.
3. **Health certificates** – the faculty does not require any health certificates and accepts all the applications without any health certificates for all degrees of the university studies.

FORMS OF ADMISSION

1. **No entrance exams, the Faculty will accept:**

- the applicants who have reached the weighted average of their marks up to 2,00 inclusive.

- The secondary grammar school leavers and the secondary vocational school leavers of electrical fields with the average marks in Mathematics and in Physics in their annual secondary school certificates up to 2,00 inclusive.

2. Selection Procedure (entrance exams)

- all the other applicants who do not meet the conditions for being accepted without entrance exams will have to attend the selection procedure (written tests).

Rules of Selection Procedure

The selection procedure for the second (master´s) degree studies consists of the evaluation of the results of the previous undergraduate study (first degree) – the weighted average of marks. The ranking of applicants to be accepted to the master´s degree study is created on the basis of the weighted average of study results.

In the selection procedure the applicants on the waiting list with the lowest serial numbers determined by the evaluating of their study results will be prioritized and accepted until the planned capacity of the respective study programme is reached.

ADMISSION OF FOREIGN STUDENTS

The same terms and conditions of admission are applicable as for the applicants from abroad as for the applicants from Slovakia.

Foreign students who study in a foreign language (i.e. not Slovak), pay the tuition fee as stated in § 92 Subsection 8 (Higher Education Act). The tuition fee is specified by the UNIZA directive for the respective academic year, which can be found on the university website.

Students from abroad who study in the Slovak language do not have to pay the tuition fee. The applicants from the Czech Republic who want to apply and study in Žilina can use the application form available in the Czech Republic. The applicants who do not actively speak Slovak or Czech are required to attend the language training. (It is possible to attend the Slovak for Foreigners courses at UNIZA).

For foreign applicants who were accepted on the basis of international agreements or Slovak government grants, terms and conditions stated in respective agreements are applicable.

HOW TO APPLY

Application forms are to be submitted for individual study programmes.

In case the applicant is interested in more study programmes, it is necessary to apply for each one individually, including payment of the respective admission procedure fees.

Applicants have to fill in the form Prihláška na vysokoškolské štúdium - 2. stupeň or they can also use an electronic application form that can be found on the university website: https://vzdelavanie.uniza.sk/prijimacky/index.php or on the education portal: https:// prihlaskavs.sk/sk/.

Even in case of the electronic application form, it is required to print it, sign it, enclose other required documents including the proof of payment of the fee and send it to the address EF UNIZA within the stipulated deadlines.

The incomplete study application or application sent after the deadline will not be accepted.

In the absence of or a failure of entrance exams, the faculty does not refund the admission fee.

If an applicant wants to take part in entrance exams at more faculties of UNIZA, the application forms have to be sent separately to each faculty and the respective admission procedure fees paid separately to each faculty.

Enclosures for the master´s degree programmes (to be sent with application forms):

- Curriculum Vitae,
- proof of payment of the admission fee,
- information on the results of the previous study:
    - for applicants who are present students or have graduated from the Faculty of Electrical Engineering UNIZA, the information on the study results provides the Department of Studies of the Faculty EF UNIZA and fills it into the application form itself,
    - other applicants shall within their application form enclose the list of subjects and marks obtained during their previous university study validated by the Faculty or University/College that issued the list; by the time of the admission procedure they shall submit the proof of their graduation in the first degree studies (the diploma on the completion of university education of the 1st degree, the certificate on state examination and the Diploma Supplement).

Admission fee:

Send 20 € to:	Žilinská univerzita, Univerzitná 1, 010 26 Žilina
	Bank: Štátna pokladnica
	IBAN: SK74 8180 0000 0070 0026 9917
	const. symbol: 0308
	variable symbol: 10332 - inžinierske štúdium
Payment method:	payment can be paid by bank transfer or postal order to the account above.
Proof of payment:	proof of payment is to be sent to the Faculty with the application form.

With payment of the admission fee from the EU member states, the EES countries, territories that are considered a part of the EU (Treaty of Rome, Section 299) and SEPA countries, it is necessary to use BIC: **SPSRSKBAXXX,** IBAN: **SK74 8180 0000 0070 0026 9917.**

Tuition fees - in accordance with the Higher Education Act, information about the amount of tuition for the respective academic year will be announced on the website of the University of Žilina.

USEFUL DATES

Open Day	Deadline for application form submission	Entrance exams
February, 9, 2017	until May, 31, 2017	June, 20, 2017

ACCOMMODATION

Accommodation facilities of the University of Žilina and the Institute of Aurel Stodola in Liptovský Mikuláš offer accommodation according to their capacity and distance between the student´s residence and the main location of the university or satellite university school place. **Monthly fees for accommodation: 41€ - 51€.**

BOARD

Students can use services of catering facilities at the University of Žilina. **The prices vary from 0,80 € to 2,30 €.**

SCHOLARSHIPS

Students of all study programmes can obtain motivational scholarships (for excellent results or exceptional achievements) in accordance with the stated criteria. **Students of selected study programmes can obtain motivational departmental scholarships in accordance with the stated criteria.**

GRADUATE PROSPECTS

MASTER´S STUDY PROGRAMMES

APPLIED TELEMATICS

(Field of study 5.2.14 Automation

The graduate will acquire education in the areas of design, modelling, application, implementation, inspection, operation, service and maintenance of telematics systems and their components, especially intelligent transport systems, control systems of road and railway tunnels, complex transportation systems and telematics systems in health care.

He/she will gain theoretical knowledge about sets of technical instruments utilised in selected application areas (primarily in the area of transport, additionally in other areas – health care, public administration, etc.) that are required for understanding of telematics systems, their components, modern development trends, position of human factor in these systems as well as knowledge needed for design, control and assessment of these systems.

Software skills: Ethernet, PLC, PHP language, MySQL, HTML language, UML, OCL language, MATLAB, PYTHON language, SCADA/HMI systems.

BIOMEDICAL ENGINEERING

(Field of study 5.2.47 Biomedical Engineering)

The graduate has an overview of modern technical tools of biomedicine, diagnostic, therapeutic and rehabilitation devices, their safe use and the world trend in their development. He/she gains knowledge in theoretical and selected clinical medical disciplines in order to understand the purpose of technical tools´ application, ability to assess functionality and ability to create conditions for qualified communication with medical doctors. He/she has wide knowledge of existing information systems and technologies. He/she gains knowledge in the field of management in health care, bioethics, medical ethics and psychology of management. The graduate can successfully apply in all fields of technical and information provision of health care facilities, in institutes and laboratories of biomedical research and development, in the field of information systems and in technical management of mainly health care operations. He/she will also operate as a managerial employee in the management of health care facilities, as well as a pedagogue and a researcher at universities.

Software skills: C language, HTML, PHP, MATLAB, Simulink, CST-studio suite.

ELECTRIC POWER SYSTEMS

(Field of study 5.2.9 Electrical Engineering)

The graduate has knowledge in the subjects of theoretical base developed in the field of power and applied electronics, programming and utilisation of computer technology, electric drives, electrical traction, electric power systems, management of electricity transmission systems and information systems in electric power systems, he/she has basic knowledge of economic methods for operation of systems, has knowledge of law, psychology and quality management. The graduate is capable of independent projection, constructional and design works, is able to decide on concept issues and management of large organisational units. The graduate may successfully operate in projecting, management, construction and operation of industrial companies, railways, city public transport, in all areas of electric power systems, in projection and research institutes and other organisations of administrative, production, operation or repair character.

Software skills: MATLAB, EMTP-ATP, MODES, GE-PSLF, MS OFFICE, PTOLEMY, SICHR, LABVIEW, EAGLE, ASSEMBLER, VISUAL STUDIO, C++, C, RUPLAN.

ELECTRIC DRIVES

(Field of study 5.2.9 Electrical Engineering)

The graduate has knowledge in the subjects of theoretical base developed in the field of power and applied electronics, programming and utilisation of computer technology, electric drives, electrical traction, electric power systems, management of electricity transmission systems and information systems in electric power systems, he/she has basic knowledge of economic methods for operation of systems, has knowledge of law, psychology and quality management. The graduate is capable of independent projection, constructional and design works, is able to decide on concept issues and management of large organisational units. The graduate may successfully operate in projecting, management, construction and operation of industrial companies, railways, city public transport, in all areas of electric power systems, in projection and research institutes and other organisations of administrative, production, operation or repair character.

Software skills: FEMM, MATLAB, OPERA-3D, COMSOL Multiphysics, MS Office, Code Warrior, EAGLE, Altium Desinger, Visual Studio, Python, Step 7, Micro win, WinCC.

PHOTONICS

(Field of study 5.2.13 Electronics)

The application of graduates in the study programme Photonics has close connection especially with telecommunications, information technologies, medicine, industrial technologies, aviation, military technologies, and civil engineering as well as in consumer goods and entertainment industry.

The graduate in Photonics should be able to creatively, analytically and in detail orientate him/herself in the following technical areas:

design, modification and testing of laser equipment and components for telecommunications, medicine and for other purposes; utilisation and enhancing quality and design of optical fibres technologies; development and testing of optical, photonic or imaging prototypes and equipment; design of electro-optical sensor systems; application of new photonic technologies and equipment in different industrial areas; optical design of standard lighting; definition of commercial, industrial or scientific utilisation of electro-optical applications or their components; creation, analysis and testing of optical fibres lines.

Software skills: Code Block (C, C++), LabVieW.

POWER ELECTRONIC SYSTEMS

(Field of study 5.2.9 Electrical Engineering)

Universality of this study programme guarantees a very wide application of graduates on the labour market. The acquired knowledge may be applied in the most lucrative areas of electrical engineering, machinery and energetic industry, as well as in transportation. In the future their application in the services field is also expected. These are mainly areas of development, design, projection and application of power and control electronic systems, mechatronic and automotive systems, their control nodes, superior control systems, industrial automatic machines and robots and equipment of industrial automation. With regard to significant representation of subjects oriented at programming and development of control software, the graduate may operate successfully in very interesting jobs. The graduates in this study programme may apply for jobs at companies dealing with projects, production and application of power electronic and/or mechatronic systems and industrial automation. They may successfully apply also in specialised machinery companies

working in the fields of automobile industry, chemical and petrochemical industry, gas industry, paper mill and transportation.

Software skills: Freescale ARM, Texas Instruments DSP, ANSI C language, EAGLE, OrCADPSpice, PLECS, LabVieW, Simulink, COMSOL, VHDL ISE Design Suite, dSpace, Texas Instruments Education Modules.

PROCESS CONTROL

(Field of study 5.2.14 Automation

The graduate gains education in the field of analysis and synthesis of automated control and information systems mainly for the area of information processing and transmission in the control of safety critical processes. Graduates in the study programme Process Control specialize in safe control of transportation process with emphasis on intelligent transport systems and signalling systems. They handle support telematic systems and safe control of industrial processes with emphasis on complex technologies, safe critical production applications, intelligent buildings, security systems for personal and property protection, security of information systems and modern computer networks.

Software skills: Ethernet, PLC, Jazyk PHP, MySQL, Jazyk HTML, UML, Jazyk OCL, MATLAB, Jazyk PYTHON, SCADA/HMI systems.

TELECOMMUNICATIONS AND RADIO-COMMUNICATIONS ENGINEERING

(Field of study 5.2.15 Telecommunications)

The education is focused on the issues of telecommunication and information networks with direction on digital communication networks, i.e. optic and metallic systems and networks, intelligent networks, terrestrial mobile networks, microwave radio and satellite communication, network management, architecture of signalling systems and communication protocols, applications of multimedia and multimedia services, reliability and diagnostics of systems and networks. The graduate will successfully apply as a creative employee in research, technical development, telecommunication design and management, as well as in all fields of applications of telecommunication, radio-communication and information and communication technologies and services.

Software skills: ADOBE, HTML, PHP, MySQL, Blender, 3dMax, Cinema 4D, Android, JAVA, Microsoft Direct3D, OpenGL, MATLAB, After Effect, ZScan, Geomagic, MS Office, MATLAB, SIMULINK, from SPICE family – simulation programs focused on analyses and syntheses of electronic circuits, ASEMBLER.

MULTIMEDIA ENGINEERING

(Field of study 5.2.15 Telecommunications)

Multimedia engineering

The student of the Multimedia Engineering study programme in the Telecommunications field of study will enhance his/her knowledge to the necessary extent in the subjects of theoretical base of the field of study and gain detailed knowledge of media communication, networks and services, their convergences and also their securities. By selection of optional subjects he/she may more closely specialise in the field of processing image, graphic or audio information. A significant element of knowledge is understanding of web technologies, mainly as far as the design of web services is concerned, knowledge of 2D and 3D graphic and animation systems and applications and digital processing of the multimedia contents. The graduate in the master´s degree study will be able to specialise and to adapt to different levels depending on the needs of practice, research and development, as well as the ability of permanent knowledge enhancement in the field. The students will obtain knowledge and skills that enable them to work independently as well as in teams when solving projects integrating the technical and creative level into one, or even to lead such teams.

Software skills: ADOBE, HTML, PHP, MySQL, Blender, 3dMax, Cinema 4D, Android, JAVA, Microsoft Direct3D, OpenGL, After Effect, ZScan, Geomagic, MS Office, MATLAB, SIMULINK, from SPICE family – simulation programs oriented at analyses and syntheses of electronic circuits.