



FACULTY OF ELECTRICAL ENGINEERING AND INFORMATION TECHNOLOGY DOCTORAL DEGREE STUDY

UNIVERSITY OF ŽILINA Faculty of Electrical Engineering and Information Technology

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All the questions concerning your studies will be attended at the Department of Studies:

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ACCREDITED STUDY PROGRAMMES OFFERED FOR THE ACADEMIC YEAR 2019/2020

DOCTORAL DEGREE STUDY PROGRAMMES	
FULL-TIME STUDY	PART-TIME STUDY**
LENGTH OF STUDY 3 YEARS	LENGTH OF STUDY 5 YEARS
Electric Power Systems *	Electric Power Systems *
Electro-technologies and Materials *	Electro-technologies and Materials *
Process Control *	Process Control *
Power Electrical Engineering *	Power Electrical Engineering *
Telecommunications *	Telecommunications *
Theory of Electrical Engineering *	Theory of Electrical Engineering *
<i>* study programme is also accredited in the English language</i>	
<i>** standard tuition fee for part-time study programmes is 1 000 € for an academic year</i>	

Detailed information on particular study programmes

- syllabus,
- course information sheets

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



EXPECTED NUMBER OF ACCEPTED APPLICANTS TO THE FIRST YEAR

DOCTORAL DEGREE STUDY		
STUDY PROGRAMME / FIELD OF STUDY	PLANNED CAPACITY	
	FULL-TIME	PART-TIME
Electric Power Systems / Electric Power Systems	3	2
Electro-technologies and Materials / Electro-technologies and Materials	3	2
Process Control / Automation	3	2
Power Electrical Engineering / Power Electrical Engineering	3	2
Telecommunications / Telecommunications	3	2
Theory of Electrical Engineering / Theory of Electrical Engineering	3	2
TOTAL NUMBER	18	12



TERMS AND CONDITIONS OF ADMISSION

1. **The fundamental prerequisite** of being accepted to the doctoral study (the third degree study programme) is the full completion of the second degree of the university study (Higher Education Act, n. 131/2002 Coll.).
2. **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

Selection Procedure

Selection procedure of the applicant begins with the delivery of the third level study application form to the Faculty of Electrical Engineering and Information Technologies UNIZA. Applicants for the doctoral degree studies apply for listed topics. Selection of applicants will be carried out in the form of an entrance examination.

Rules of Selection Procedure

All applicants will be invited in writing. The following will be considered at the entrance examination:

- results of the previous (present) study,
- language competence,
- present publications of the applicant,
- other activities of the applicant in the given field (Student Scientific Activity, practice ...),
- prerequisites for independent scientific work of the applicant in the issues of the study programme in the form of a debate on the chosen topic.



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 and can be found on the university website.

Students from abroad who study in the Slovak language do not have to pay the tuition fee. Applicants from the Czech Republic can use the application form available in the Czech Republic. 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 intergovernmental agreements, bilateral agreements or Slovak government grants, terms and conditions stated in respective documents 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 - 3. stupeň that can be found on the website of the Faculty of Electrical Engineering and Information Technologies: (<http://fel.uniza.sk/> in the section Uchádzači o štúdium) or on the university website <https://vzdelavanie.uniza.sk/prijimacky/index.php> or on the education portal: <https://prihlaskavs.sk/sk/>. Even in case of 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 of the Faculty of Electrical Engineering and Information Technologies UNIZA within the stipulated deadlines.

Incomplete application form or application form sent after the deadline will not be accepted.

In the absence or 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 doctoral degree programmes (to be sent with application forms):

- Curriculum Vitae,
- certified copies of documents on completion of 2nd degree education (university diploma, state examination certificate and Diploma Supplement) - it does not apply to graduates of the Faculty of Electrical Engineering and Information Technologies UNIZA,
- a list of published papers or other professional activity,
- the proof of payment of the admission fee.

Admission fee:

Send **20 €** to:

Žilinská univerzita v Žiline, Univerzitná 1, 010 26 Žilina

Bank: Štátna pokladnica

IBAN: SK74 8180 0000 0070 0026 9917

const. symbol: 0308

variable symbol: 10333 - doctoral study

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.

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.

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**.



USEFUL DATES

Deadline for submitting the application form	Entrance exams
until June, 10, 2019	June, 27, 2019



ACCOMMODATION

Accommodation facilities of the University of Žilina provide accommodation according to their capacity and distance between the student's residence and the main location of the university.

Student accommodation facilities cost approx.: **70 € - 140 € per month**.



BOARD

Students can use services of catering facilities of the University of Žilina in Žilina. **Price for food: 9 € per day**.



SCHOLARSHIPS

Full time students of the doctoral degree study programmes are granted a scholarship pursuant to Higher Education Act, n. 131/2002 Coll. (On universities and on amendments to certain laws), §54 Subsection 18.



GRADUATE PROSPECTS

DOCTORAL STUDY PROGRAMMES

ELECTRIC POWER SYSTEMS

(Field of study 5.2.30 Electric Power Systems)

The doctoral study in the field of Electric Power Systems is intended for graduates of the second degree of university study (Engineer/Master/Master of Science) who tend to have an original solution to engineering and scientific problems in the field of electric power systems. To solve these tasks, a doctoral student uses the latest knowledge of modern analytical and numerical methods, methods of mathematical and physical modelling, informatics, measurements of electric and non-electric variables, microelectronics, electric power systems, automatic and discrete control up to the level of artificial intelligence, including the implementation of control by corresponding processors, as well as knowledge of other disciplines. Prerequisite for successful completion of the doctoral degree study is the ability of doctoral student to think abstractly and his/her ability to apply and implement acquired knowledge when solving technical problems. Doctoral student will learn to correctly characterize and understand physical phenomena and experimental knowledge of these phenomena, to look for adequate models and to implement new applications in the specific disciplines, science, research and practice. During his/her doctoral studies, doctoral student acquires comprehensive theoretical knowledge, experimental skills and practical experience. He/she is familiar with the methodology of scientific work and is prepared for independent scientific work.

ELECTRO-TECHNOLOGIES AND MATERIALS

(Field of study 5.2.12 Electro-technologies and Materials)

Graduates in the doctoral degree study programme in the field of Electro-technologies and Materials know scientific methods of evaluation of material structures and systems in terms of processing technology, structure, durability, reliability, intermediate and final diagnostics and control, as well as in terms of determination of basic physical properties of substrate materials and final structures. Such comprehensive knowledge will enable graduate to use it in a wide range of manufacturing technologies in electronics, both in their design and in the organization and optimization of individual technological procedures.

Graduate has acquired abilities to predict changes of material properties in various conditions of their use as well as in terms of utilising various technological procedures in production of electrical components, structures, systems and equipment. Graduate of the third degree of university study in the field of study Electro-technologies and Materials acquired deep theoretical and methodological knowledge of technologies and materials used in electrical and electronics industry, the properties of materials and processes in them that are the subject of scientific research or development at the level of the current state of research in the world.

PROCESS CONTROL

(Field of study 5.2.14 Automation)

The doctoral study in the field of Process Control is intended for graduates of the second degree of university study (Engineer/Master/Master of Science) who tend to have an original solution to engineering and scientific problems in the field of management and control of transport and technological processes. To solve these tasks, a doctoral student uses the latest knowledge of modern analytical and numerical methods, methods of mathematical and physical modelling, informatics, measurements of electric and non-electric variables, microelectronics, electric power systems, automatic and discrete control up to the level of artificial intelligence, including the implementation of control by corresponding processors, as well as knowledge of other disciplines. Prerequisite for successful completion of the doctoral degree study is the ability of doctoral student to think abstractly and his/her ability to apply and implement acquired knowledge when solving technical problems. Graduate of doctoral study in the field of study Automation acquired knowledge based on the current state of scientific knowledge and by his/her own creative work he/she will contribute to the development of this knowledge as well as to new findings in this field. The aim of the doctoral study is to educate such a specialist who will not only possess complex knowledge but will be able to enrich the science and knowledge in the field of process control.

Graduate acquired deep theoretical and methodological knowledge and practical experience in the main areas of process control (including processes related to security) such as the theory of automatic control, system theory, process control, control systems, logic and event systems and also in the field of secure communication and information processing.

POWER ELECTRICAL ENGINEERING

(Field of study 5.2.11 Power Electrical Engineering)

The doctoral study in the field of Power Electrical Engineering is intended for graduates of the second degree of university study (Engineer/Master/Master of Science) who tend to have an original solution to engineering and scientific problems in the field of power electrical engineering, i.e. electric drives, power electronics, electric traction, electrical machinery and equipment and traction electric power systems. To solve these tasks, a doctoral student uses the latest knowledge of

modern analytical and numerical methods, methods of mathematical and physical modelling, informatics, measurements of electric and non-electric variables, microelectronics, electric power systems, automatic and discrete control up to the level of artificial intelligence, including the implementation of control by corresponding processors, as well as knowledge of other disciplines. Prerequisite for successful completion of the doctoral degree study is the ability of doctoral student to think abstractly and his/her ability to apply and implement acquired knowledge when solving technical problems. Doctoral student will learn to correctly characterize and understand physical phenomena and experimental knowledge of these phenomena, to look for adequate models and to implement new applications in the specific disciplines, science, research and practice. During his/her doctoral studies doctoral student acquires comprehensive theoretical knowledge, experimental skills as well as practical experience. He/she is familiar with the methodology of scientific work and is prepared for independent scientific work. Graduate in the doctoral study in the field of Power Electrical Engineering acquired knowledge based on the current state of scientific knowledge and by his/her own creative work he/she will contribute to the development of this knowledge as well as to new findings in this field.

TELECOMMUNICATIONS

(Field of study 5.2.15 Telecommunications)

The aim of the doctoral degree study in the field of telecommunications is to prepare qualified professionals focused on the development, implementation, management and operation of complex telecommunication systems of new generations that have virtually penetrated into all spheres of human activity. The study programme follows the study under previous accreditation in the field of doctoral degree study telecommunications. Scientific and research activities of the Department of Telecommunications and Multimedia of the Faculty of Electrical Engineering and Information Technologies are oriented in the field of telecommunications on optical communication systems, broadband networks, mobile radio networks and digital signal processing. PhD graduate in the field of Telecommunications acquired deep theoretical and methodological knowledge and practical experience in key areas of telecommunications in the current state of research in the world. He/she acquired principles of individual and team research work, research exploration, scientific formulation of problems, solutions of complex scientific problems and presentation of scientific results. He/she is able to analyse and solve complex and non-standard tasks in the field of telecommunications and to provide original, new solutions, to apply acquired knowledge in practice in a new, creative way. He/she is able to apply the acquired knowledge in various fields of science, research, industry and services in the public as well as in private sectors. He/she is able to follow the latest scientific and research trends in telecommunications and to add and update his/her knowledge through lifelong learning process.

THEORY OF ELECTRICAL ENGINEERING

(Field of study 5.2.10 Theory of Electrical Engineering)

The doctoral study in the field of Theory of Electrical Engineering is intended for graduates of the second degree of university study who tend to have an original solution to engineering and scientific problems in the field of Theory of Electrical Engineering and its applications. To solve these tasks, a doctoral student uses the latest knowledge of modern analytical and numerical methods, methods of mathematical and physical modelling, informatics, measurements of electric and non-electric variables, electronics, interdisciplinary methodologies, biomedical applications, as well as knowledge of other disciplines.

Prerequisite for successful completion of the doctoral degree study is the ability of doctoral student to think abstractly and his/her ability to apply and implement acquired knowledge when solving technical problems. Doctoral student will learn to correctly characterize and understand physical phenomena and experimental knowledge of these phenomena, to look for adequate models and to implement new applications in the specific disciplines, science, research and practice. During his/her doctoral studies, doctoral student acquires comprehensive theoretical knowledge, experimental skills and practical experience. He/she is familiar with the methodology of scientific work and is prepared for independent scientific work.