



UNIVERSITY OF ŽILINA

Faculty of Electrical Engineering

FACULTY OF ELECTRICAL ENGINEERING

DOCTORAL DEGREE STUDY

CONTACT

Faculty of Electrical Engineering / Elektrotechnická fakulta

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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

Institute of Aurel Stodola in Liptovský Mikuláš

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ACCREDITED STUDY PROGRAMMES FOR THE ACADEMIC YEAR 2017/2018

DOCTORAL DEGREE STUDY PROGRAMMES	
FULL-TIME STUDY LENGTH OF STUDY 3 YEARS	PART-TIME STUDY ** LENGTH OF STUDY 5 YEARS
Electric Power Systems *	Electric Power Systems *
Electrotechnologies and Materials *	Electrotechnologies and Materials *
Process Control *	Process Control *
Power Electrical Engineering *	Power Electrical Engineering *
Telecommunications *	Telecommunications *
Theory of Electrical Engineering *	Theory of Electrical Engineering *
* study programme is accredited also in the English language	
** standard tuition fee for part-time study programmes is 1.000 € for an academic year	

Detailed information on particular study programmes

- syllabus,
- course information sheets

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
Electrotechnologies 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 / Theoretical / Theory of Electrical Engineering	3	2
Total number	18	12



TERMS AND CONDITIONS OF ADMISSION

1. **The fundamental prerequisite of** being accepted to the postgraduate study program (the third degree) 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

- The admission procedure begins with the delivery of the third level studies application form (Prihláška na vysokoškolské štúdium - 3. stupeň) to the Department of Studies of the Faculty of Electrical Engineering UNIZA. Applicants for the doctoral degree studies apply for pre-listed topics of dissertation theses. Selection of the applicants takes place in the form of an entrance examination.

Rules of Selection Procedure

All applicants will be invited in writing.

At the entrance examination there shall be considered:

- Applicant's results of the previous (present) study,
- Foreign language competence,
- Present publications of the applicant,
- Other professional activities in the field (subject competitions at secondary schools, internship, traineeship, etc.)
- Applicant's eligibility for independent scientific work in the issues of the study programme through a debate on the chosen topic of the dissertation.



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 - 3. 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 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.

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

In the absence of 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 documents for the doctoral degree programmes (to be sent with application forms):

- Curriculum Vitae,
- The certified copies of the highest level of education (the diploma on completion of university education of the 2nd degree, the certificate on state examination, the Diploma Supplement),
- a list of published technical and scientific papers or other professional activities,
- the proof of payment of the admission fee.

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: 10333 - doktorandské 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.

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 application form submission	Entrance exams
until June, 28, 2017	July, 12, 2017



ACCOMMODATION

All the students of the first year of the master's degree studies are entitled to accommodation in accordance with the internal regulations of the university. **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

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 designed for graduates of the second degree of university study (Master/Master of Science) who tend to the original solutions of engineering and scientific problems in the electrical engineering/electric power systems. For solving of these challenges the doctoral student utilises the latest findings 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. Prerequisites for successful completion of the doctoral degree studies are the PhD student's ability of abstract thinking and his/her ability to apply and implement acquired knowledge when solving technical problems. The PhD student learns how to properly characterize and understand physical phenomena and experimental observations on them; he/she searches for their adequate models and is able to implement new applications in the above specified disciplines in science, research and practice. During his/her doctoral studies the PhD student acquires comprehensive theoretical knowledge, experimental skills and practical experience. He/she masters methodology of scientific work and is prepared for independent scientific work.

ELECTROTECHNOLOGIES AND MATERIALS

(Field of study 5.2.12 Electrotechnologies and Materials)

The graduates in the doctoral degree study in the field of Electrotechnologies and Materials master scientific methods of evaluation of material structures and systems in terms of process technology, structure, durability, reliability, intermediate and final diagnostics and control, both in terms of determination their basic physical properties of the substrate material and their final structure. The graduate is able to use the obtained in-depth knowledge in a wide range of production technologies in electronics, in the design, as well as in the organization and optimisation of various technological processes.

The graduate acquires 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.

The graduates of the third degree of university studies in the field of study Electrotechnologies and Materials acquire deep theoretical and methodological knowledge of technologies and materials applied in electrical and electronics industry, of properties of materials and processes running in them that create the object of the scientific research and development at the state-of-the-art level of scientific research in the world.

PROCESS CONTROL

(Field of study 5.2.14 Automation)

The doctoral study in the field of Automation is designed for graduates of the second degree of university study (Master/Master of Science) who tend to the original solutions of engineering and scientific problems in management and control of transport and technological processes. For solving of these challenges the doctoral student utilises the latest findings 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. Prerequisites for successful completion of the doctoral degree studies are the PhD student's ability of abstract thinking and his/her ability to apply and implement acquired knowledge when solving technical problems. The graduates in the field of study Automation gain knowledge based on the state-of-the-art scientific knowledge in the field and by their own creative work they will contribute to their development as well as to new findings in the respective 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.

The graduates acquire in-depth 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 designed for graduates of the second degree of university study (Master/Master of Science) who tend to the original solutions of 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. For solving of these challenges the doctoral student utilises the latest findings 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. Prerequisites for successful completion of the doctoral degree studies are the PhD student's ability of abstract thinking and his/her ability to apply and implement acquired knowledge when solving technical problems. The PhD student learns how to properly characterize and understand physical phenomena and experimental observations on

them; he/she searches for their adequate models and is able to implement new applications in the above specified disciplines in science, research and practice. During his/her doctoral studies PhD student acquires comprehensive theoretical knowledge, experimental skills as well as practical experience. He/she masters methodology of scientific work and is prepared for independent scientific work. The graduates in the doctoral study in Power Electrical Engineering acquire knowledge based on the state-of-the-art scientific knowledge in the field and by their own creative work they will contribute to their development as well as to new findings in the respective field.

TELECOMMUNICATIONS

(Field of study 5.2.15 Telecommunications)

The aim of the doctoral degree studies in the field of telecommunications is to prepare skilled professionals focused on the development, implementation, management and operation of complex telecommunication systems of the new generations that virtually permeated all spheres of human activity. The study programme is built on the previously accredited field of study Telecommunications / doctoral degree study programme. Research activities of the Department of Telecommunications and Multimedia of the Faculty of Electrical Engineering UNIZA aim in the field of telecommunications at optical communication systems, broadband networks, mobile radio networks and digital signal processing. The PhD graduates in the field of Telecommunications gain deep theoretical and methodological knowledge and practical experience in key areas of telecommunications at the current state of research in the world, acquire principles of individual and team research work, research exploration, scientific formulation of problems, solutions of complex scientific problems and presentation of scientific results. They are 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. They are able to apply the acquired knowledge in various fields of science, research, industry and services in the public as well as in private sectors. The graduates are capable of following the latest scientific and research trends in telecommunications and of adding and updating their 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 designed for graduates of the second degree of university study (Master/Master of Science) who tend to the original solutions of engineering and scientific problems in the field of electrical engineering and its applications. For solving of these challenges the doctoral student utilises the latest findings of modern analytical and numerical methods, methods of mathematical and physical modelling, informatics, measurements of electric and non-electric variables, interdisciplinary methodologies, biomedical applications, as well as knowledge of other disciplines.

Prerequisites for successful completion of the doctoral degree studies are the PhD student's ability of abstract thinking and his/her ability to apply and implement acquired knowledge when solving technical problems. The PhD student learns how to properly characterize and understand physical phenomena and experimental observations on them; he/she searches for their adequate models and is able to implement new applications in the above specified disciplines in science, research and practice. During his/her doctoral studies the PhD student acquires comprehensive theoretical knowledge, experimental skills as well as practical experience. He/she masters methodology of scientific work and is prepared for independent scientific work.