# UNIVERSITY OF ŽILINA
# Faculty of Electrical Engineering and Information Technology

FACULTY OF ELECTRICAL ENGINEERING AND INFORMATION TECHNOLOGY

BACHELOR´S DEGREE STUDY

## CONTACT

**University of Žilina (UNIZA)**
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**All the questions concerning your study you can direct to the Department of Studies:**
Tel.: 041/513 20 63, 20 64

**Coordinator for work with students with special needs:**
Vice–Dean for Education of the Faculty of Electrical Engineering and Information Technology
Tel.: 041/513 20 57

## ACCREDITED STUDY PROGRAMMES OFFERED FOR THE ACADEMIC YEAR 2021/2022

| BACHELOR´S DEGREE STUDY PROGRAMMES | |
|---|---|
| **FULL-TIME STUDY**<br>LENGTH OF STUDY 3 YEARS | **PART-TIME STUDY**<br>LENGTH OF STUDY 4 YEARS |
| Control Engineering | - |
| Autotronics | - |
| Biomedical Engineering | - |
| Electro-optics | - |
| Electrical Engineering | - |
| Communication and Information Technologies | - |
| Multimedia Technologies | - |

Note.:

- In the study programme Electrical Engineering, by the selection of optional courses, students may specialise in one of the following areas: Car Electrical Engineering, Electric Drives, Power Engineering, Power Electronic Systems and Mechatronic Systems.
- For the academic year 2021/2022, the Faculty does not offer education in English.

**Detailed information about 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

| BACHELOR´S DEGREE STUDY | | |
|---|---|---|
| **STUDY PROGRAMME / FIELD OF STUDY** | **PLANNED CAPACITY** | |
| | **FULL-TIME** | **PART-TIME** |
| **Control Engineering** / Cybernetics | 80 | - |
| **Autotronics** / Electrical Engineering | 50 | - |
| **Biomedical Engineering** / Electrical Engineering | 50 | - |
| **Electrical Engineering** / Electrical Engineering | 160 | - |
| **Electro-optics** / Electrical Engineering | 30 | - |
| **Multimedia Technologies** / Informatics | 100 | - |
| **Communication and Information Technologies** / Informatics | 210 | - |
| **TOTAL** | 680 | - |

In case of a low number of applicants for the full-time study, the faculty retains the right not to open a study programme and to offer applicants another study programme in the same or related field of study.
In case of a low number of applicants for the part-time study, the Faculty retains the right not to open a study programme.

# TERMS AND CONDITIONS OF ADMISSION

**Basic condition of admission**

The basic condition for the admission to the bachelor´s degree study (first degree study programme) at the Faculty of Electrical Engineering and Information Technology of the University of Žilina is the full completion of secondary education or full secondary vocational education (Higher Education Act, n.131/2002 Coll.). In case of a foreign applicant or a student who has completed secondary education abroad, the education is comparable with an education completed by a school leaving examination in the Slovak Republic. Applicant who has completed secondary education abroad will submit along with the application form or more precisely no later than the date of enrolment a document on completion of secondary education recognized by a relevant institution in the Slovak Republic.
The Faculty of Electrical Engineering and Information Technology UNIZA will not accept applicants who have already unsuccessfully studied two or more times at the Faculty of Electrical Engineering and Information Technology UNIZA in any bachelor's degree study programme.
Written and oral command of Slovak language or Czech language is required for study at the Faculty. Applicants who have completed secondary education abroad (except the Czech Republic) and apply for study in the Slovak language will submit along with the application form or more precisely no later than the date of enrolment a certificate/document of the level of knowledge of the Slovak language.

**Other conditions of admission**

**1. No entrance exams**
**Applicants will be admitted to the study without entrance exams** (except for applicants for the study programme Multimedia Technologies*)* if they meet the legal conditions for bachelor's study (see Basic condition for admission). If the applicant has submitted all the required enclosures to the application form, the admission procedure takes place without the personal participation of the applicants.

**2. Entrance exam for the study programme Multimedia Technologies**
Applicants for the study programme Multimedia Technologies will undergo entrance exam consisting of three parts:
- presentation of the applicant's motivation to study the study programme,
- evaluations of the achieved study results of the applicant and his/her general overview,
- presentation of multimedia activities and secondary school knowledge of the applicant, including clarification of the procedures and techniques used.

**3. Language competence**
Written and oral command of Slovak language or Czech language is required for study at the Faculty. Applicants who have completed secondary education abroad (except the Czech Republic) and apply for study in the Slovak language will submit along with the application form or more precisely no later than the date of enrolment a certificate/document of the level of knowledge of the Slovak language.

# ADMISSION OF FOREIGN STUDENTS

The basic and other 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. Foreign students who study in the Slovak language do not have to pay the tuition fee. Applicants from the Czech Republic who want to apply and study in Žilina can use the application form valid 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 language 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.

# APPLICATION FORM

**Application forms are to be submitted for individual study programmes.**
**In case the applicant is interested in more study programmes, it is necessary to submit the application form for each study programme separately with the payment of the respective fee.**
Applicants have to fill in 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/.
Concerning the application form, it is necessary to enclose all the required documents and send it electronically or by post to the address of the Faculty of Electrical Engineering and Information Technology UNIZA within the stipulated deadlines.
In case of an incomplete application form, applicants will be requested to complete it.
In case of non-participation in the admission procedure or a failure in the admission procedure, the Faculty does not refund the admission procedure fee.
If the applicant wants to take part in the admission procedure at several faculties of UNIZA, the application forms must be submitted separately to each faculty with the payment of the relevant fee.

**Enclosures for the bachelor´s degree study programmes (to be sent with application forms):**
1. Curriculum Vitae,
2. proof of payment of the admission fee,
3. copies of the year-end reports from secondary school.

Upon completion of the school-leaving examination, applicants shall provide a certified copy of the school-leaving examination certificate and the year-end report from the final year of secondary school study by a deadline, which will be announced to each applicant in writing.

**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: | 10331 - bakalárske 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 fee for the relevant academic year will be published on the website of the University of Žilina within the stipulated deadlines.

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

| Open Day | Deadline for submitting the application form | Entrance exams |
|---|---|---|
| February, 4, 2021 | until March, 31, 2021 | June, 22, 2021 |

# ACCOMMODATION

The accommodation facilities of the University of Žilina provide accommodation according to the accommodation capacity, taking into account the distance between the student´s permanent residence and the seat of the University. Accommodation is provided in modern renovated dormitories directly on the campus of the University of Žilina in Veľký Diel - no need to travel for classes. More information at www.iklub.sk. **Accommodation fee: € 54 - € 61 / month**.

# BOARD

Students can use the services of the catering facility of the University of Žilina located directly on the University campus. **Price for food: € 1.10 – € 3.20**

# SCHOLARSHIPS

Students of all study programmes can obtain motivational scholarships (for excellent results or exceptional achievements) in accordance with the stated criteria up to the amount of € 1,200. **Students of all study programmes can obtain motivational departmental scholarships in accordance with the stated criteria.** In case of an unfavourable social situation, the student can apply for a social scholarship during the study.

# FOLLOW-UP STUDY AFTER COMPLETION OF BACHELOR'S DEGREE STUDY

There is a possibility for continuing bachelor´s degree study within follow-up master´s (engineer) degree study programmes at the Faculty of Electrical Engineering and Information Technology UNIZA in the academic year 2021/2022 – Applied Telematics, Biomedical Engineering, Electric Drives, Electrical Engineering, Photonics, Multimedia Engineering, Process Control, Telecommunications and Radio-communications Engineering, Power Electronic Systems (respective information about particular study programmes can be found on the university website). After completing the bachelor's degree, it is necessary to verify the current state of the offer of study programmes in a particular academic year.

# GRADUATE PROSPECTS

**BACHELOR´S DEGREE STUDY PROGRAMMES**

**CONTROL ENGINEERING**
**(Field of study 2647 Cybernetics)**
Graduate acquired education in the field of automation and process control with the support of information and communication technologies. He/she has knowledge and practical experience in application of safety-critical control and communication systems, implemented mainly on the basis of PLCs and industrial networks. He/she will be able to work in the operation of control and information systems at the process and operative level. Theoretical knowledge acquired during the bachelor study will create good prerequisites for further education, either within the further forms of university study or within lifelong education.
Software skills: C language, C++, MATLAB, PLC, ATMEL, MS ACCESS, HTML, CSS, Tia Portal.

**AUTOTRONICS**

**(Field of study 2675 Electrical Engineering)**

Graduate acquired basic and general knowledge required in a wide range of electrical engineering specializations, especially in the field of automobile electronics, hybrid vehicles and electric vehicles. Gained knowledge is needed for the second degree study programmes carried out directly in this field of study or in related fields of study. If the graduate does not continue in the second degree of the university study, he/she will acquire the required wide professional profile and he/she is able to adapt in various technical or other operations. Graduates of Autotronics study programme should be professionals able to identify any electronic faults in vehicles. They can work mainly in car services and repair shops, in modern car selling shops and in education institutions. Software skills: C language, C++, MATLAB, Simulink, CodeWarrior, CodeComposer, Asembler, AVR Studio, Vissim, PLECS.

**BIOMEDICAL ENGINEERING**

**(Field of study 2675 Electrical Engineering)**

Graduate acquired knowledge from the subjects of theoretical and technical basis as well as from the theoretical basis of medical disciplines with emphasis on the structure and functioning of biological objects, biochemical, physiological and pathophysiological processes. He/she gained basic knowledge of medical technology and its applications, modern tools of biomedicine, the principles of their operation, conditions of operation and their safe use for diagnostic and treatment purposes. He/she is able to assess the functionality of technical and computer aided equipment in the conditions of health care facilities or other facilities and laboratories and at the same time is able to lead qualified communication with healthcare staff. He/she can work as an expert in medical and biological laboratories, in the operation of biomedical technology, in business and service organisations. Software skills: C language, MATLAB, EAGLE.

**ELECTRO-OPTICS**

**(Field of study 2675 Electrical Engineering)**

Electro-optics is a field at the interface of physical and several technical sciences, which is mainly connected to optics and electronics. It is a young field that has already found a firm place in the study programmes at many universities around the world. Graduates of the bachelor's degree study programme Electro-optics are able to continue their study in the engineering study programme Photonics that has a close connection and thus the application especially in telecommunications, information technology, medicine, industrial technologies, aviation, military technology, construction industry, but it is also used in consumer devices and entertainment industry. Graduates of Electro-optics should be able to orientate themselves in the following areas: geometric optics; optical radiation properties; principles of fibre optics; electronics and microprocessors; principles of nanotechnologies; principles of photonics; analysis and testing of fibre optic lines; testing of laser devices and components for telecommunications, medicine and other purposes; testing of optical, photonic or imaging prototypes and devices; determination of commercial, industrial or scientific use of electro-optical applications or elements.

**ELECTRICAL ENGINEERING**

**(Field of study 2675 Electrical Engineering)**

Graduate acquired knowledge from the subjects of theoretical basis applied in the fields of power electronics, the use of applied microprocessor technology and programming, electric drives, electrical traction, power engineering and mechatronics. He/she gained knowledge in the field of quality and reliability management in a production company, marketing and trade, electrical standards, law and legal regulations related to the field of study. Graduates may further specialise in the field of automobile electrical engineering, electrical traction, electric drives, power engineering, power electronic systems and mechatronics systems. Graduates obtained theoretical knowledge and practical skills in order to master the principles, installations, operations, functions, service and repairs of electrical products, devices and equipment in accordance with international standards. He/she can work in all fields of power engineering, in the field of mechatronics, robotics, applied microprocessor technology, electronics, optoelectronics, power electronics, computer design and construction in organisations of administrative, production, operational or repair nature. Software skills: MS Office, MATLAB, SIMULINK, FEMM, MOTORSOLVE, SICHR, DIALUX, DSPACE, CODE WARIOR, LABWIEV, EMPT- ATP, MODES, GE-PSLF, RUPLAN, RS Logix, RS Link, RS View, Asembler, AVR Studio, EAGLE, OrCAD-PSPICE, PLECS.

**COMMUNICATION AND INFORMATION TECHNOLOGIES**

**(Field of study 2508 Informatics)**

Graduates of the bachelor's degree study programme - Communication and Information Technologies in the field of study - Informatics will acquire the ability to specialize and adapt to the latest and future needs and requirements of practice in manufacturing companies of network operators and in service companies in the field of electronic communications. They will be prepared for a continuous deepening of knowledge from the field. They can work as qualified workers for the operation and design of technology of communication networks and services and will be able to solve the tasks of practice in team. They can work at the positions of executives, operators of electronic communications, network specialists in enterprises and institutions and developers of communication services and in companies developing technologies of Industry 4.0. Graduates can work as designers, system designers or specialists for various areas of ICT.

**MULTIMEDIA TECHNOLOGIES**
**(Field of study 2508 Informatics)**
Graduate acquired knowledge of acquisition, processing and presentation of digital signal at the appropriate technical, aesthetical, ethical and artistic levels. The synergy of technical and artistic education will make the graduate a specialist in creating multimedia presentations. Graduate gained knowledge and practical experience in working with the visual and the audio element of multimedia that predetermines him/her for work in organisations focused on information technologies, advertising and counselling activities, in public administration institutions, in studios producing multimedia products.
Software skills: C language, C++, MATLAB, Java, JSP, Blender, Cinema 4D, Adobe Premiere, Adobe Audition, Adobe Photoshop, Adobe Illustrator, Adobe InDesign, Protools, HW, SQL, PSpice, Microsim, Corel Draw, QuarkxPress, LaTex.

## ADDITIONAL EDUCATIONAL ACTIVITIES

In addition to education in a selected study programme, the Faculty of Electrical Engineering and Information Technology enables its students to obtain the **QUALITY MANAGER** certificate which allows them to significantly extend their application in practice, especially in production-oriented companies. During the study, students complete professional experience, thereby directly obtain practical experience in quality management.

The Faculty offers its students the opportunity to obtain the CLAD – Certified LabVIEW Associate Developer certificate from National Instruments company through the **LabVIEW Academy** which operates at our faculty. This certificate represents an excellent entry point for job seekers in companies dealing with automation, measurement, testing, industrial production or computer vision in LabVIEW.

The Faculty also has the **Cisco Academy** where students can take advantage of free preparation to obtain Cisco Certified Network Associate industry certificates.

The Faculty, together with its industrial partners, offers students **free study** of **professional English and German**, enabling them to expand their language skills in the field they study.

The Faculty of Electrical Engineering and Information Technology offers students **paid internships** with their industrial partners during their study. During their study, students are involved in solving real problems from the environment of partner companies.

The result of interdisciplinary education by means of top teachers is up to **96 %** employability of graduates in the field they studied, with an **average starting salary** of **€ 1,526**.

Upon successful completion of the bachelor's degree study, the Faculty of Electrical Engineering and Information Technology offers students engineering study in the **"Double degree"** programme with the University of Catania (UNICA) in Sicily, Italy, in the field of study program "Electrical Engineering". The joint study programme is designed and compiled on the basis of the experience of professors from both universities, as well as professionals from practice, so that students receive a comprehensive education during their study at both universities.

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