



# UNIVERSITY OF ŽILINA IN ŽILINA

## Faculty of Mechanical Engineering

### FACULTY OF MECHANICAL ENGINEERING

### BACHELOR'S DEGREE STUDY

#### CONTACT

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### ACCREDITED STUDY PROGRAMMES OFFERED FOR THE ACADEMIC YEAR 2020/2021

BACHELOR'S DEGREE STUDY PROGRAMMES	
FULL-TIME STUDY LENGTH OF STUDY 3 YEARS	PART-TIME STUDY * LENGTH OF STUDY 4 YEARS
Computer Design and Simulation	-
Mechanical Engineering Technologies	-
Energy and Environmental Technology	-
Industrial Engineering	-
Vehicles and Engines	-
Materials and Technologies in Automobile Production	-
-	Mechanical Engineering

*\* standard tuition fee for part-time study programmes is € 500 for an academic year*

#### 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
<b>Computer Design and Simulation</b> / Mechanical Engineering	90	-
<b>Mechanical Engineering Technologies</b> / Mechanical Engineering	90	-
<b>Energy and Environmental Technology</b> / Mechanical Engineering	40	-
<b>Industrial Engineering</b> / Mechanical Engineering	75	-
<b>Vehicles and Engines</b> / Mechanical Engineering	75	-
<b>Materials and Technologies in Automobile Production</b> / Mechanical Engineering	30	-
<b>Mechanical Engineering</b> / Mechanical Engineering	-	40
<b>TOTAL</b>	400	40

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

In case of a small number of applicants for the part-time study, the Faculty retains the right not to open the study programme.



## TERMS AND CONDITIONS OF ADMISSION

### Basic condition of admission

The basic condition for the admission to the bachelor 's degree study programme (first degree) 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 a 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.

### Other conditions of admission

#### 1. No entrance exams

Applicants will be admitted to the study without entrance exams if they meet the legal conditions for bachelor's study (see Basic condition for admission) and the number of applicants does not exceed the planned capacity. 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. Selection procedure

If the number of applicants for study exceeds the planned capacity, applicants will be admitted on the basis of the selection procedure, during which the study results achieved at completed secondary school will be assessed. From the applicants, a ranking list will be drawn up according to the arithmetic mean of the marks at the year-end report for the penultimate year of study (not the final year).

Concerning admission, priority will be given to applicants who have completed NPS (SCIO) tests from general education prerequisites or mathematics in the current school year and have reached at least 60 percent.

If the applicant has submitted all the required enclosures with the application form, the admission procedure takes place without the personal participation of the applicants.

3. Written and oral command of Slovak language or Czech language is required for study at the Faculty. Basic knowledge of at least one world language (English, German, Spanish, French) is assumed.



## 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 apply for each one individually, including payment of the respective admission procedure fees.**

Applicants have to fill in the form Prihláška na vysokoškolské štúdium - 1. 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/](https://prihlaskavs.sk/sk/).

**Applicants passing the school-leaving examination in the school year 2019/2020** attach to the electronic application form confirmed and signed scans:

- a scan of the application form signed by the applicant with a confirmation of correctness of the data by a secondary school stamp,
- proof of payment of the admission fee.

If the applicant did not attach the required scans to the electronic application form, it is required to print and sign the application form and to enclose the required documents in printed form, including the proof of payment of the fee and send it to the address of the Faculty of Mechanical Engineering UNIZA within the stipulated deadlines.

**Applicants who do not graduate in the academic year 2019/2020** must attach to the application form certified scans of the year-end reports and a certified scan of the school-leaving examination certificate, or more precisely to send them together with the application form by post.

In case of incomplete application form, applicants will be requested to complete it.

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

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

Enclosures for the bachelor´s degree study programmes:

- Curriculum Vitae,
- proof of payment of the admission fee,
- certified copies of year-end reports from secondary school (if the correctness of the data is not confirmed by the secondary school in the application form).

Upon completion of the school-leaving examination, applicants shall **send a certified copy of the school-leaving examination certificate and a certified copy of the year-end report** from the last year of secondary school study to date, 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: SK34 8180 0000 0070 0026 9861

const. symbol: 0308

variable symbol: 10231 – 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 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: **SK34 8180 0000 0070 0026 9861**.



## USEFUL DATES

Open Day	Deadline for submitting the application form	Entrance exams
November, 20, 2019 January, 29, 2020	until March, 31, 2020	June, 15, 2020



## ACCOMMODATION

All the students of the first year of the bachelor degree study are entitled to accommodation in accordance with the internal regulations of the university. **Student accommodation facilities cost approx.: € 41 € – € 51 per month.**



## BOARD

Students can use services of catering facilities of the University of Žilina in Žilina. **Price for food: 1,10 € – 2,40 €.**



## SCHOLARSHIPS

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



## 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 Mechanical Engineering UNIZA in the academic year 2020/2021 - Automated Production Systems, Machining and Bearing Production, Computer Aided Design and Simulations in Mechanical Engineering, Mechanical Engineering Technologies, Industrial Materials, Machines and Equipment Design, Industrial Engineering, Environmental Technology, Vehicle Maintenance, Vehicles and Engines, Mechanical Engineering (respective information about particular study programmes is available at 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

#### COMPUTER DESIGN AND SIMULATION

##### (Field of study Mechanical Engineering)

Graduates of the study programme Computer Design and Simulation have acquired in the first part of their professional education knowledge of theoretical subjects such as Mathematics, Physics, Fluid Mechanics, Thermodynamics and Strength and Strain which along with the Rigid Body Mechanics and design and technology-related subjects constitute theoretical and practical basis for the study of the particular study program. Building on this basis the graduates in the second part of professional education acquire knowledge of applied sciences focused mainly on modelling, calculations, construction, operation and maintenance of technical facilities. On the basis of optional subjects, students can profile themselves on all areas of technical sciences. In addition, graduates are able to handle routine work with modern CAD systems for construction and modelling support, as well as systems for calculating, analyse, and simulation of parts of technical systems and mechanisms in dynamic and FEM analyses. Students can demonstrate their expertise when solving semester and final projects. The study programme ends with the final state examination and thesis defence. During their study, students receive theoretical and methodological basis and professional and practical experience and skills that are necessary for solving a wide range of issues related to the design, engineering, construction and operation of various machinery and equipment. Graduates are employable in the areas of projecting, design, construction, operation and maintenance of technical systems.

#### MECHANICAL ENGINEERING TECHNOLOGIES

##### (Field of study Mechanical Engineering)

The professional profile of graduates of Mechanical Engineering Technologies study programme is characterised by theoretical but mainly practical knowledge of construction and engineering technologies, production facilities, quality, economics and production control and by abilities and capabilities of the skilful application of the acquired knowledge in practice. Graduates receive theoretical but mainly practical knowledge of the most widespread technologies in mechanical engineering production and its control as well as in the field of automation of mechanical engineering. Graduates acquire habits and skills in construction, design and technological activities and in application of modern technological tools. Graduates also have basic knowledge in the field of production, testing, technological processing, selection, exploitation and degradation of properties of the main types of technical materials. They are able to operate mainly in industrial businesses: in the field of technical material production, their technological processing to semi-finished goods and products as well as in quality control and assurance, in purchase, sale, service and maintenance. Graduates are qualified to work in industrial mechanical engineering companies operating in railway and public transport, in all areas of engineering and in other organisations of administrative, production, operating or repair character. Graduates have adequate knowledge in the field of electronics, mechatronics, robotics, drives, as well as in the field of computer-aided engineering and manufacturing. They feature sufficient practical experience and skills in laboratory work, they master professional terminology in a foreign language, and they are able to apply the basics of economic methods necessary for the operation of existing systems.

#### ENERGY AND ENVIRONMENTAL TECHNOLOGY

##### (Field of study Mechanical Engineering)

Graduates during their study acquire basic knowledge especially in the fields of technical and scientific disciplines and knowledge of the theory of fluid mechanics, thermodynamics, heat and material transfer which together with the rigid body mechanics create an essential theoretical basis of energy technology. The study focuses primarily on the study of energy sources, distribution networks of energy utilities, further the design and construction of all types of machines that manufacture, produce and transform energy as well as their support facilities. It also aims at facilities for the utilisation of alternative energy sources and equipment for energetic waste recovery that on the whole correspond with the study program structure and content of individual subjects. Graduates of the Energy and Environmental Technology study programme with the acquired knowledge of the structure and operation of power machinery and equipment, legislation, ecology, ergonomics, economics, enterprise and management are able to work in all spheres of the national economy and are qualified to operate energy and environmental equipment, maintain them in working order and perform simple construction and design changes.

## **INDUSTRIAL ENGINEERING**

### **(Field of study Mechanical Engineering)**

During the study, undergraduates acquire basic knowledge mainly in the field of technical and natural sciences, company management, production and information technologies, company logistics, organisation of support and service operations and their economic dependence. During the study they are focused on organisation and management of processes at the level of basic production units (workshops, production plants), which corresponds with the structure of the study programme and the contents of the individual subjects. Graduates of the bachelor's study programme receive theoretical knowledge necessary for efficient control of production units and their processes. During the study graduates become proficient users of software applications and they are able to apply basic methods of industrial engineering in practice. Graduates of the bachelor's study programme Industrial Engineering and Management are employable as managerial and coordination staff mainly in basic production units and in departments in industrial engineering, further in selected departments of middle management level of industrial companies. They are prepared to work as technicians of quality and/or productivity, co-designers of production systems, production managers, employees in technical preparation of production, industrial engineers, employees of the production planning and control departments, logistics departments, quality management departments, maintenance departments and human resources departments, etc.

## **VEHICLES AND ENGINES**

### **(Field of study Mechanical Engineering)**

Graduates of the bachelor's study programme Vehicles and Engines in the field of study Mechanical Engineering are able to analyse problems and opportunities that occur in different practical areas related to the field of transport means and their important subsystems. Graduates acquire basic knowledge in the subjects of general technical education, they have a general overview of mechanical engineering production and its management, professional knowledge in the field of transport means, combustion engines, hydraulic and pneumatic machines and equipment, knowledge of quality assessment and testing of transport means and knowledge regarding methods of compliance with legislative requirements imposed on the production and operation of transport means and their subsystems.

Graduates are able to design and provide construction solutions of the transport means parts and their subsystems also using modern computer-assisted technologies. They are able to find work in the operation of transport means, mainly of road vehicles, rail vehicles, combustion engines, hydraulic and pneumatic machines and equipment, by their diagnostics, maintenance and repairs. Graduates meet conditions for further education in master's degree study, especially in the study programmes Vehicles and Engines and Vehicle Maintenance.

## **MATERIALS AND TECHNOLOGIES IN AUTOMOBILE PRODUCTION**

### **(Field of study Mechanical Engineering)**

Graduates of the study programme Materials and Technologies in Automobile Production are able to solve construction and technological problems of implementation of machinery and systems; they have knowledge of methods of designing individual components and complete equipment, manufacturing technologies, operation and maintenance of machinery with an emphasis on automobile production. They have basic knowledge of chemical composition, structure and properties of engineering materials and technologies for their production and processing; they are able to solve problems related to the preparation of production, application of materials and are qualified in the field of material quality control. Graduates are able to assess the quality of work and products; and they are prepared to work as line managers in all of the above mentioned areas. Graduates of the study programme Materials and Technologies in Automobile Production are able to work as developers, technologists and workers in automotive service but also in other sectors of industry, in public as well as in a private sector.

## **MECHANICAL ENGINEERING**

### **(Field of study Mechanical Engineering)**

The professional profile of graduates of Mechanical Engineering study programme is characterised by theoretical but mainly practical knowledge of construction and engineering technologies, production facilities and automation, quality of mechanical production, economics and production control and by abilities and capabilities of the skilful application of the acquired knowledge in practice. Graduates acquire theoretical but mainly practical knowledge of the most widespread technologies in mechanical engineering production and in the field of automation of mechanical engineering. Graduates acquire habits and skills in construction, design and technological activities and in application of modern technological tools. Graduates also have basic knowledge in the field of production, testing, technological processing, selection,

exploitation and degradation of properties of the main types of technical materials. They are able to operate mainly in industrial businesses: in the field of technical material production, their technological processing to semi-finished goods and products as well as in quality control and assurance, in purchase, sale, service and maintenance. Graduates are qualified to work in operation of industrial mechanical engineering companies, in railway and public transport, in all areas of mechanical engineering and in other organisations of administrative, production, operating or repair character. Graduates have an adequate knowledge in the field of electronics, mechatronics, robotics, drives, as well as in the field of computer-aided mechanical engineering manufacturing. They feature sufficient practical experience and skills in laboratory work, they master professional terminology in a foreign language, and they are able to apply the basics of economic methods necessary for operation of the existing systems.