



# FACULTY OF MECHANICAL ENGINEERING BACHELOR'S DEGREE STUDY

## UNIVERSITY OF ŽILINA Faculty of Mechanical Engineering

### CONTACT

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## ACCREDITED STUDY PROGRAMMES FOR THE ACADEMIC YEAR 2018/2019

BACHELOR'S DEGREE STUDY PROGRAMMES	
FULL-TIME STUDY	PART-TIME STUDY *
LENGTH OF STUDY 3 YEARS	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 programme is 500 € for an academic year

**Detailed information on particular study programs**

- 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 PROGRAM / FIELD OF STUDY	PLANNED CAPACITY	
	FULL-TIME	PART-TIME
<b>Computer Design and Simulation</b> / Mechanical Engineering	55	-
<b>Mechanical Engineering Technologies</b> / Mechanical Engineering	85	-
<b>Energy and Environmental Technology</b> / Energy Machines and Equipment	40	-
<b>Industrial Engineering</b> / Industrial Engineering	70	-
<b>Vehicles and Engines</b> / Motor Vehicles, Rail Vehicles, Ships, Aircrafts	75	-
<b>Materials and Technologies in Automobile Production</b> / Mechanical Engineering	25	-
<b>Mechanical Engineering</b> / Mechanical Engineering	-	40
<b>TOTAL NUMBER</b>	350	40



## TERMS AND CONDITIONS OF ADMISSION

1. **The fundamental prerequisite** of being accepted to the undergraduate study programme (first degree) is full completion or full secondary vocational education (Higher Education Act, n.131/2002 Coll.).
2. **Language competence** – written and oral command of Slovak or Czech. Mastering of at least one of the world languages (English, German, Spanish, French) is welcome.
3. **Health certificates** – the faculty does not require any health certificates for university studies and accepts all the applications without any health certificates for all degrees of the university studies.



## FORMS OF ADMISSION

### 1. No entrance exams

- if the number of applicants for study does not exceed the planned capacity for admission and the candidates meet the legal conditions for higher education .

### 2. Selection Procedure

- the selection procedure will only be applied if the number of candidates for study is higher than the planned number for admission,
- provided that the applicants supply all the required mandatory annexes to the application form, **the selection procedure will take place without the personal involvement of the candidates.**

#### • Rules of Selection Procedure

Within the selection procedure, the results achieved during the secondary school study (annual certificates and the school leaving exam certificate) and participation in subject's competitions in Mathematics or Physics (Olympiáda) at a regional or higher level will be evaluated, whereas the type of the secondary school will be considered as well. The aim of the selection procedure is to ensure that the candidates with the necessary skills and abilities start to study.



## 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 programs.**

**In case the applicant is interested in more study programs, 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/>).

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 Sjf 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 for the bachelor's degree programs (to be sent with application forms):

- Curriculum Vitae,
- proof of payment of the admission fee,
- copies of the annual secondary school certificates.

After passing the final secondary school exams, the applicants will send **the copy of the final exam certificate** as well as **the copy of the last annual secondary school certificate**. The deadline for sending these documents will be announced to all applicants individually by mail.

### Admission fee:

Send 20 € to:

Žilinská univerzita v Žiline, Univerzitná 1, 010 26 Žilina

Bank: Štátna pokladnica

IBAN: SK34 8180 0000 0070 0026 9861

constant symbol: 0308

variable symbol: 10231 – bakalárske štúdium

### Payment method:

the payment can be paid by bank transfer or postal order to the account above.

### Proof of payment:

the 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: **SPRSKBAXXX**, IBAN: **SK34 8180 0000 0070 0026 9861**.



## USEFUL DATES

Open Day	Deadline for submitting the application form	Entrance exams
November, 22, 2017 February, 7, 2018	until April, 30, 2018	June, 15, 2018



## ACCOMMODATION

All the students of the first year of the bachelor 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 for food vary from 0,80 € to 2,30 €.**



## SCHOLARSHIPS

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



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

There is a possibility for continuing bachelor's degree studies within follow-up master's degree study programs at the Faculty of Mechanical Engineering UNIZA in the academic year 2018/2019 - 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 and Management, Environment(al) Technique / Technology, Transport Means Maintenance, Vehicles and Engines, Mechanical Engineering (respective information about particular study programs is available at the university website).



## GRADUATE PROSPECTS

### BACHELOR'S STUDY PROGRAMS

#### COMPUTER DESIGN AND SIMULATION

##### (Field of study 5.2.1 Mechanical Engineering)

The graduates in the study programme Computer Design and Simulation obtain 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. The students can on the basis of optional subjects aim at all areas of technical sciences. In addition, the 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. The 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, the 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. The graduates are employable in the areas of proposing, design, construction, operation and maintenance of technical systems.

## **MECHANICAL ENGINEERING TECHNOLOGIES**

### **(Field of study 5.2.1 Mechanical Engineering)**

The professional profile of the Mechanical Engineering Technologies study programme graduates 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. The 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. The graduates acquire habits and skills in construction, design and technological activities and in application of modern technological tools. The 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. The 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. The 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 5.2.6 Energy Machines and Equipment)**

The graduates during their study obtain basic knowledge especially in the areas 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.

The 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 5.2.52 Industrial Engineering)**

During the study the undergraduates gain 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. The graduates in the bachelor's study programme receive theoretical knowledge necessary for efficient control of production units and their processes. During the study the graduates become proficient users of software applications and they are able to apply basic methods of industrial engineering in practice. The Industrial Engineering and Management bachelor's study programme graduates 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 5.2.4 Motor Vehicles, Rail Vehicles, Ships, Aircraft)**

The graduates in the bachelor's study programme Vehicles and Engines in the field of study 5.2.4 Motor Vehicles, Rail Vehicles, Ships and Aircrafts are able to analyse problems and opportunities that occur in different practical areas related to the field

of transport means and their important subsystems. The graduates gain 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.

The graduates are able to design and to 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. The graduates meet conditions for further education in the master's degree studies, especially in the study programmes Vehicles and Engines and Vehicle Maintenance.

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

### **(Field of study 5.2.1 Mechanical Engineering)**

The graduates in the program Materials and Technologies in Automobile Production master the basics of Physics, Applied Mathematics, Mechanics and Material Science and 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. The 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. The graduates in the study programme Materials and Technologies in Automobile Production are able to work as developers, technologists and workers in the automotive service but also in other sectors of industry, in public as well as in private sector.

## **MECHANICAL ENGINEERING**

### **(Field of study 5.2.1 Mechanical Engineering)**

The professional profile of the Mechanical Engineering study programme graduates 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. The graduates receive theoretical but mainly practical knowledge of the most widespread technologies in mechanical engineering production and in the field of automation of mechanical engineering. The graduates acquire habits and skills in construction, design and technological activities and in application of modern technological tools. The 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. The 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. The graduates have 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.