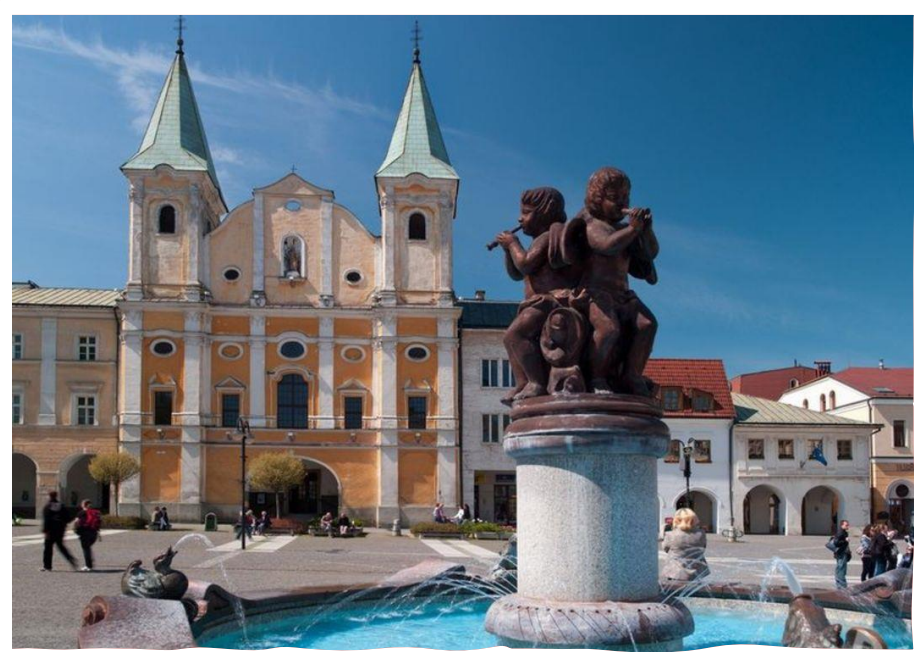




UNIVERSITY OF ŽILINA
Faculty of Mechanical
Engineering

**A bachelor's degree is not
enough, an engineer in
Žilina is TOP.**



Žilina is the 4th
largest city in
Slovakia.

- <https://youtu.be/9dEHYkzCzVY>



Žilina has one of the most beautiful university campuses in Slovakia.



WHY STUDY IN ŽILINA?

UNIZA has 7 faculties. The Faculty of Mechanical Engineering is historically one of the founding and oldest faculties. **It is the BEST Mechanical Engineering Faculty in Slovakia** according to the independent assessment of the quality of science and research VER 2022.

How does it look here?

Virtual tour of the university:

<https://www.uniza.sk/index.php/verejnost/uniza-v-obrazoch/virtualna-prehliadka>

Virtual tour of the faculty

<https://www.fstroj.uniza.sk/index.php/akreditacia/laboratoria/prehliadka>





Žilina has the most beautiful university campus in Slovakia with TOP services in the field of education, business, sports and catering.



Faculty of Mechanical Engineering



WHY STUDY IN ŽILINA?

You will live in the most beautiful
dormitories in Slovakia right on
the university campus,
10 minutes from the faculty:

<https://vd.internaty.sk/>

Price for accommodation:

49 € – 64 €/per month



WHY STUDY IN ŽILINA?

No need to worry about hunger! As a student, you'll get well-prepared, nutritious meals at pocket-friendly prices. Plus, each day, you'll have a variety of 8 dishes to choose from, catering to both meat enthusiasts and vegetarians. And guess what? It's all conveniently located right on the UNIZA campus!

<https://menza.uniza.sk/projects-7>

Price for food:

1,60 € – 4,20 €.



Treska Bar also serves
dinner and
is open From:
7:00 AM to 7:30 PM

WHY STUDY IN ŽILINA?

If you're passionate about sports and the great outdoors, then the Faculty of Mechanical Engineering at UNIZA is tailor-made for you. Here, you'll not only receive a top-notch education but also immerse yourself in the beauty of nature, right on one of Slovakia's most picturesque university campuses. Complete with an athletic track and nestled in a city where nature is within easy reach, it provides an unmatched setting for both academic excellence and outdoor adventures.



<https://www.youtube.com/watch?v=l6eMlcJw3fg>

<https://www.youtube.com/watch?v=8QRfQH3aMpo>

WHY STUDY IN ŽILINA?

Getting to our college campus is a breeze!
Whether you prefer walking, driving, cycling, scootering or public transport, we have everything for you.

Check out the different ways to reach us:

<https://www.youtube.com/watch?v=vYuWjVHtmWQ>



WHY STUDY IN ŽILINA?

Now it's decision time!

All our **engineering study** programs are accredited, ensuring that after graduation, you'll find a well-paying job, not only in Slovakia but potentially abroad as well:

https://www.youtube.com/watch?v=M3T_o_x9iL9Q





What else do we offer:

- **Mathematics and physics courses for new students;**
- **Slovak language course;**
- **Incentive scholarships;**
- **Foreign mobilities within ERASMUS+;**
- **Excursions and internships in companies.**

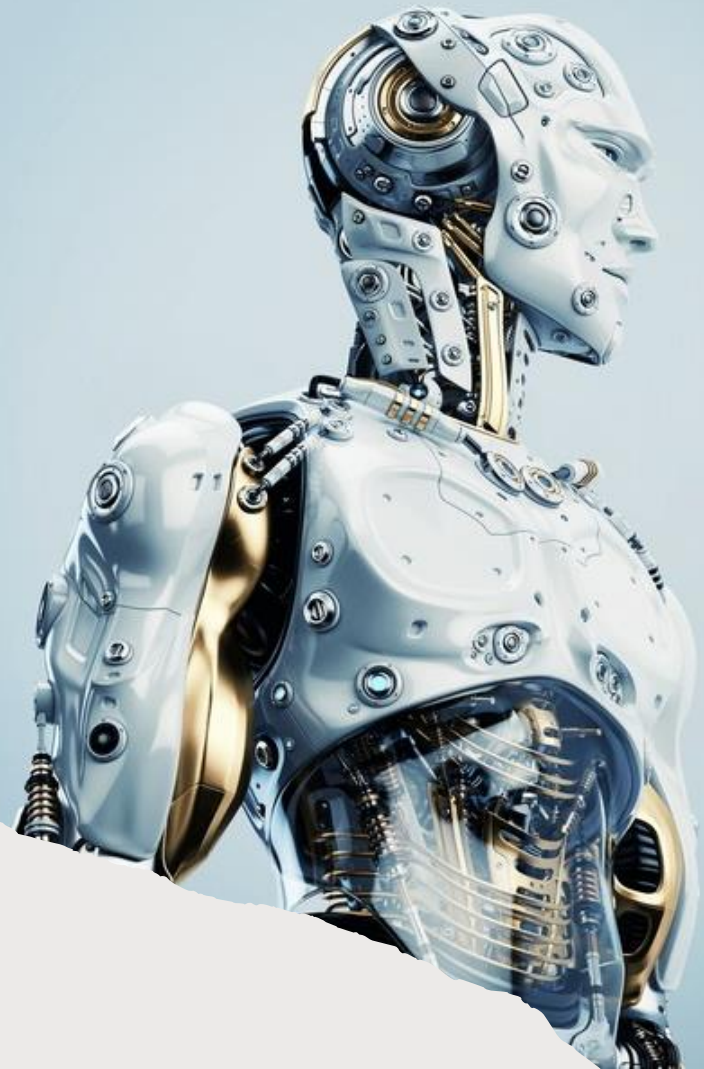


ŽILINSKÁ UNIVERZITA V ŽILINE
Strojnícka
fakulta

WWW.SVETSTROJOV.SK



UNIVERSITY OF ŽILINA
Faculty of Mechanical
Engineering



**Engineering study programs
offered:**



MASTER'S DEGREE STUDY PROGRAMMES:

- **Computer Modelling and Simulations in Mechanical Engineering**
- **Mechanical Engineering Technologies**
- **Industrial Engineering**
- **Vehicles and Engines**
- **Environment Technology**
- **Automated Production Systems**
- **Technical Materials**

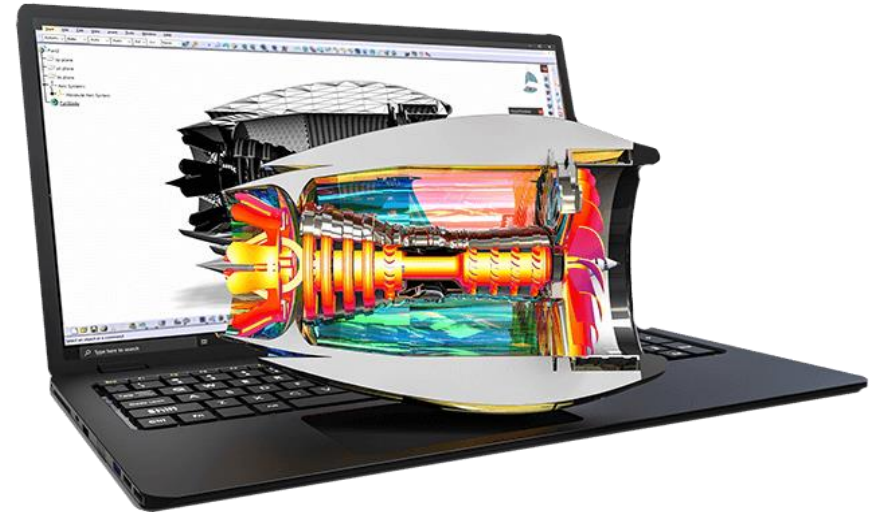
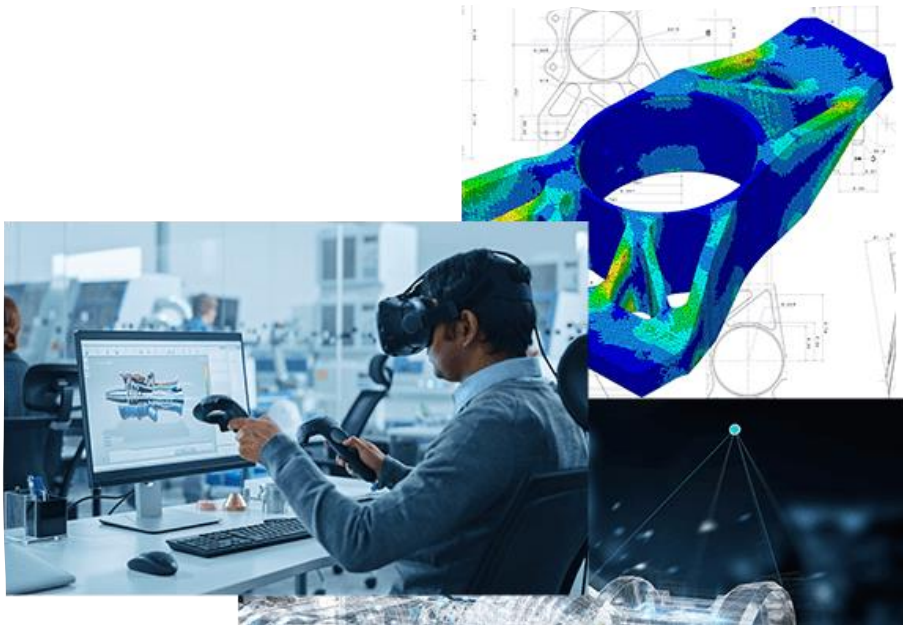
LENGTH OF STUDY 2 YEARS



Computer Modelling and Simulations in Mechanical Engineering

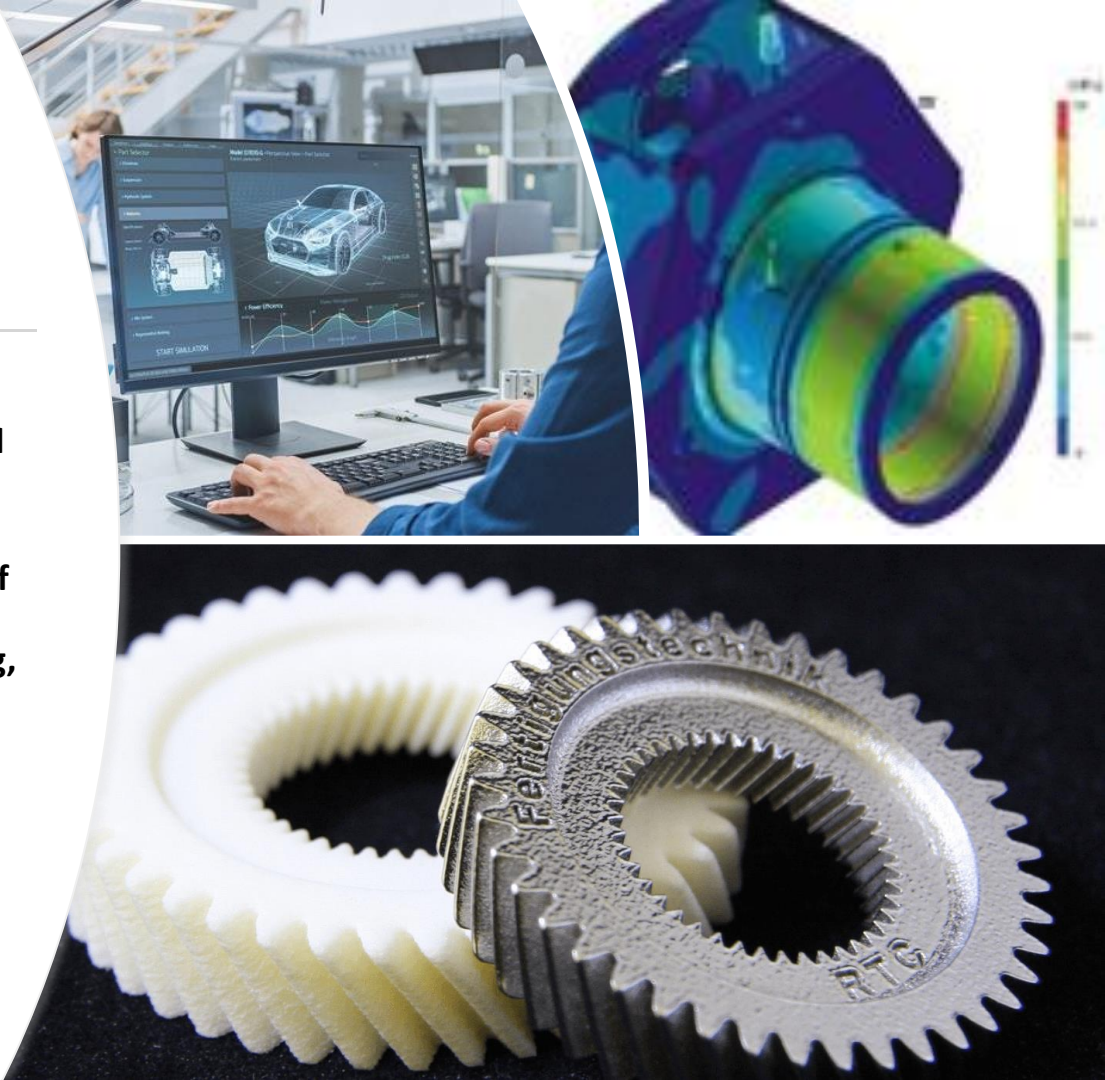
...intelligent machines, devices, elements

- designing machine parts, assembly units and creating technical documentation
- working with modern 2D and 3D CAD systems to support construction and modeling
- work with systems for calculation, analysis and simulation of parts of technical systems and their mechanisms in dynamic and FEM analyses



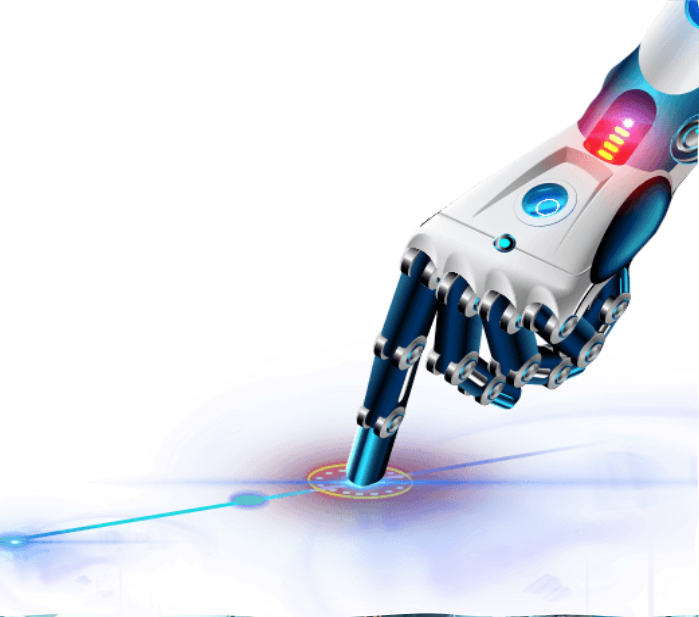
Modern equipment of classrooms and laboratories

- computer rooms with powerful computers and the most modern CAD/CAM/CAE systems;
- laboratories for testing and diagnostics of bearings and gearboxes, research in the field of tribological properties of materials, testing of electric cars, devices such as Rapid Prototyping, Rapid Tooling and a bionics laboratory;
- Laboratories of dynamics and FEM analysis for research in the areas of optimal design of structures, reliability, failure and fatigue of structures under static and dynamic loading.





Mechanical Engineering Technologies



...intelligent engineering technologies



- engineering production technologies and their management CIM
- implementation of CNC technologies in engineering production
- application of IT to engineering production such as CAX systems
- SMART automation and CAPP robotization
- CAQ inspection, quality and testing standards
- control of quality, chemical composition, heat treatment, production and production processes....

Top laboratories

- CAD/CAM/CAE systems and CNC programming, CNC technology
- automated production systems
- evaluation of technological processes
- foundry metallurgy and technology
- heat treatment and forming
- non-destructive technologies
- engineering metrology
- digital production
- metallography and testing of materials





Industrial Engineering

... digital business and SMART management

- organization and management of production processes;
- production systems and their design;
- corporate logistics;
- production quality;
- information technologies;
- management and economics;
- organization of auxiliary and service operations.

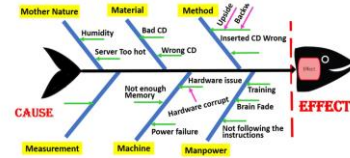


Top software equipment and laboratories

- design of production and logistics systems;
- computer simulation;
- virtual and augmented reality;
- digital enterprise;
- digital ergonomic analyses;
- intelligent and reconfigurable production and logistics systems;
- new approaches and technologies in the construction and operation of the so-called intelligent plants



Fishbone Diagram



The Scope of Industry 4.0

MES & Production Profile including OEE

- Information between the front-end equipment & MES application
- Production Traceability

Production Testing Equipment

- Machine Vision
- Motion I/O Cards
- Computing Platform
- Controller

Factory Environmental Monitoring

- Electric Monitoring
- Factory Waste Water
- Energy Management

Predictive Maintenance

- Production Performance Analysis
- Machine Status
- Anomalous Diagnosis
- Sensor Measurement

Machine Automation

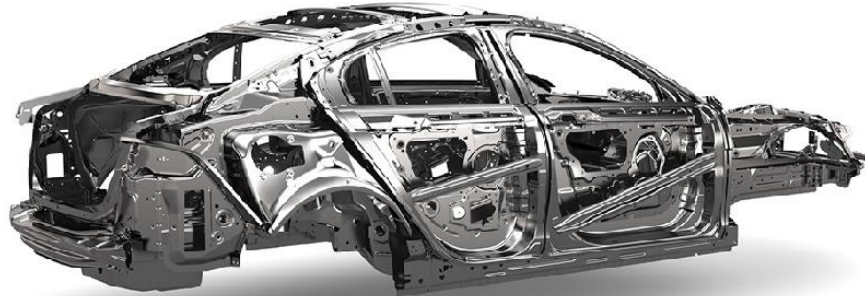
- Industrial Robots
- Automated Guided Vehicle
- Industrial Machinery



Vehicles and Engines



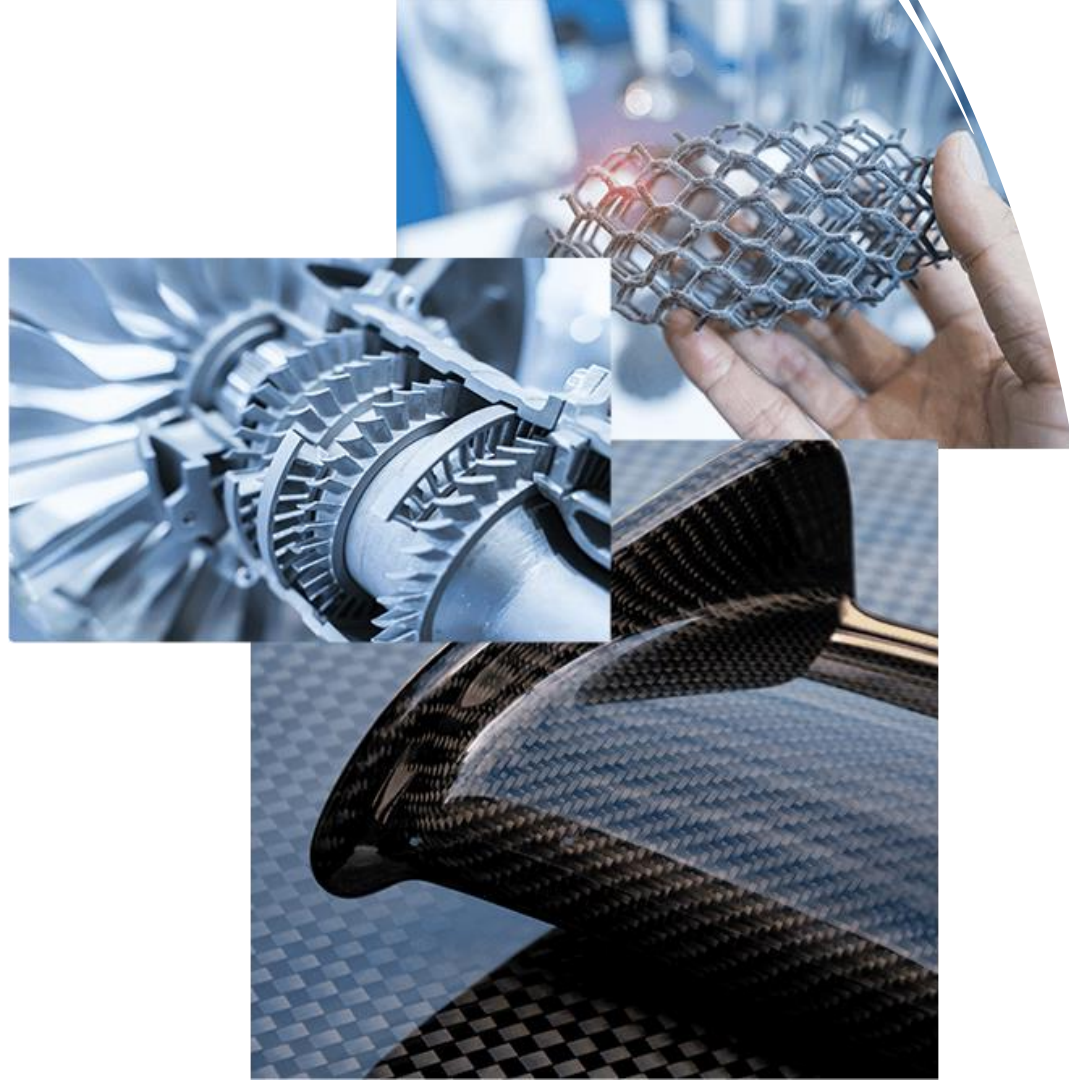
... intelligent structures and mobility



- **theory, concept, construction, diagnostics, testing, maintenance of vehicles and combustion engines;**
- **computer modeling, simulations - analyzes of vehicles and engines;**
- **quality assessment and testing of transport technology;**
- **legislative requirements placed on the production and operation of means of transport and their subsystems**

Modern teaching spaces

- Modern classrooms, laboratories and test rooms for computer-aided design, modeling, simulation engineering calculations, experimental testing;
- Analysis of the characteristics of vehicles, engines and their parts;
- Diagnostics and maintenance of vehicles;
- Testing combustion engines;
- Lectures by experts from practice;
- Excursions to production enterprises.

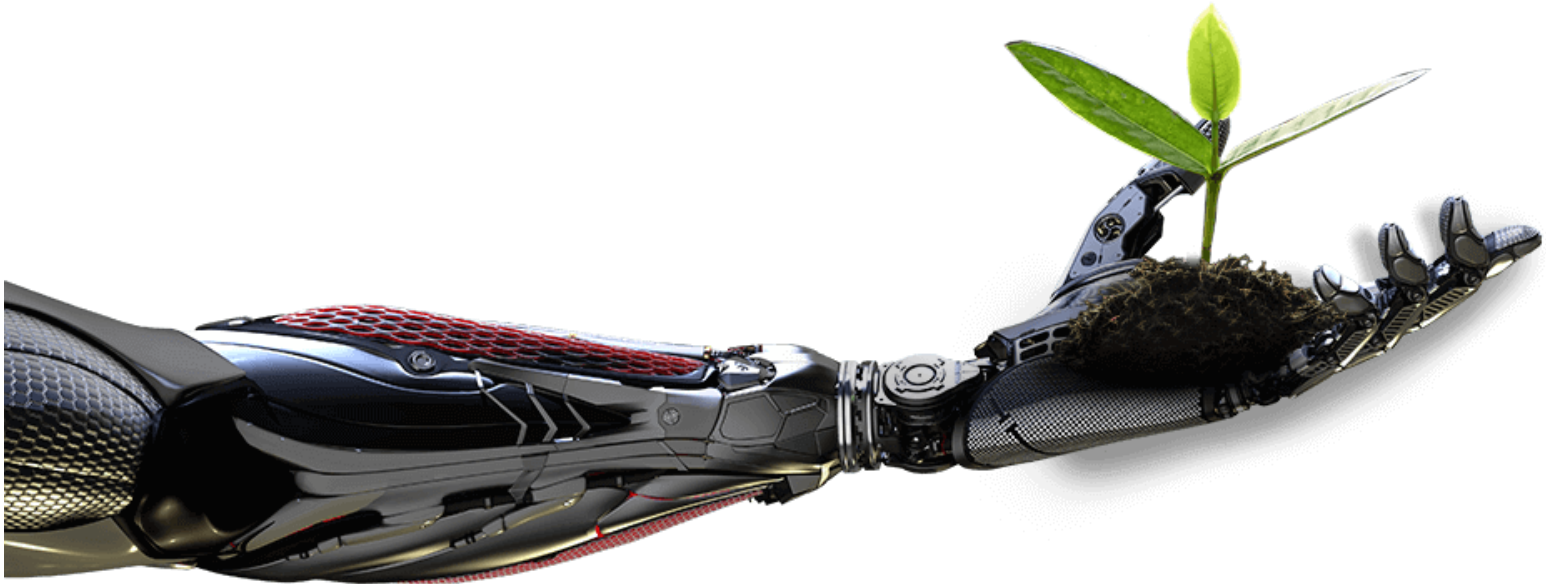




Environment Technology

... efficient use of energy resources

- fluid mechanics, thermodynamics and heat and mass transfer;
- energy sources, distribution networks of energy media;
- design and construction of machines that produce and transform energy;
- design and construction of equipment for the use of alternative energy sources and equipment for the energy recovery of waste



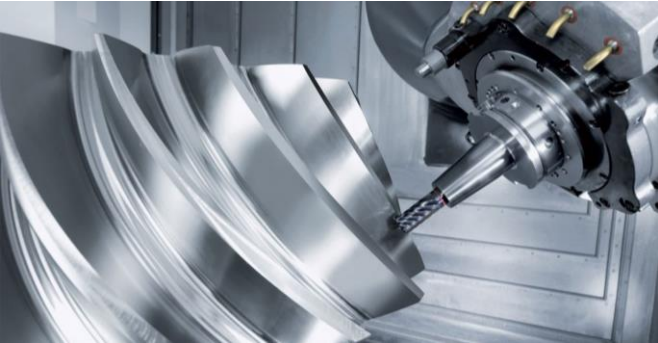
Modern teaching spaces

- simulation of thermal phenomena;
- work with renewable energy sources;
- optimization of heat sources;
- reducing the energy demand of buildings,...





Automated Production Systems

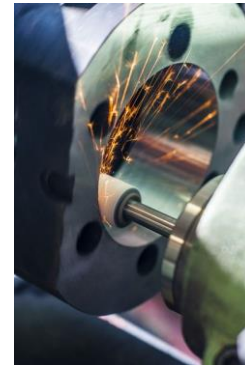
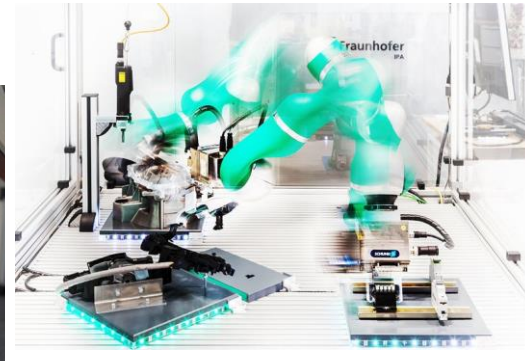
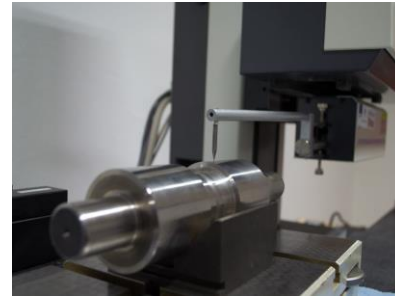
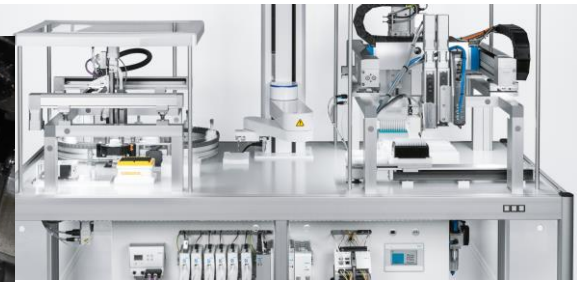


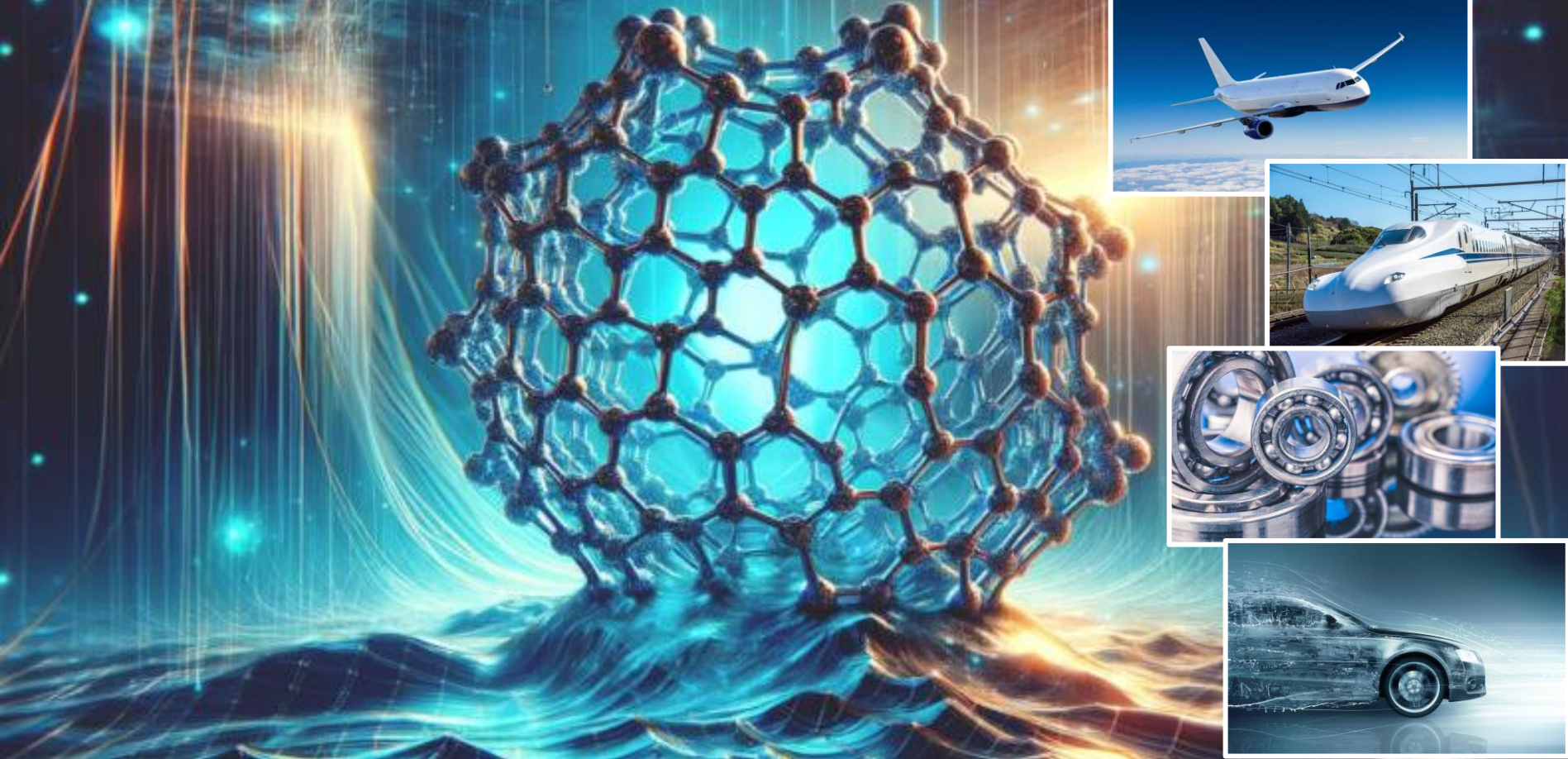
Where will you apply in practice?

- as specialists in the field of design of automated production and assembly systems, robotic cells, technological units based on production machines and equipment with CNC;
- as programmers of industrial robots and manipulators, programmers of production machines with CNC and in general devices based on control systems using a PC, PLC or I-PC;
- as specialists in machine and equipment diagnostics;
- as developers and engineers for the application of mechatronic devices in various industries;
- as engineers and specialists in the field of mechanical production focused on chip technologies - analysts of the cutting process;
- as cutting tool specialists, engineers for the production of bearings and the production of parts from hard-to-machine materials based on superalloys of nickel and titanium (for example, the production of dental implants);
- as experts in metrology and quality of machine-building products, innovations in production processes, etc.

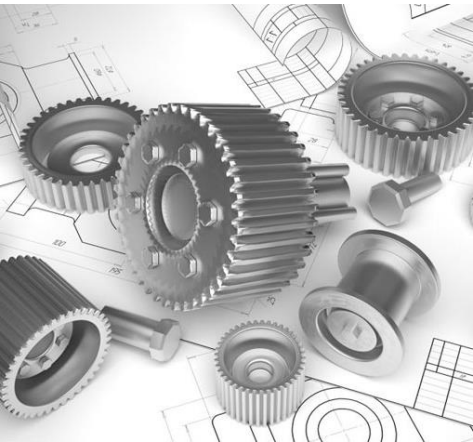
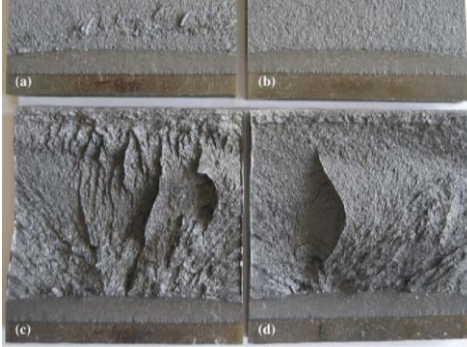
Modern laboratories and work solved for practice...

- Laboratory of mechanical processing and production technology;
- Laboratory of non-destructive technologies;
- Laboratory of precision measurements of 3D CMM and diagnostics of the accuracy of coordinate devices;
- Laboratory of engineering metrology;
- Laboratory of programming of CNC machines;
- Laboratory CAD/CAM/CAE system;
- Laboratory of robotics of production processes.....





Technical Materials

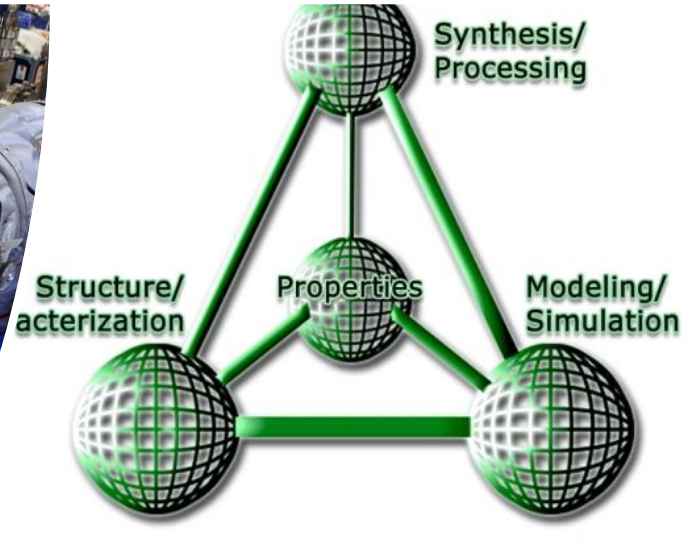
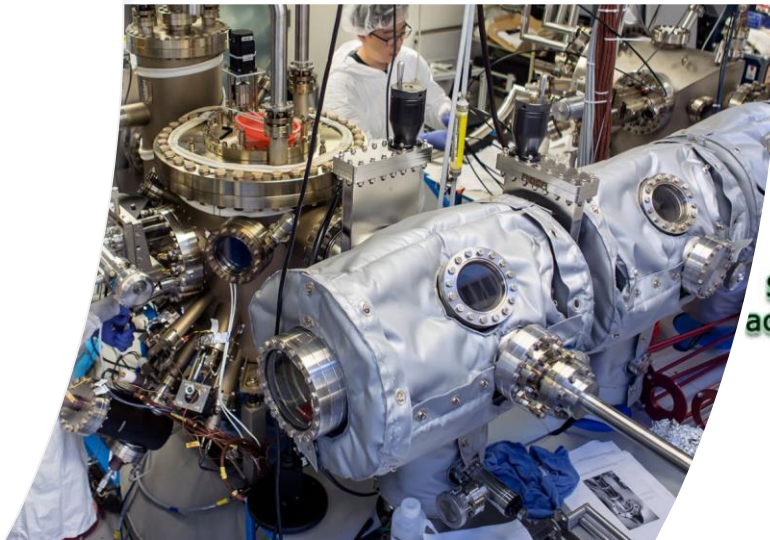


Why study materials engineering?

- Graduates of engineering studies (materials engineers) find employment in industrial engineering and metallurgical enterprises, in the automotive industry, in the bearing industry, in all areas of engineering technology, in production organizations, of an operational or diagnostic nature. They will be applied in the field of material control, testing, metallography and in the academic sphere too.

Why study materials engineering?

- You will be an expert in material quality control, heat treatment, welding, casting, machining, non-destructive testing, biomedical applications and more.





- **What else awaits you with us....**

SPORT



CULTURE





REST AND RELAXATION





Active cooperation with practice