

Degree Programme: Mechanical Engineering and Instrumentation
ECTS code: ME

Qualification awarded: MEng

Education forms: Full-time

Term of education: 1 year

Final examination: development and public defense of a diploma project

Admission requirements: according to the general requirements for admission to TU-Sofia

Access to further studies: Graduates with a master's degree have the right to apply for a doctorate in Bulgaria or a foreign country in the appropriate scientific fields.

Programme importance: In recent years there has been a sharp increase in demand for graduates of the specialty "Mechanical Engineering and Instrumentation". This is explained by the revival of machine manufacturing in Bulgaria and with the increased interest of foreign engineering companies in the Bulgarian market.

General characteristics of the education:

The curriculum for the training of students in the specialty "Mechanical Engineering and Instrumentation" for the educational qualification degree "Master" is in line with the requirements of TU - Sofia and is largely in line with the curricula of leading universities in Europe and the world . In general, special training is carried out in such teaching courses as Application of computer technology in the design of mechanical engineering products, Metrological support in mechanical engineering, Computer analysis and simulation in mechanical engineering, Reliability of industrial systems, Innovative materials and technologies in mechanical engineering, Engineering research, Technical legislation and law.

The master's course in the specialty "Mechanical Engineering and Instrumentation" provides four main modules with specialized training:

- Intelligent systems in mechanical engineering - Intelligent measuring systems, Computer integrated production systems, Lifting manipulators and robots, Programming in CAD environment and automation in geometric modelling, Intelligent drive systems;
- Digitalization in mechanical engineering and instrument making - Reversible engineering and modernization of automation equipment, Geometric accuracy and functional sizing, Computer modelling and research of machines and systems, Computer quality management and metrological activity, Computer design of machine building units and aggregates are studied;
- Quality control and management - Control and measuring systems, Automated production systems, Quality management systems, Computer quality management and metrological activity, Automation of control in mechanical engineering are studied;
- Weapons and ammunition production - study Flight dynamics, Applied thermogas dynamics, Design of mechanisms and devices for automatic weapons, Ammunition, Design of small arms and ammunition. This module is for future engineers working in the defence industry.

The graduated mechanical engineer - Master in "Mechanical Engineering and Instrumentation" will be able to carry out research, design, design, manufacturing, service, installation, repair, managerial and others activities related to the practical use of technologies, devices, mechanisms, equipment and other objects of mechanical engineering

Educational and professional goals:

The graduate of the specialty "Mechanical Engineering and Instrumentation" must:

- to design and construct elements, units, devices and devices from mechanical engineering and instrument making and to develop the respective technical documentation;
- to organize the production and to manage the activity of the production units, to organize the use, maintenance and repair of the respective sites;
- to control the quality of documentation, products and processes; - to work as a leader or a member of a team.

Employment of the graduates:

Engineers graduating in "Mechanical Engineering and Instrumentation" are realized in companies engaged in the design, manufacture and operation of general engineering, control and measurement , automation and

precision equipment, as well as in the security and defense system , in the field of design and production and the operation of small arms, ammunition, fuses and lighters.