General information

METALLURGICAL TECHNOLOGY
Programme title: University study programme in Metallurgical Technology
Duration: 3 years (6 semesters) with a total of 180 ECTS.
Field of study according to Isced classification: (54) manufacturing and processing
Scientific research discipline according to Frascati classification: engineering sciences
Professional title awarded upon graduation:

- diplomirani/a inženir/ka metalurgije (VS)
- dipl. inž. metal. (VŠ) (abbreviated title B. Eng. in Metallurgical Technologies)

Study programme goals and general competences
In this new millennium, interest in steel production has increased. The fact that it cannot be replaced by any other material has attracted the interest of metallurgical professionals. The annual world market production of steel has risen from 800 mio tonnes to 1,500 mio tonnes over the last eight years, and the trend is still moving upwards. Following cement, steel ranks in second place in world demand for materials. High quality level of steels and other non-ferrous metals and their alloys are crucial for a successful global economy and technological development. With this in mind, our study programme addresses current global needs.

The basic goal is to qualify professionals to be able to integrate themselves into an industrial setting as well as implement industrial processes, including production control, quality control and attestation of industrial products. From a historical point of view, the methods used in development and control of metallurgical processes and characterisation methods of metal materials have been adopted by other engineering materials. For this reason, another goal of this study programme is to qualify professionals to deal with quality control of the majority of engineering materials. This new programme focuses on acquiring professional knowledge and competences for the market demands of an innovative, high-technology society, providing also a sound theoretical basis. Graduates should be able to continue education throughout the life-learning process and acquire new information-communication skills. In all courses, strong emphasis is given to verifying theoretical knowledge through practical work, practising team work and encouraging innovative thinking.

Graduate competence profile

General competences+

- adequate knowledge in chemistry, physics, mechanics and information science comparable to the standards of similar European universities;
- acquired knowledge and application of professional courses and related areas pertaining to metallurgy to be able to manage and control technologies and make technological improvements and innovations;
- ability to communicate with co-workers and actively participate in multidisciplinary groups:
- acquiring appropriate knowledge standards and competences to be able to follow courses at the university

level;
- ability to analyse, synthesise and understand the impact of technology on the environment and society;
- understanding the principles of management and business practice;
- developing professional and ethical awareness;
  ability of independent learning and understanding the need for lifelong learning.
- independently performing technological tasks in metallurgical operation units and other engineering or organisational tasks
- ability to solve well defined tasks in the area of management and control of
- metallurgical technologies and
- ability to operate different laboratory and testing equipment for quality control of products.

Dostopnost

Employment possibilitie+

Graduates of the new first-cycle study programme in Metallurgical Technology will be able to perform the following jobs:

- technological procedures for preparation of metallic melts, solidified components in the form of castings and their processing for further application in metal processing industries, apply knowledge and analytical methods for characterisation of the properties of metals and alloys in the process of manufacturing, processing of products and advising in the selection and use of metal elements in tools, instruments and structures.
- wide range of production units where teamwork skills are required for working in development teams (operating an existing technology, intensifying technologies),
- wide array of producer branches dealing with processing or the use of materials where broader professional knowledge and routines are needed
- instruments for testing materials: e.g. mechanical engineering, chemical technology, building industry, electro technology, etc.,
- industrial waste processing units, monitoring exhaust gases, direct use or further processing of wastes or recycling units.
- research and development in industrial units as well as research laboratories where knowledge of destructive and non-destructive methods of materials testing is required.
  The new first-cycle higher professional programme in Metallurgical Technology addresses all the needs and provides competences for the jobs mentioned above. All the methods encompassed in the study cover mezzo, micro and macro analyses of materials structures, materials characterisation, materials forming and methods for monitoring technological processes. Graduates will acquire information communication technology skills for metallurgical operations, thus being able to deal with internal information systems, processing of industrial information and preparation of production programmes at all operational levels.

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