


MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE  
DNIPRO UNIVERSITY OF TECHNOLOGY



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Review

on educational program «6B07205-Mining engineering»  
NPJSC «Kazakh national research technical university after K.I.Satpayev»

Close educational and scientific relations are established between National Technical University “Dnipro Polytechnic” and NPJSC “Kazakh National Research Technical University after K.I.Satpayev” during the last ten years, which is confirmed by the newly concluded Agreement on cooperation from 18.03.2021.

It is an active agreement, thanks to which joint scientific-research projects are carried out and experiences of Kazakh and Ukrainian mining schools are adopted within the frame of international collaboration. Enough work has been done on further development of cyclic and continuous method of mining firm rocks, modernization of mining transport system of deep open pit mines and achievements in geotechnology of drillhole leaching of uranium are introduced into educational process, especially in increasing the completeness of its extraction with low content, of Kazakhstani mining school and numerical volumetric modeling of stress-strain state of rock massif in failure zones of Ukrainian mining school.

Analysis of the educational program (EP) 6B07205 – Mining engineering on preparation of bachelors in engineering and technology at Satbayev University shows that it fully complies with the Bologna system, according to which education in European countries is carried out.

The key trend in mining and manufacturing industry is transition to a new technological level in accordance with the concept of Industry 4.0. This concept is implemented through the study of a number of progressive disciplines in this educational program aimed at acquiring skills in using a number of information programs and modules that are in demand at modern highly mechanized mining enterprises, in accordance with the State Program "Digital Kazakhstan".

The field of activity of EP «6B07205-Mining Engineering» graduates is future managers of mining enterprises focused on the extraction of solid minerals (gold, copper, iron, polymetals, uranium and many others). The demand for specialists in mining will remain at a fairly high level taking into account the increase in the

world demand for minerals and the huge number of mining enterprises in Kazakhstan.

Preparation of bachelors by the EP Mining Engineering is conducted at the Mining Department by 4 study trajectories: Open pit mining, Underground mining, Construction of mines and underground structures (including subway construction), Underground drillhole leaching of uranium (Kazakhstan is a world leader in uranium extraction). Preparation of bachelors by the fifth trajectory, Mine Surveying, is carried out at the Department of Mine Surveying and Geodesy.

Graduates of all trajectories will be able to work in primary engineering and technical positions and effectively extract natural resources by open pit and underground mining methods based on advanced technologies and modern mining equipment. The open pit mining enterprises are equipped with high-performance mining and transport equipment. Automated control of technological processes at large mines is carried out using advanced digital technologies and elements of artificial intelligence - "Smart Mine".

The demand and competitiveness of graduates will ensure the study of such basic disciplines as Integrated Information Systems in Mining, Numerical 3D modeling of geomechanical processes, Workbook of a number of information programs, etc.

The content of the EP "Mining Engineering" is aimed at the maximum satisfaction of consumer demands based on the development of a multi-level system of personnel training, the fundamentality and quality of education, the continuity and succession of education and science, the unity of teaching, upbringing, research and innovation activities, obtaining a full and high-quality professional education in mining of mineral deposits, confirmed by the level of knowledge and skills, abilities and competencies, based on the criteria established by the State General Education Standard, their assessment, both in terms of content and volume.

Eventually, the EP will ensure preparation of bachelors for the mining industry who know technology, complex mechanization, organization and economics of mining production, modern methods and principles of its improvement and design.

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