

Teaching Material Science Subjects Using SES Program from Granta Design, UK

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The integration of Ukraine into the European educational and scientific space requires structural reform of the national education system, creating a single educational criteria and standards across the whole continent. The project TEMPUS MMATENG “MODERNIZATION OF TWO CYCLES (MA, BA) OF COMPETENCE-BASED CURRICULA IN MATERIAL ENGINEERING ACCORDING TO THE BEST EXPERIENCE OF BOLOGNA PROCESS”, which aims to facilitate the modernization of higher education in the partner countries, the Department of Materials Science and Applied Materials Processing Lviv Polytechnic received SES software on top of Granta Design, UK.

SES software was created jointly by leading programmers and material experts from Cambridge University (UK). It is based on an extensive database of engineering materials (steels and non-ferrous alloys, plastics, composites, biomaterials, etc.). With this program, the introduction of initial properties (mechanical, physical, economic, etc.) of products, you can define the desired group of materials, including by introducing a new additional options you want, isolate material that will fully meet the requirements. With this program the selected material can be completely described: serves its chemical composition, physical and mechanical properties and possible ways of making technological processing, economic and environmental feasibility of its use.

This program is used in almost every application in materials sciences in the department of Applied Materials and Materials Processing, National University "Lviv Polytechnic", for example "Material science", "Heat treatment" "Nonferrous metals", "Nonmetallic Materials", "Alloys with specific properties", "Powder and composite materials" and many others. Using this software, students can easily learn to choose materials for a particular product, assign technological modes of production and surface treatment, to provide the necessary material properties. This program, or equivalent, is widely used in European universities, so its introduction in Ukraine will allow our students need for easy integration into the educational process within the EU programs for exchange students.