

ENGINEERING ECONOMICS

Bratchenya K. A., student
Balanchuk E. N., student
Scientific supervisor – Beznis Y.V., senior lecturer
English language department №1
Belarusian National University of Technology
Minsk, Republic of Belarus

Engineering economics is an important and multilateral sphere of knowledge that has a high level of demand, meaning in the modern world. The study in this area is aimed at assessing and improving the efficiency of processes related to the adoption of engineering solutions and control of resources, taking into account economic views. Engineering education plays an important role in this issue, without which there would be no people extolling new ideas in engineering economics.

The engineering economics is an intersectoral knowledge system and methodology, which is focused on an analysis with high quality, and effective adoption of engineering solutions, taking into account economic factors. The main purpose of the engineering economics is to determine the most favorable and alternative options in the context of limited resources, depending on the time value of money.

The main objectives of the educational discipline are to study engineering education and its functions in the modern world; to study the definition of “engineering economics”; to consider the position of the time value of money and rules for choosing alternatives; to study the principle of incremental analysis and optimization principles; to consider the devices and strategies of engineering economics; to give examples of the application of engineering economics [1].

The innovation in the research lies in the development and adaptation of modern strategies and devices of engineering economics to modern challenges and technological solutions. This includes integrating environmental and social aspects, taking into account global challenges and creating more accurate and flexible models for assessing the financial performance of projects. The object of study is engineering projects, processes and resources, and their relationship with economic views. The

scope of engineering economics contains a wide range of spheres and activities, including the following factors:

1. Analysis of investment projects. Engineering economy is used to determine the financial rationality of investments in new technologies, equipment, construction and other engineering projects.

2. Design and optimization of systems and processes, Evaluation of economic aspects. When designing systems, production processes and supply helps to achieve more efficient use of resources and reduce costs.

3. Risk management. Engineering economy allows you to analyze the risks and uncertainties associated with engineering solutions, and develop strategies and solutions for their mitigation or management.

4. Evaluation of the value of the life cycle. Engineers can use engineering economy methods to assess the full cost of the product or system throughout its life cycle, including operation, maintenance and disposal.

5. Environmental and social stability. Engineering economy allows taking into account environmental and social factors when making engineering solutions, contributing to sustainable development and social responsibility.

6. Optimization of resources. Analysis of economic factors helps engineers to optimize the use of resources such as materials, energy and time to achieve better results [2].

Thus, the engineering economics is an important part of engineering education and engineering practice, helping engineers to make informed well-balanced decisions, taking into account both technical and economic aspects.

References

1. Электронный учебно-методический комплекс по учебной дисциплине «Инженерная экономика» для специальности 1-27 80 01 «Инженерный бизнес» / Белорусский национальный технический университет, Кафедра «Экономика и логистика»; сост. В. Ф. Карпович. – Минск : БНТУ, 2021. [Electronic resource] – Mode of access: <https://rep.bntu.by/handle/data/124850>. – Date of access: 03.03.2024.

2. R. Panneerselvam Professor School of Management Pondicherry University, Engineering economics. [Electronic resource] – Mode of access: <https://www.uoanbar.edu.iq/eStoreImages/Bank/6298.pdf>. – Date of access: 27.02.2024.