



NATIONAL UNIVERSITY OF SCIENCES & TECHNOLOGY

Engineering Economics (ECO-130) Assignment # 1

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Difference Between Economics and Engineering Economics

Economy is a social science that studies the production, distribution, demand principles, and consumption of commodities and services. It explicates the most efficient way to allocate scarce resources among diverse economic entities, such as consumers, producers, and/or capital market and economy influences, in order to maximize their utility. Utilization of economic principles is done both consciously and subconsciously, for individual as well as communal benefit, ubiquitously.

Engineering economics, in contrast, is a subset of economics that refers to product design and production procedures that maximize revenue while maintaining required product quality in the most cost-effective and sustainable manner. It is the study of diverse financial and economic concerns that affect the very way engineers proceed and obtain solutions to distinct problems, whilst also providing aid in choosing the optimal alternative in engineering projects. Engineers, as decision-makers, should be able to assess a possible solution's economic viability, as well as its technological repercussions on society and potential of widespread implementation.

An engineer's employment of economic principles while designing a product is influenced by the notion that, in addition to being able to execute a unique technological solution, an engineer must also be able to satisfy the product's social demands. Due to the rising complexity of the production and design process in today's world, an engineer must pay close attention to the underlying human and physical resources, as well as make better financial judgments based on a thorough examination of the available prospective solutions.

Utilization of economic principles in all domains of engineering is of vital importance as a point of balance must be struck between the limitless human wants and the inevitable resource constraints of the real-world. The utilization of scarce resources to manufacture diverse commodities is explained by economics, which is closely tied to an engineer's purpose of using resources with lower economic value to create products and systems with higher economic worth. Theories of economics underlying and revolving all of engineering domain, when utilized effectively, can yield the following benefits,

- Key insights to the underlying mechanisms that drive daily business operations can be sought after due to the interdisciplinary nature of economic principles
- Using a quantitative examination of a manufacturing system, we can identify elements that are barricading the timely development of a project.
- Prediction of outputs of each feasible alternative provides us with a structured passageway to selecting the optimal course of action.
- Careful analysis of resources available at disposal allows engineers to develop new and innovative goals and objectives.

A prime example of well-thought-out engineering process is the fabrication of computer chips with silicon as a factor of production, i.e., turning a trivial raw material like sand into the forefront of a billion-dollar industry, a microprocessor.