Engineering Economics

The science of economics is well understood as a topic in business education. However, competition for business in a global market and the subsequent increase in demand for inexpensive yet innovative and technologically advanced products has made it an important topic for engineering courses as well.

This module provides an introduction of the principles and concepts of economics as a tool for making engineering decisions. It outlines the basic principles of cost analysis, selling price analysis, time value of money, importance of profit, and the relevance of these concepts to engineering design.

Interactive examples outline a methodology for selection of manufacturing process, as well as materials. Basic equations are used to show the method for conducting the analysis necessary in designing an end product.

Understanding Cost

- Cost should be considered in any engineering design situation
- Types of costs include:
  - Initial Costs
  - Operating Costs
  - Maintenance Costs
  - Product Liability Costs
  - Cost of Capital (Interest Lost)
- Sound economic decisions are key to profit

Overhead Factors

Total Material Cost is

\[ \text{TMC} = \text{Direct Mat'l Cost} + \text{Indirect Mat'l Cost} \]

or

\[ \text{TMC} = \text{DMC} + \text{IMC} \]

If IMC are 10% DMC, then

\[ \text{TMC} = (1.1)\text{DMC} \]

Therefore, OVH on materials is 1.1