

## Chapter - 1

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## chap # 1: Introduction to Engineering Economics.

- Economics is a Social Science concern with Production, Distribution and Consumption of Goods and Services. It is the Knowledge concern with production, consumption and transfer of wealth.
- Types of economy are:
  - \* Communism
  - \* Capitalism
  - \* Socialism
- Engineering economy is The discipline concerned with the economic aspects of engineering and involves the systematic evaluation of the cost and benefits of proposed technical and business projects and ventures.
- Cost consideration and comparisons are fundamental aspects of engineering practice.



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## 1-3 Principles of Engineering Economics

### Problem analysis:

- i) Problem definition:  
problem recognition, definition and evaluation, need, requirements,
- ii) Develop the alternatives:  
other possible actions, alternatives, choices, identify and define it.
- iii) Focus on differences:  
only compare differences, of alternative
- iv) Use a consistent viewpoint:  
define and evaluate from a fixed perspective e.g. cost, time, effort etc.
- v) Use a common unit of measure:  
common unit make analysis and comparison much easier.
- vi) Consider all relevant criteria:  
single or multiple objectives, reputation, client satisfaction, sustainability etc.
- vii) Make uncertainty <sup>and risk</sup> explicit:  
risk? info about uncertainty?  
scenarios? probabilities?
- viii) Revisit your decision:  
results may be significantly different from initial estimates.  
learning from and adopting



based on our experience is essential and indicator of good organisation.

#### 1.4 Engineering Economy and the design process:

Engineering design is an iterative, decision making activity whereby scientific and technological information is used to produce a system, device, or a process which is different in some degree, from what the designer knows to have been done before and which is meant to meet the human needs, economically.

##### i) Problem definition:

problem must be well understood, defined, recognised and stated in explicit form.

##### ii) Search for alternatives: <sup>goal or</sup> objectives

developing or screening the potential alternatives or group of feasible alternatives for detail analysis and comparison.



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\* cash flow: the difference between all cash inflows (receipt or saving) and cash outflows (cost or expenses).

iii) Development of prospective outcomes:

Clearly out objectives

collect all relevant information, nonmonetary information (attributes) often play a significant role in final recommendation.

iv) Selection of decision criteria and analysis of alternatives:

v) selection of <sup>Best</sup> preferred alternative

vi) Performance Monitoring and Postevaluation of Results:

1.5 Accounting and Engineering Economy Studies:

