

Engineering Economics

Questions

- What is engineering economics?
- Who cares about it?
- Why do engineers have to study it?

Money and Success

- This course has to do with money and success.
- Most of us want some measure of success in life.
- For better or for worse, money (and economics) has a lot to do with success.

Economics and Engineering

- Economics is a big part of an engineer's job.
 - The engineer must translate scientific ideas in products and systems that better mankind.
 - Ideas need to make sense economically and the engineer must be able to convince others that this is so.
- That is true of any organization that you might join upon graduation.

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Economics and World Institutions

- World: International trade, balance of payments, currency evaluation
- Federal, State and Local: Tax spending, GNP, distribution of resources, support of institutions, public welfare
- Organization: Revenues, costs, profit, return on investment, stock prices
- You: Salary, investments, savings, borrowing

Business Decisions are not Simple

- Product design
- Process design (inspection, operations, raw materials)
- Machine selection
- Facility design

- All decisions are interrelated. You can't make one without affecting many others. This is especially true when multiple products, periods, stages are involved.

Engineering Economic Analysis - Seven Steps

1. Recognize and formulate the problem.
2. Develop feasible alternatives.
3. Develop cash flows for each alternative.
4. Select a criterion (or criteria) for determining the preferred alternative.
5. Analyze and compare alternatives.
6. Select the preferred alternative.
7. Perform monitoring and post-evaluation.