

Lesson 2-1 – General Economic Concepts

Lesson 2 Learning Objectives

- Understand and explain fundamental economics concepts such as scarcity
- Recognise the role and purpose of engineering economic analysis
- Introduce a structure for analyzing the economic aspects of engineering problems
- Identify other issues that arise in engineering problems (social, safety, environmental, technical), and see how they interact with economic issues

Economics – What is it?

- How

- Scar

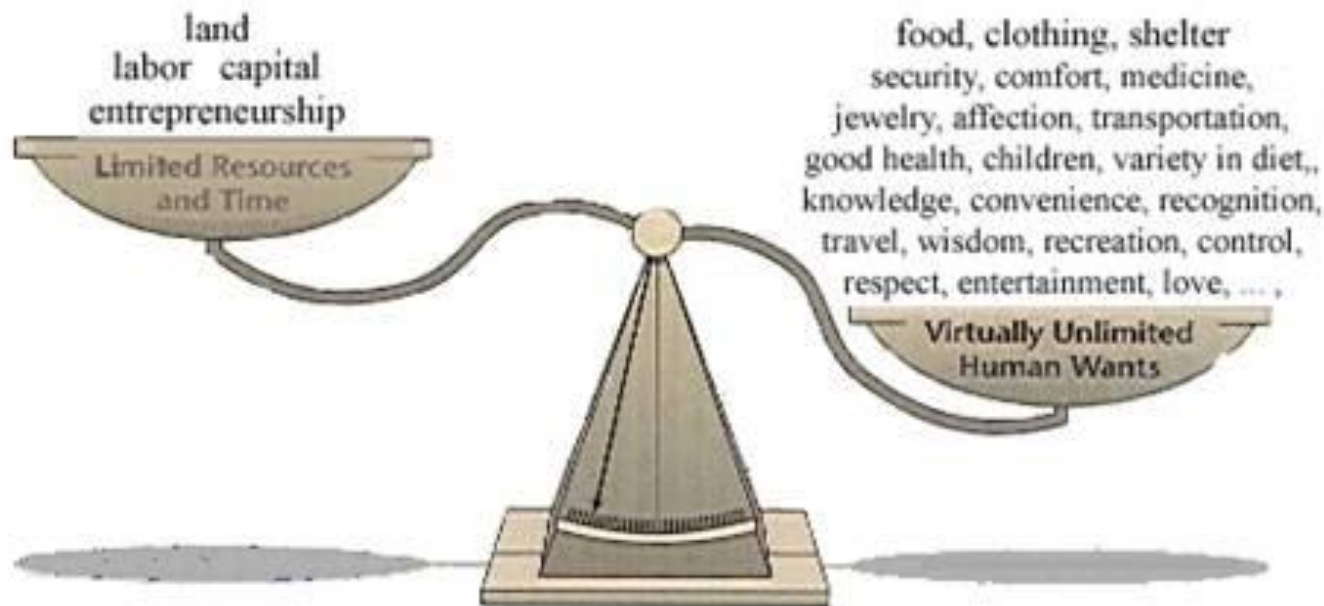
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SCARCITY



- <https://tamoclass.wordpress.com/2014/01/15/ap-macro-scarcity/> (image source)

Scarcity

- Can't meet all needs and desires for society
- Rarely can for engineering work as well
- Never enough
 - Time
 - Budget
 - Facilities
 - Data

Engineering Economics

- Engineering challenges often pivot on scarce resources
 - Labour
 - Time
 - Resources
- Technical issues can be viewed as economic questions as well
 - Mass or volume requirements
 - Quality vs. cost

Trade-offs

- How do we decide where to devote scarce resources?
- Need to assess what we gain and what we lose from each possibility
- What are all the other things you could be doing with these resources

Opportunity Cost

- What is the next best alternative to the choice you made?
 - From your list of trade-offs

