

# Engineering Design II

## Lecture 5. Basic Design

BME 494

# Initial Remarks

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- The design will probably change along the process, it is not exact.
- Still, aim for the right one from the beginning.
- Apply divide and conquer method. Divide the problem into smaller problems and solve each one.

# Challenges

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- Most of the time, there are many details that should be considered by the designers.
  - Multiple technologies should be employed
  - Different components will eventually interact with each other
  - There would be other competitive designs

# Design Factors

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- Cost
- Manufacturing
- Maintenance
- Retirement
- Specifications
- Functional requirements

# Cost

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- Cost

The total amount of final cost from the first concept to the final product.

# Product Cycle

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- Identification of the needs
- Planning and design
- Maintenance and repair
- Retire from use

# Other functions

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- Documentation
- Packaging
- Maintenance
- Market survey
- Testing

# Heuristics

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- Elegant Simplicity
- Insight-out Craftsmanship
- Analogical Insights
- Reframing Problems



# Example

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## Preliminary design for cell phone

- Ideation drawing stage
- Basic sketches
- Conceptual model using computer

# Questions

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