

Engineering Design II

Lecture 9. Ergonomics and Safety

BME 494

Ergonomics

Ergonomics is the study of exploring the interactions between humans and the machines or processes.

There are many areas of ergonomic analysis.

Ergonomics

Ergonomics take into account:

- Body proportions
- Strength
- Desired function
- Discomfort
- Efficiency

Ergonomics

- information overload/confusion
- eye strain
- Noise

Cost

- Cost

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

Safety

- Machines might have hazardous parts or operations
- If employers might contact with high probability, risk occurs.

Safety - Hazardous

- Crushing
- Collision
- Temperature
- Fire
- Toxicity
- Explosion

Environment

- Can be considered as extension to safety
- They are a natural consideration of the design process

Design Factors and Environment

Design factors that will impact the environment include

- discharges/waste
- energy/fuel utilization
- aging of the product
- energy/fuel efficiency

Questions
