

**Fall 2013, ENME 770/ENRE 648B**  
**(Mondays 4-6:40 pm and on the web)**

## **Life-Cycle Cost and System Sustainment Analysis**

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This course melds elements of traditional engineering economics with manufacturing process and sustainment modeling, and life cycle cost management concepts to form a practical foundation for predicting the cost of products and systems. Various manufacturing cost analysis methods will be presented including: process-flow, parametric, cost of ownership, and activity based costing. The effects of learning curves, data uncertainty, test and rework processes, and defects will be considered. Aspects of system sustainment including the impact on the life cycle (and life-cycle costs) of reliability (warranty), maintenance (sparing and availability), and obsolescence will be treated.

This course will use real life design scenarios from integrated circuit fabrication, electronic systems assembly, and substrate fabrication as examples of the application of the methods mentioned above.

### Introduction

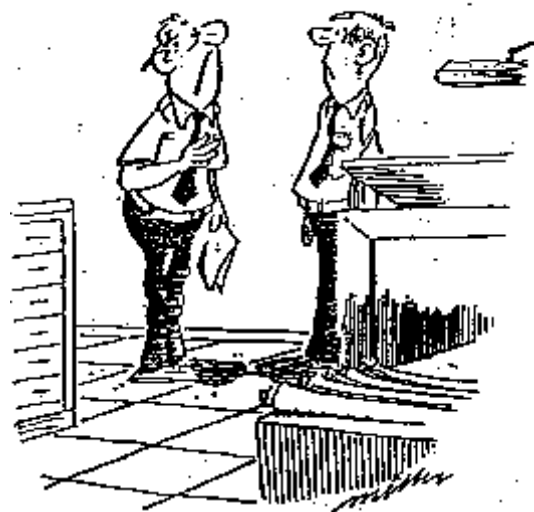
- Basic concepts (cost, price, quality, yield)
- Overview of Engineering Economics

### Manufacturing Cost Analysis

- Process-Flow Analysis
- Quality and Yield (defect models, producibility)
- Cost Of Ownership (COO)
- Activity Based Costing (ABC)
- Parametric Cost Modeling
- Test, Diagnosis and Rework Economics
- Uncertainty Analysis
- Learning Curves

### Life-Cycle Cost and Analysis

- Maintainability and Sustainment
  - Reliability
  - Sparing
  - Warranty Cost Modeling
  - Burn-in
  - Availability and Maintenance
  - Obsolescence
- Return on Investment (ROI)
- Software Development and Support
- Total Cost of Ownership
- Real Options Analysis



I don't know how big it is ...  
 I don't know what its made of ...  
 I'm not sure how many I need ...  
**BUT I NEED A REAL GOOD COST ESTIMATE**