CS599 Software Process Modeling
Week 8

Ray Madachy

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Outline

• Student Presentations
• Quiz #2 Review
• Common Structures Review
• Grades
Software Product Transformations

Cycle time per phase =
start time of first flowed entity - completion time of last flowed entity

Cycle time per task = transit time through relevant phase(s)
Error Co-flows

tasks designed

design rate

design errors

design error generation rate

design error density
Error Detection and Rework

- **Errors**
- **Undetected Errors**
  - Error Generation Rate
  - Error Escape Rate
  - Error Detection Rate
    - Detected Errors
      - Rework Rate
        - Reworked Errors
Personnel Pool

newly hired workforce  experienced workforce

hiring rate  workforce assimilation rate  quit rate
Learning Curve

tasks completed

development rate

productivity

manpower rate

percentage complete

job size

learning
Cost/Schedule/Quality Tradeoffs

- Inherent in system dynamics models that represent defects as levels, and include the associated variable effort and cycle time for rework and testing as a function of those levels.
Example Product Chains

Abdel-Hamid/Madnick 91

Madachy 94

Tvedt 95
Example Defect Chains

Abdel-Hamid/Madnick 91

Madachy 94
Example Personnel Chains

Madachy 94

Abdel-Hamid/Madnick 91
## Current Grades

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<th>HW #3 DPRS (15 points)</th>
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