NEEDS—The National Engineering Education Delivery System

Evaluation Criteria and
Premier Award
NEEDS—The National Engineering Education Delivery System

• An Established Dissemination Tool
  – National program developed within the Engineering Coalitions program (1990-1999)
  – Courseware readily searchable and accessible
  – Expanding to include Science, Mathematics, Engineering and Technology Education (SMETE)

• Established Quality Review Programs
  – Criteria for evaluating courseware
  – *The Premier Award for Excellence in Engineering Education Courseware*
  – New user-based review mechanisms
• National digital library developed within the Engineering Coalitions program (1990-1999)
• Established Quality Review Programs
• Expanding to include Science, Mathematics, Engineering and Technology Education (SMETE)
• Developing digital learning spaces for SMETE teaching & learning communities
Title: Aircraft Dynamics
Authors: Robert F Stengel
Publisher: Princeton University (01/1998)
Courseware Series:
Version: 1999.02.20

Summary: This web-based software teaches the user concepts about aircraft dynamics.
The Premier Award for Excellence in Engineering Education Courseware

• A national competition to identify and reward the authors of high-quality, non-commercial courseware designed to enhance engineering education
  – The Premier Award is about the entire experience of using the courseware by learners, not just the courseware itself
• A dissemination system to distribute the Premier Courseware (via CD’s, ASEE Prism ads, presentations at FIE and ASEE)
About the *Premier Award*

- **Why Create the *Premier Award*?**
  - Establish NEEDS as a source of quality learning materials
  - Provide recognition to developers for time and intellectual

- **How do we decide the *Premier Award*?**
  - A rigorous, on-site 2-day review process with 6-10 judges (engineering content experts, instructional designers, students and publishers)
  - Apply the Premier Award Criteria
Premier Award Criteria

• Instructional Design
  – Will students learn from the courseware?

• Software Design
  – Is it well designed and usable?

• Engineering Content
  – Is the content error free?

We recognize that all the categories are interwoven.
Evaluation Criteria

• **Instructional Design:**
  – Interactivity
  – Cognition/conceptual change
  – Content
  – Multimedia use
  – Instructional use/adaptability

• **Software Design:**
  – Engagement
  – User interface and navigation
  – Technical reliability
Evaluation Criteria, (cont.)

- Engineering Content:
  - Accuracy of content
  - Organization of content
  - Consistency with learning objectives
Premier Courseware of 1998

- **Della Steam Plant**
  - By P. K. Raju and Chetan Sankar at Auburn University

- **MDSolids**
  - By Timothy Philpot at Murray State University

- **SEVE-UNH**
  - Robert M. Henry at the University of New Hampshire

See http://www.needs.org/premier/1998/ for more info
Premier Courseware of 1997

- Virtual Disk Drive Design Studio
- Drill Dissection and Dissection
- Mars Navigator

Distribution - 3000 CD-ROMs
100 Copies to Authors
650 Copies to FIE `97 Participants
300 Copies to Engineering Deans
400 Copies to ASEE `98 Participants
200 Copies to ICEE `98 Participants
200 Copies to FIE `98 Participants

See http://www.needs.org/premier/1997/ for more info
Premier Courseware of 1999

• Two entries selected as the Premier Courseware of 1999
• Official announcement to be made at FIE 1999, San Juan, Puerto Rico on Saturday, November 13, 1999

See http://www.needs.org/premier/1999/ for more info