



# Engineering Systems Doctoral Seminar

## ESD.84 – Fall 2002

Session 15

December 11, 2002

Chris Magee, Joel Cutcher-Gershenfeld, and David Mindell

Guests: Thomas Hughes, Peter Senge





# Session 15: Overview (extended 4 hr. session)

- Welcome and Overview and Introductions (5-7 min.)
- Collective Brainstorming and Dialogue on Engineering Systems as a Field of Study (30-45 min.)
  - Promising Aspects of Engineering Systems as a Field
  - Troubling Aspects of Engineering Systems as a Field
- Comments and Dialogue with Thomas Hughes and Peter Senge (60-75 min.)
- Architecting Engineering Systems as a Field of Study (20-30 min.)
- Lunch (15 min.)
- Book Review and Syllabus Presentations (7-10 min.)
- Construction of the Curriculum for a Ph.D. in Engineering Systems (30-45 min.)
  - Architecture for a Ph.D. program in Engineering Systems
  - Course options associated with various architectures
- Concluding Comments (10-15 min.)





# Class Assignments – Paper 1

## 1 page memo on the following:

- Assume that the topics in this course and the planned topics for the Spring course represent the full scope of what we mean by ESD
- **Architecture:** Recommend an architecture for a Ph.D. in Engineering Systems
  - Two existing options:
    - Current ESD Pilot Ph.D. Architecture:
      - » Systems Theory, Design and Architecture
      - » Socio-Technical/Enterprise Systems
      - » Research Methods
    - ESD Doctoral Seminar Architecture:
      - » Engineering Systems Foundations
      - » Engineering Systems Context
  - Other options are possible
- **Core Courses:** Existing or recommended courses for an ESD Ph.D. program – given your recommended architecture



# Class Assignments – Paper 2

- **1-2 page analytic essay on the following:**
  - **Promising:** Aspects of engineering systems as a field that are highly promising – in terms of both rigorous theory and high impact applications
  - **Troubling:** Aspects of the field that are at risk of having a limited impact – either along the lines of earlier efforts focused on general systems theory or other risks