This course provides a practitioner-oriented definition of systems, including importance of observer
dependence and context, and ideas of meta-systems and subsystems (Lendaris); philosophical
foundations, human dimensions, value systems and associated optimization/sub-optimization, casuistry,
and aspects of life-cycle project management (Hall); inquiring systems (Mitroff & Turoff); key aspects of
human learning organizations, systems thinking, and systems modeling (Senge); qualitative tools for the
systems practitioner, including various graphical tools (Delp); structural modeling (Warfield); and the
multiple perspectives aspect of the systems approach, both “horizontal” and “vertical” (Lendaris, Hall,
and Linstone).

This course fulfills a core SySc requirement.

Prerequisites:  Graduate status or permission of the instructor.

Teaching Style:  Students read assigned papers and prepare “Cognitive Maps” as described in Rabow text
(see below).  Students participate in class dialogue of material.

Grade basis:  Homework: 1/3; Class Participation: 1/3; Final Exam (take-home):1/3.

Homework format:  Last name, First name.
Short homework identifier (e.g., Linstone, Ch 3, Cog Map)
Due date for assignment.
In first line of body, identify article or chapter being reported on [use full citation format -- see below for
examples].
For assignments with with multiple components, start each component on a new page.

E-Mail to instructor:  For any e-mails to me, please use (only) "SySc 513" in the Subject line.

Course Web Site:  http://www.pdx.edu/sysc/courses_fall2008.html -- select Systems Approach

Text books available at Bookstore:

• Hall, A.D., Metasystems Methodology, A new Synthesis and Unification, Pergamon Press, NY, 1989. (Ch. 1, 2,
4-8, 10) Course Pak at Bookstore.
• Linstone, H.A., Decision Making for Technology Executives, Artech House, Boston, 1999. (Ch. 1-5, 9, A.5)
• Senge, P.M. The Fifth Discipline: The Art and Practice of the Learning Organization (Revised Edition),
Doubleday, 2006. (Full book)

Reading Packet at Smartcopy:


Readings .pdf files on course Website:

• Hall, Arthur D. III, “Three Dimensional Morphology of Systems Engineering”, *IEEE Transactions on Systems
Science and Cybernetics*, vol. ssc-5, no. 2, 1969
• Lendaris, G.G., “Appendix B: Interpretive Structural Modelling,” in The Use of Structural Modelling in
pp 329-351, 1979, excerpt.
July/ August, 1986.
• Malone, D., “An Introduction to the Application of Interpretive Structural Modeling”, Chapter 14 in Baldwin,
Ed., Portraits of Complexity, Batelle Memorial Institute, Columbus, OH, Monograph No. 9, 1975.
• Mitroff & Turoff, “Technological Forecasting and Assessment: Science and/or Mythology,” Technology
• Turoff & Mitroff, “A Case Study of Assessment Applied to the ‘Cashless Society’ Concept,” Technology

9/19/08