* In my humble opinion, NONE of these are adequate as a catholic, or universal intro to systems. I attempt here, by using these rarely used or unusual categories to show how diverse the relevant literature is – but it remains in a very fragmented state – exactly what SE and SS should be writing proposals to remedy. But all current efforts are also IMHO not even attempting this scale of integration, synthesis or unification needed.
* Similar things can be said about ALL the SE texts and current Intro to Systems Courses I have witnessed, except, of course, the one I will first offer in our new Master’s in Systems Engineering Program at California State Polytechnic University in Jan, 2016. It is a Core Course (IME 510) that will attempt to summarize ALL of the current fragmented domains across the wide spectrum of systems studies and include a new “science” of systems integrative framework which I call the Systems Processes and Pathology Theory.
* **INTRODUCTORY TEXTS ON SYSTEMS, SYSTEMS SCIENCE, SYSTEMS THEORY, OR GENERAL SYSTEMS THEORY**
* These include texts directly on systems science or general systems theory or books that cover systems-related issues or tools from a generalized perspective. Some are from the engineering perspective, others from the social systems or business/management perspective, still others from the natural systems perspective. The theories that arise from each are not identical. Perhaps they should be sub-clustered as such to avoid confusion, give some order to the entries, and because their coverage is typically from dramatically different tools or perspectives. Notice they are not organized here in any order or priority; not even in chronological order. In my experience, SEs have some knowledge of a small number of these and others are completely unknown to them.

# *Bertalanffy, L., (1969) General Systems Theory: Foundations, Development, Applications.*

# Weiner, N. (196x) Cybernetics*, 2nd Edition: or the Control and Communication in the Animal and the Machine.*

# Miller, J.G. (1978) *Living Systems.* McGraw-Hill, 1102 pp.

# Auyang, S.Y. (1998) *Foundations of Complex-System Theories: In Economics, Evolutionary Biology, and Statistical Physics.* Cambridge U. Press, Cambridge, 394 pp.

# Checkland, P. (1999) Systems Thinking, Systems Practice: A 30-Year Retrospective.

# Iberall, A.S. (1972) Towards A General Science of Viable Systems. McGraw-Hill, 414 pp.

# Lin, Yi (1999) *General Systems Theory: A Mathematical Approach.* IFSR Int’l Series on Systems Science and Engineering, Vol 12 (G. Klir, Series Editor) Kluwer Academic/ Plenum, N.Y., 382 pp.

# Klir, J. (2001) Facets of Systems Science, Springer, 748 pp.

# Klir, J. An Approach to General Systems Theory

# Odum, H.T. (19xx) *Ecological and General Systems: An Introduction to Systems Ecology, Revised Edition.* Univ. Press, pp. but all Odum books are relevant such as Modeling for All Scales: An Introduction to Systems Simulation, (1999); or Environment, Power and Society, (2007)

# Warfield, J.N. (2006) An Introduction to Systems Science.

# Skyttner, L. (2001) *General Systems Theory: Ideas and Applications.* World Scientific, 472 pp.

# Skyttner, L. (2006) *General Systems Theory: Problems, Perspectives, Practice,* 2nd Ed., World Scientific, 536 pp.

# Flood, R.L. & E.R. Carson (1993) *Dealing with Complexity: An Introduction to the Theory and Application of Systems Science.* 2nd Edition, Plenum Press, N.Y., 280 pp.

# Meadows, D. (2008) *Thinking in Systems: A Primer.* Edited by Diana White, Sustainability Institute

# Weinberg, G.M. () An Introduction to General Systems Thinking. Silver Anniversary Edition.

# Senge, P.M. () The Fifth Discipline: The Art & Practice of the

# Smitz, P. Systems Thinking

# Waddington, C.H. (1977) *Tools for Thought.*

# Laszlo, E. () The Systems View of the World: A Holistic Vision

# Wymore, Wayne (1993) *Model-Based Systems Engineering*, CRC Press, Boca Raton.

# Lawson, H. “Bud” (2010) *A Journey Through the Systems Landscape*. College Publications, London. 281 pp.

* See especially Chapters 1 & 2 for Intro to Systems.
* This book is from the currently limited worldview of Systems Engineering as Vol 1 of the new series, Systems Thinking and Systems Engineering which is a cooperative enterprise between College Publications, the School of Systems and Enterprises at Stevens Institute of Technology and the Bertalanffy Center for the Study of Systems Science (BCSSS).

# Capra, Fritiof () Web of Life

# Forester () Systems Dynamics

# Von Forrester, H. ()

# Hammond, D. (2003) *The Science of Synthesis: Exploring the Social Implications of General Systems Theory*. University Press of Colorado, 304 pp.

* Mostly on the social history of five of the main Founders of the General Systems Theory movement of the 50’s, namely, Bertalanffy, Boulding, Gerard, Miller, and Rapoport.
* A good overview and easily readable account of the earliest ideas and efforts at researching a GST

# Mesarovic, M.D. (1975) *General Systems Theory: Mathematical Foundations.* Vol of the Mathematics in Science and Engineering Series.

# Mitchell, M., (2009) *Complexity: A Guided Tour.* Oxford Univ. Press, 349 pp.

# Lineweaver, C.H., P.C.W. Davies, M. Ruse (Ed’s)(2013) *Complexity and the Arrow of Time.* Cambridge Univ. Press, U.K., 357 pp.

* **AUTHOR OF THIS LIST: UPCOMING**
* These are in preparation and probably will be published in by various relevant book series like the one edited by “Bud” Lawson, College Publications, the Series on Systems Thinking and Systems Engineering.

# Troncale, L. (1978) *Nature’s Enduring Patterns.* Publ by Institute for Advanced Systems Studies, California State Polytechnic Univ., 333 pp.

# Troncale, L. (2016) *Introduction to Systems: Towards A Foundational Science of Systems*

# Troncale, L. (2016) *Systems Processes Theory: The Other Theory of Everything.*

# Troncale, L. (2016) *Systems Processes Workbook.*

# Troncale, L. (who knows) *Introduction to Systems Pathology.*

# Troncale, L. (2017) *Nature’s Enduring Patterns.* Revised Edition.

* **INTRODUCTION TO A SINGLE SYSTEMS TOPIC AREA BUT THAT MUST BE INCLUDED IN MORE GENERAL SYSTEMS DISCUSSIONS BECAUSE THAT TOPIC IS PART OF SYSTEMS THEORY (IMHO)**
* Again there are many more entries; these are just examples to illustrate the category.
* Notice that a similar list to this one could be made up of either systems tools, techniques, and methodology, or on social systems science/systems management (not included here)

# Gleick, J. () Chaos.

# Prigogine, I. () series on Non-Equilibrium Thermodynamics

# Eigen, M. () series on Hypercycles

# Haken, H. () series of books on Synergy

# Corning, P. () series of books on Synergy.

# Mandelbrot, () series of books on Fractals

# Mesarovic, M.D. (1970) Theory of Hierarchical, Multi-Level Systems.

# Mesarovic, M.D. (1968) *Systems Theory and Biology: Proceedings of the III Systems Symposium at Case Western Institute of Technology.* Springer, N.Y., 386 pp.

* **INTRODUCTION TO NON-SYSTEMS DISCIPLINES THAT CONTAIN SIGNIFICANT SYSTEMS KNOWLEDGE**
* The following books are popular accounts of theories in physics, astronomy, and other sciences. But notice the annotations. Each includes significant entries on systems processes so can act as sources for knowledge on the essence of systems science or systems theory – that is – systems processes or how systems work in nature. So even if they do not contain the “systems” word in their title or chapter titles, they are important sources for systems science though usually entirely ignored by systems scientists.
* I have many in this category that are not listed here yet.

# Alon, U. () An Introduction to Systems Biology: Design Principles

# Barrow, J.D. (2007) New Theories of Everything. Oxford Univ. Press, 260 pp.

* Contains 28 entries in the Index on systems processes or topics per se including allometries (in text, not in Index), boundaries (4 entries), complexity (2 entries), chaos (3), death, duality, entropy/energy (3), fields, hierarchies (2), information, interactions, oscillations, self-criticality (in text, not in Index), stability (3), structure, and symmetry (4). There is also several discussions of unification attempts and issues, but all in the context of physics.

# Carroll, S. (2010) From Eternity to Here: The Quest for the Ultimate Theory of Time. Penguin Group Pub., 438 pp.

* **APPLICATIONS TO SYSTEMS-LEVEL DESIGN**

# Jen, E. (Ed.) (2005) Robust Design: A Repertoire of Biological, Ecological, and Engineering Case Studies. Oxford University Press, Oxford, UK. (One of the Sante Fe Institute’s Studies in the Science of Complexity), 295 pp.

# Lyle, J.T. ()

* Last chapter on applications of general systems theory to the new field of Regenerative Studies.
* Our university has an entire campus of independent buildings for Regenerative Studies. This phrase was an early recognition of the now more common, buzz-term Sustainability Studies.
* **PERIODICAL SERIES**

# Entire 30 Volumes of the General Systems Yearbook published by the ISSS

# Entire 30-year history of issues, *International J. of General Systems.*

# *Selected Issues of Behavioral Science, now Systems Research and Behavioral Science*