



## Enroll for the NEW ES 810 COURSE: Selected Topics in Enterprise Systems: Limits to Scientific Knowledge



**Dr. John Casti**  
Senior Research Fellow

Beginning in the Spring 2016 semester, Dr. Casti will be teaching ES 810 – Selected Topics in Enterprise Systems: Limits to Scientific Knowledge

### Course Description

The primary goal of science is to offer convincing answers to the basic question: “Why do we see what we do and not see something else?” In confronting this question, science is distinguished from its many competitors in the reality-generation game by the particular sorts of methods and tools the scientist employs. The scientific answer is a set of rules, i.e., an algorithm, usually encoded as a mathematical model or computer program, with which one

can explain the observed phenomena and predict (sometimes) what will happen next.

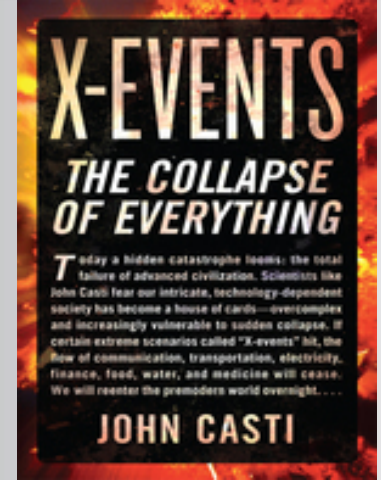
This course explores the possible limitations of rule-based procedures for reality generation. In particular, a number of processes from everyday life, ranging from weather and climatic changes to stock market price fluctuations and even to the outbreak of warfare, will be examined in an attempt to determine the degree to which the science of today is in a position to give a convincing set of rules for predicting and/or explaining such phenomena. The course concludes with some general ideas centered around the results of Gödel and Chaitin for why we can never expect to achieve perfect prediction and explanation— scientific-style— of any natural or human phenomena.

### Class meeting dates

This class will meet in Babbio Center, Room 532B, on the following dates from 6:15PM to 8:45PM:

- January 25, 27, 28
- February 22, 23, 24, 25
- March 28, 30, 31
- April 14, 18, 19, 20

We invite you to register online in your MyStevens account. If you need assistance, please contact our SSE Academic Counselors at [sse.assist@stevens.edu](mailto:sse.assist@stevens.edu).



*Dr. Casti received his Ph.D. in mathematics at the University of Southern California. He worked at the RAND Corporation in Santa Monica, CA, and served as a professor in the USA before becoming one of the first members of the research staff at the International Institute for Applied Systems Analysis (IIASA) in Vienna, Austria. He has also been on the faculty of the Technical University of Vienna and the Santa Fe Institute in the USA.*

*He has published eight technical monographs in the area of system theory and mathematical modeling, as well as 12 volumes of popular science, including *Paradigms Lost*, *Complexification*, *Would-Be Worlds*, *The Cambridge Quintet*, and *Mood Matters*. His 2012 book, *XEVENTS* (ISBN-13: 978-0062088291) addresses the role complexity overload plays in the creation of potentially life-changing events such as the crash of the Internet or the outbreak of a global pandemic.*

*Dr. Casti is currently Director of The [X-Center](#), a private research institute in Vienna focusing on the development of tools for anticipation of extreme events in human society.*