



Systems Engineering with Economics, Probability and Statistics

By C. Jotin Khisty, Jamshid Mohammadi, Adjo A. Amekudzi

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This extensively revised comprehensive textbook, covering a wide range of topics, is suitable for courses at the graduate and undergraduate levels, each with a different emphasis. There is more than enough material to cover two semesters of an undergraduate course, as well as a one semester graduate course. The pedagogy provides enough flexibility for an instructor to teach the topics in systems engineering he or she would like. **Systems Engineering with Economics, Probability, and Statistics, Second Edition** is sufficiently broad-based for undergraduate and graduate programs in various branches of engineering and management.

Key Features:

- Includes a wide range of topics covering the fundamentals and practice applications of probability and statistics (including advanced topics on statistical analysis and testing and interpretation of engineering data), microeconomics, engineering economics, hard systems (such as linear programming, decision analysis, CPM, LOB, and PERT), soft systems analysis (such as Checklands method), and sustainable development and sustainability applications in engineering planning
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- Includes a unique chapter on systems thinking -- a first of its kind in a textbook on systems engineering -- and covers the most recent soft systems structuring methods available in dealing with complexity, uncertainty, and conflict
- Contains two new chapters: one on sustainable development, sustainability, engineering and planning; and the other on case studies dealing with engineering and planning for sustainability
- WAV material includes a solutions manual for those exercise problems that

require numerical solutions -- available from the Web Added Value Download Resource Center at jrosspub.com

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Editorial Review

About the Author

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Dr. Jamshid Mohammadi is a professor of civil and architectural engineering at the Illinois Institute of Technology (IIT), Chicago, Illinois. Over the period 1997-2011, he also served as the chairman of the Department of Civil, Architectural and Environmental Engineering at IIT. He graduated from the University of Illinois at Urbana-Champaign with MS and PhD degrees. His publication records include more than 100 papers in journals and conference proceedings in the areas related to system reliability, probabilistic methods and risk analysis with specific applications in structural engineering. He is an author, co-author or editor of four books and conference proceedings. He served as the associate editor of *Journal of Structural Engineering* of the American Society of Civil Engineers (ASCE) from 1998-2004. Currently, he is the editor of the *ASCE Practice Periodical on Structural Design and Construction*. He is a member of ASCE and has been active at ASCE in several committees including the fatigue and fracture reliability committee and structural reliability committee. He is a licensed professional engineer in Illinois, a registered civil engineer in California and a licensed structural engineer in Illinois.

Dr. Adjo Amekudzi is an associate professor of civil and environmental engineering at the Georgia Institute of Technology in Atlanta, Georgia. She earned her Bachelors degree in Civil Engineering (Structures) from Stanford University, Masters in Civil Engineering (Transportation) from Florida International University, and Masters in Civil Infrastructure Systems and PhD in Civil and Environmental Engineering (Infrastructure Systems) from Carnegie Mellon University. Her research, teaching and professional activities focus on the study, development and application of systems methods to civil infrastructure decision making to promote sustainable development. She has published over fifty papers on sustainability planning and evaluation and infrastructure asset management, and an edited book on infrastructure reporting and asset management. Amekudzi is the founding chair of the *Committee on Sustainability and the Environment* of the Transportation and Development Institute of the American Society of Civil Engineers.

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