

Hajek, Bruce. *Random Processes for Engineers*. Cambridge CB2 8BS, United Kingdom: Cambridge University Press, 2015, 414 pp. \$80.00 (Hardbound).

This engaging introduction to random processes provides students with the critical tools needed to design and evaluate engineering systems that must operate reliably in uncertain environments.

A brief review of probability theory and real analysis of deterministic functions set the stage for understanding random processes, while the underlying measure theoretic notions are explained in an intuitive, straightforward style. Students will learn to manage the complexity of randomness through the use of simple classes of random processes, statistical means and correlations, asymptotic analysis, sampling and effective algorithms. Key topics covered include:

- Calculus of random processes in linear systems
- Kalman and Wiener filtering
- Hidden Markov models for statistical inference
- The estimation maximization (EM) algorithm
- An introduction to martingales and concentration inequalities

Understanding of the key concepts is reinforced through more than 100 worked examples and 300 thoroughly tested homework problems (half of which are solved in detail at the end of the book, with the remaining solutions available online for instructors at www.cambridge.org/hajek).

Bruce Hajek has been an avid student, instructor, and user of probability theory for his entire career. He is the Mary Lou and Leonard C. Hoeft Chair of Engineering, Center for Advanced Study Professor of Electrical and Computer Engineering, and Professor of Electrical and Computer Engineering, and Professor in the Coordinated Science Laboratory at the University of Illinois. Among his many awards, he is a member of the US National Academy of Engineering and a recipient of the IEEE Koji Kobayashi Computers and Communications Award. He is co-author, with E. Wong, of the more advanced book, *Stochastic Processes in Engineering Systems*, 2nd edn, 1985.