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## Optimal Control and Estimation (Dover Books on Mathematics)

By Robert F. Stengel, Mathematics



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"An excellent introduction to optimal control and estimation theory and its relationship with LQG design. . . . invaluable as a reference for those already familiar with the subject." — *Automatica*.

This highly regarded graduate-level text provides a comprehensive introduction to optimal control theory for stochastic systems, emphasizing application of its basic concepts to real problems. The first two chapters introduce optimal control and review the mathematics of control and estimation. Chapter 3 addresses optimal control of systems that may be nonlinear and time-varying, but whose inputs and parameters are known without error.

Chapter 4 of the book presents methods for estimating the dynamic states of a system that is driven by uncertain forces and is observed with random measurement error. Chapter 5 discusses the general problem of stochastic optimal control, and the concluding chapter covers linear time-invariant systems. Robert F. Stengel is Professor of Mechanical and Aerospace Engineering at Princeton University, where he directs the Topical Program on Robotics and Intelligent Systems and the Laboratory for Control and Automation. He was a principal designer of the Project Apollo Lunar Module control system.

"An excellent teaching book with many examples and worked problems which would be ideal for self-study or for use in the classroom. . . . The book also has a practical orientation and would be of considerable use to people applying these techniques in practice." — *Short Book Reviews*, Publication of the International Statistical Institute.

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