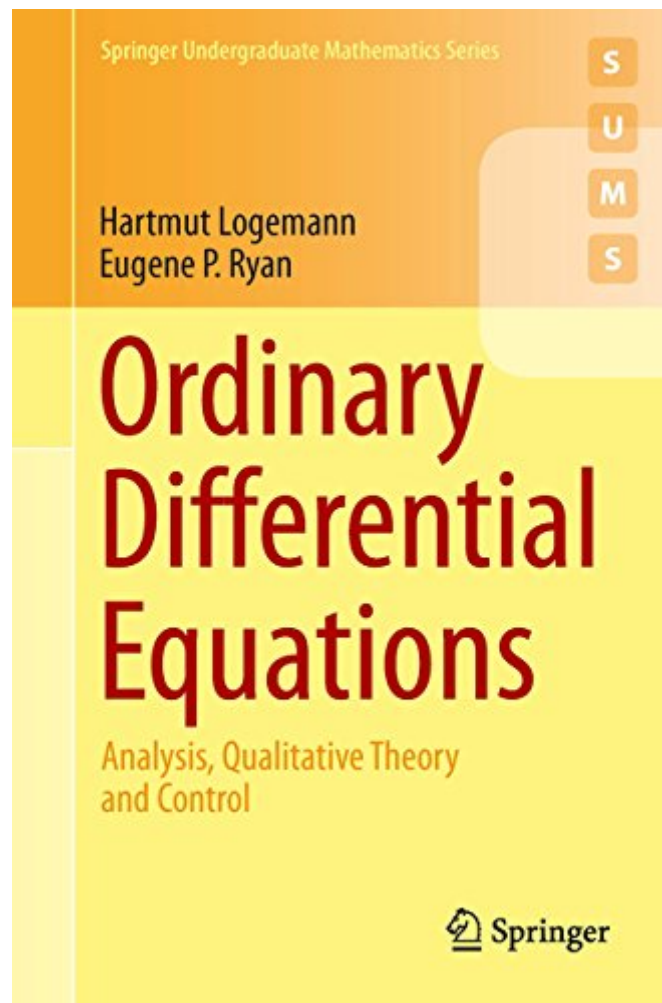# Ordinary Differential Equations: Analysis, Qualitative Theory And Control (Springer Undergraduate Mathematics Series)

Synopsis

The book comprises a rigorous and self-contained treatment of initial-value problems for ordinary differential equations. It additionally develops the basics of control theory, which is a unique feature in current textbook literature.The following topics are particularly emphasised:â ¢ existence, uniqueness and continuation of solutions,â ¢ continuous dependence on initial data,â ¢ flows,â ¢ qualitative behaviour of solutions,â ¢ limit sets,â ¢ stability theory,â ¢ invariance principles,â ¢ introductory control theory,â ¢ feedback and stabilization.The last two items cover classical control theoretic material such as linear control theory and absolute stability of nonlinear feedback systems. It also includes an introduction to the more recent concept of input-to-state stability.Only a basic grounding in linear algebra and analysis is assumed. Ordinary Differential Equations will be suitable for final year undergraduate students of mathematics and appropriate for beginning postgraduates in mathematics and in mathematically oriented engineering and science.

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Excellent book and excellent service!

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