Measure Theory and Integration

About the Book
Integration is one of the two cornerstones of analysis. In the fundamental work of Lebesgue, integration is presented in terms of measure theory. This introductory text starts with the historical development of the notion of the set theory and integral theory. From here, the reader is naturally led to the consideration of the Lebesgue Integral, where abstract integration is developed via the measure theory. The important topics like the Outer Measure, Cantor's Ternary Set, Measurable Function, the Lebesgue Integral, Fundamental Theorem of Calculus, Lp-spaces, Fubini's Theorem, the Radon-Nikodym Theorem, and so on are discussed. The text is written in an informal style to make the subject matter easily comprehensible. Concepts have been developed with the help of motivating examples, probing questions, followed by numerous exercises. The book is suitable both as a textbook for an introductory course on the topic or for self-study. The core material is interspersed with examples, theorems, recapitations, multiple choice questions, true/false questions and fill-in-the-blanks questions after relevant discussions of the topics.

Salient Features
Contains a detailed account of some of the popular measures like Lebesgue, Borel, Jordan. Integration as a measuring technique is appropriately discussed.
All the theorems are accompanied by detailed, step-by-step proofs.
Each chapter ends with a rich suite of exercise problems, objective questions and summary.
Contains a useful appendix on important theorems on Set Theory.

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