The book is the outgrowth of a set of notes I developed for an undergraduate course in financial mathematics offered at The George Washington University. It is intended for an audience with a knowledge of calculus through derivatives and integrals of functions of several variables. Otherwise, the book is self-contained. All of the required probability theory is developed from first principles and is introduced as needed. Finance theory is explained in detail under the assumption that the reader has no background in the subject. A central device in the book is the systematic use of martingale methods to construct the risk-neutral probability measures used to price derivatives. The text makes frequent use of spreadsheets both in examples and exercises to give numerical substance to theoretical models.

The primary goal of the book is to provide a mathematically rigorous, straightforward account of option pricing. I have tried to describe the intricate financial models treated in graduate texts in a direct way that can be understood by readers with only the above-mentioned calculus prerequisite. The book contains numerous examples and 200 exercises designed to help the reader gain expertise in the methods of financial calculus. The exercises range from routine applications of the text material to spreadsheet projects to the pricing of a variety of complex financial instruments. Detailed solutions of the odd-numbered problems are given in an appendix.