

Introduction to Mathematical Biology

S. I. Rubinow

Developed from the author's course in mathematical biology at Cornell University, this volume is designed to cultivate in graduate biology students an awareness of and familiarity with applications of mathematical techniques and methods related to biology.

This text explores five areas of mathematical biology, which are unified by their underlying mathematical structure. The first three subjects (cell growth, enzymatic reactions, and physiological tracers) are biological; the final two (biological fluid dynamics and diffusion) are biophysical. Introduced in an order of progressive mathematical complexity, the topics essentially follow a course in elementary differential equations, although linear algebra and graph theory are also touched upon.

Free of mathematical jargon, the text requires only a knowledge of elementary calculus. A set of problems appears at the end of each chapter, with solutions at the end of the book. In addition to its value to biology students, this text will also prove useful to students with backgrounds in mathematics, physics, and engineering, who possess little knowledge of biology but nevertheless take an interest in the quantitative approach.

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