



Mathematics for the Life Sciences: Calculus, Modeling, Probability, and Dynamical Systems (Hardback)

By Glenn Ledder

Springer-Verlag New York Inc., United States, 2013. Hardback. Condition: New. 2013 ed.. Language: English . Brand New Book. Mathematics for the Life Sciences provides present and future biologists with the mathematical concepts and tools needed to understand and use mathematical models and read advanced mathematical biology books. It presents mathematics in biological contexts, focusing on the central mathematical ideas, and providing detailed explanations. The author assumes no mathematics background beyond algebra and precalculus. Calculus is presented as a one-chapter primer that is suitable for readers who have not studied the subject before, as well as readers who have taken a calculus course and need a review. This primer is followed by a novel chapter on mathematical modeling that begins with discussions of biological data and the basic principles of modeling. The remainder of the chapter introduces the reader to topics in mechanistic modeling (deriving models from biological assumptions) and empirical modeling (using data to parameterize and select models). The modeling chapter contains a thorough treatment of key ideas and techniques that are often neglected in mathematics books. It also provides the reader with a sophisticated viewpoint and the essential background needed to make full use of the...

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