

Mathematical concepts and methods in modern biology : using modern discrete models / edited by Raina Robeva, Terrell L. Hodge

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20427211&lokasi=lokal>

Abstrak

Mathematical concepts and methods in modern biology offers a quantitative framework for analyzing, predicting, and modulating the behavior of complex biological systems. The book presents important mathematical concepts, methods and tools in the context of essential questions raised in modern biology. Designed around the principles of project-based learning and problem-solving, the book considers biological topics such as neuronal networks, plant population growth, metabolic pathways, and phylogenetic tree reconstruction. The mathematical modeling tools brought to bear on these topics include boolean and ordinary differential equations, projection matrices, agent-based modeling and several algebraic approaches. Heavy computation in some of the examples is eased by the use of freely available open-source software.