

ZMATH 2015f.00788

Cornette, James L.; Ackerman, Ralph A.

Calculus for the life sciences: a modeling approach.

MAA Textbooks. Washington, DC: The Mathematical Association of America (MAA) (ISBN 978-1-61444-615-6/ebook). xvi, 713 p., electronic only. (2015).

Publisher's description: Freshman and sophomore life sciences students respond well to the modeling approach to calculus, difference equations, and differential equations presented in this book. Examples of population dynamics, pharmacokinetics, and biologically relevant physical processes are introduced in Chapter 1, and these and other life sciences topics are developed throughout the text. The ultimate goal of calculus for many life sciences students primarily involves modeling living systems with difference and differential equations. Understanding the concepts of derivative and integral is crucial, but the ability to compute a large array of derivatives and integrals is of secondary importance. Students should have studied algebra, geometry and trigonometry, but may be life sciences students because they have not enjoyed their previous mathematics courses. This text can help them understand the relevance and importance of mathematics to their world. It is not a simplistic approach, however, and indeed is written with the belief that the mathematical depth of a course in calculus for the life sciences should be comparable to that of the traditional course for physics and engineering students.

Classification: I15 M65