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This is an introduction to stochastic calculus. I will assume that the reader I will assume that the reader has had a post-calculus course in probability or statistics.

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22 CHAPTER 2 USING CALCULUS TO MODEL EPIDEMICS Susceptible Infected Removed Figure 2.1: Disease Compartments 2.1.2 Variables for Model 1 t = the time in days with t=0 at the start of observation

Chapter 2 Using Calculus to Model Epidemics

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1. Introduction The following notes aim to provide a very informal introduction to Stochastic Calculus, and especially to the It^o integral and some of its applications.

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Chapter 1 Preface This set of notes has been developed in conjunction with the teaching of Math 31S (Calculus II with Applications to the Life Sciences) at Pomona College

Calculus II with Applications to the Life Sciences

Michelle H. Wilkerson-Jerde, Uri Wilensky Northwestern University, Evanston, IL, USA {m-wilkerson;uri}@northwestern.edu Abstract Certainly one of the most powerful and important modeling languages of our time is the Calculus.

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Engineering Applications in Differential and Integral Calculus* ALAN HORWITZ Mathematics Department, Delaware County Campus, Penn State University, Pennsylvania, USA

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