

FS/Ma12 **The Mathematics of Enzyme
Kinetics**

Freshmen Seminar 6 units (2-0-4)

Spring 2015

MW 3-4 PM 159 Sloan

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 and Robert D. Tanner

Enzyme kinetics is at the heart of biochemistry. We will begin with a down to earth discussion of how, as catalysts, enzymes are used to convert substrate to product. Then we will mathematically model their activity by using explicit equations. Under ideal conditions, their dynamics is described by a system of coupled *first order* differential equations. The difficulty will be seen to stem from them being non-linear. However, under a steady state hypothesis, they reduce to a simpler equation, whose solution can describe the late time behavior. The students will apply it to some specially chosen, real examples. If time permits, we will also discuss a new approach.

The only pre-requisites are Ma 1a,b.