

# Math 3C: Ordinary Differential Equations with Linear Algebra for Life Sciences Students

## Course description and learning outcomes

Lecture, three hours; discussion, one hour. Requisite: course 3B with a grade of C- or better. Multivariable modeling, matrices and vectors, eigenvalues and eigenvectors, linear and non-linear systems of differential equations, probabilistic applications of integration. P/NP or letter grading.

## Textbook

“Calculus for the Life Sciences” by Schreiber, Smith and Getz.

## *General Course Outline.*

### Schedule of Lectures:

Week	Chapter	Topics
1	7.1	Histograms, PDFs and CDFs
	7.2	Improper integrals
2	7.3	Mean and Variance
	7.4	Bell shaped distributions
3	7.5	Life tables
4		Catch-Up, Review
5	8.1	Multivariate Modeling
6	8.2	Matrices and Vectors
7	8.3	Eigenvalues and Eigenvectors
		Catch-Up, Review

8	8.4	Systems of Linear Differential Equations
9	8.5	Non-linear systems
10		Catch-Up, Review

## **Grading policy**

Homework	15%
Mid-term exam (2)	20%
Final exam	45%

(You must take the final exam to pass the class. There are no make-up exams. All exams are closed book. You need only bring something to write with; all paper will be provided. No late homework is accepted. The lowest HW score will be dropped.)