MATH 691- MATHEMATICAL BIOLOGY

The use of mathematical models is accelerating in the fields of Biology and Medicine. These models are used to study a variety of phenomena from the interactions of different populations to the control of the secretion of different hormones in the body to the spread of disease within a population. Understanding how these processes work is critical to not only researchers, but in the long term can save lives.

This class will examine many of the important models that have been used in different areas of biology and medicine, as well as describe in detail the techniques used to analyze these models. Areas of mathematics covered will include discrete dynamical systems, systems of ordinary differential equations, and systems of partial differential equations. Applications will be drawn from ecology, neurobiology, cardiology, and epidemiology.