Coming in the fall 2001 to the Math Department at UBC

Math 361: Introduction to Mathematical Biology

This course gives an overview over basic **mathematical models for biological processes**. The biological problems that will be discussed range from very small scales (e.g. intracellular trafficking) to large scales (e.g. ecological and evolutionary processes). The models will be analyzed using tools from **dynamical systems theory**.

Topics include:

- Chaotic population dynamics
- Excitable cells and neurophysiology
- Evolutionary game theory
- Epidemiology and the spread of diseases
- Spatial pattern formation during morphogenesis

Calendar Entry:

Math 361(3) Introduction to Mathematical Biology. Mathematical modeling of basic biological processes in ecology, physiology, neuroscience and genetics. Dynamic behavior of difference equations, differential equations, and partial differential equations, explained with reference to concrete biological examples. Pre-requisite: Biol 120 and one of Biol 301, Math 215, Math 255, Math 256; or permission from the instructor. [3-0-0].

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The 21st century: the century of Biocomplexity