



University of Illinois at Urbana-Champaign
DEPARTMENT OF PHYSICS

COURSE ANNOUNCEMENT

Spring Semester 2001

Physics 498 TBP

THEORETICAL BIOPHYSICS

Professor Klaus Schulten

Time: 2:30-3:50 TUTH
Place: 158 LOOMIS

Credit: 1 unit
Call Number: 06507

An introduction to self-organization and processes in the living cell from the theoretical physics perspective.

The course will be based on case studies from the fields of photosynthesis, vision, cell signaling, cell motion, gene regulation, protein folding, and neural information processing. Physical concepts, mathematical techniques, and computational methods required in modern biophysics will be introduced.

Emphasis will be on the multi-scale organization and multi-level mechanisms of integral facilities of living systems. The latter mechanisms link various domains of physics, like classical and quantum mechanics, stochastic processes, molecular and cellular electronics, self-organization, networks. The course will view biological systems as information processing devices and combine a top-down (genomics) with a bottom-up (molecular) description.

Biological Cell

