

## **PHYS 1610: Biological Physics**

**Registration information:** PHYS 1610 Section 01, Fall 2009

**Meeting time:** Tuesdays and Thursdays, 2:30 pm – 3:50 pm

**Classroom:** Barus and Holley 153

**Instructor:** Derek Stein  
Barus and Holley 712  
(I can often be found in my lab: Barus and Holley 644/650)  
Tel.: 863-2581  
[derek.stein@brown.edu](mailto:derek.stein@brown.edu)

**Office hours:** Tuesdays, Wednesdays and Thursdays from 10 am – 11 am  
...or drop by anytime  
...or e-mail me with question or to set up an appointment

### **Course description:**

A survey of the fundamental physics that underlies biology and medicine. An introduction to the structure and function of cells, proteins, nucleotides, and membranes. Fundamental physical concepts including statistical thermodynamics, electrostatics and electrokinetics in solution, fluid mechanics, chemical equilibrium and reaction rates. Mechanisms behind cellular functions including molecular motors, nerve signals, and regulatory pathways.

**Prerequisites:** PHYS 0050, 0060, and MATH 0180 or equivalents

<b>Grading:</b> In-class presentations about recent biophysical research	10%
Problem sets (probably 5 in total)	30%
In-class mid-term	15%
Final exam	45%