

## **Applied BioPhysical Chemistry II**

(應用生物物理化學二, 543 M4890)

**Syllabus, Spring 2008**

**Instructor:** Sheng D. Chao (趙聖德) Tel: 3366-5066 (Room 222)

**Credit:** 3

**Lecture hours:** TBA

**Classroom:** IAM(應力所) TBA

### **References:**

- (1) D. A. McQuarrie and J. D. Simon, *Physical Chemistry* (University Science Books, Sausalito, 1997).
- (2) P. Atkins and J. de Paula, *Physical Chemistry for the Life Science* (Freeman& Co., New York, 2006).
- (3) T. Engel, *Quantum Chemistry and Spectroscopy* (Pearson, San Francisco, 2006).
- (4) A. Cooper, *Biophysical Chemistry* (RSC, Cambridge, 2004).

### **Grading Policy:**

- Quiz: 30%
- Midterm project report: 30%
- Final presentation: 40%

### **Course Description & Outline:**

This course is designed primarily for engineering students to enlarge their knowledge base. The aim is to apply modern physical chemistry to problems of biological importance such as bioenergetics, enzyme kinetics and transport dynamics of biomolecules. In the second part of this course, more quantitative discussion on the techniques from physical chemistry will be emphasized.

- Physical chemistry
- Applied Quantum Chemistry
- Applied spectroscopy
- Applications: Calculations of Intermolecular Forces
- Applications: Modeling Dynamic Processes in Biosensors
- Selected topics

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