

CHEM 361, FALL 2016
PHYSICAL BIOCHEMISTRY

Instructor: Prof. Ho Leung Ng. Office: Bilger 208b. email: hng@hawaii.edu. I usually answer emails within 1-2 business days. Please post questions to Piazza prior to emailing me for a faster response.

Classroom: POST 126. **Hours:** 12:00-1:15 T/Th, 3 credit hours

Textbook: **The Physical Chemistry of the Life Sciences**, by Peter Atkins and Julio de Paula. Optional but highly recommended: **Mathematics for physical chemistry**, by Robert Mortimer.

Office hours: Office hours are Tues 2:00-3:00 in Bilger 208. Please email me if you need to schedule an appointment outside of office hours.

Course Policies:

- 1- There will be no makeup exams. If you miss an exam and have a valid excuse (doctor's note or equivalent), the weighting of the other exams will be adjusted accordingly. Only **one** exam can be missed during the course, and the final exam **cannot** be missed.
- 2- Regular attendance in lecture is highly recommended, but not mandatory. The aim of the lecture session is to clarify key concepts, demonstrate problem solving, and connect concepts to applications. Topics not included in the text will be covered in class and appear on tests.
- 3- Academic dishonesty will not be tolerated. Cheating in the form of copying, plagiarism, altering information, or using electronic aids on exams will result in judicial proceedings in accordance with the University of Hawaii Student Conduct Code.

Piazza

Please make sure you have access to Piazza (www.piazza.com), the free, online resource for the course. It is a popular, new platform for helping each other with questions (peer learning). Please post questions about science or course logistics there before emailing me so we can open the question for class discussion. I will also be active on Piazza. Piazza also has a nice mobile platform so you can use it 24/7. Students that are the most active and helpful on Piazza will be awarded extra points at the end of the term.

Sign up at piazza.com. piazza.com/hawaii/fall2016/chem361

Grading and Student Evaluation

- Homework will count for 10% of the final grade. Homework will be done on Laulima. I strongly encourage you to work in groups on the homework. It will be easier, save you time, and you will learn more. Each person will need to enter her own homework to receive credit for the assignment. Please do not share your work and answers beyond your study group (not the entire class). No late homework will be accepted.
- Two midterm exams each worth 30% of the final grade. Use of electronic devices besides standard calculators will not be allowed during the exams. Exams are open book and open notes. Exam questions will be based from assigned homework problems, the textbook, and class content. On the day before and of an exam, I do not answer questions about the exam material.
- The final exam will be 30% of your grade and cover material from the entire course.

Student Disabilities

I am committed to making this class accessible to all students. If you have a disability and have not voluntarily disclosed its nature and the support you need, you are invited to contact the KOKUA Program of UH (<http://www.hawaii.edu/kokua>), or talk with me in order to get any accommodation you might need to take the course. This information will be kept confidential. Please do this as early in the course as possible.

TENTATIVE LECTURE SCHEDULE

1. Ch. 1 - First law of thermodynamics
2. Ch. 2 - Second law of thermodynamics and Gibbs energy
3. Ch. 3 – Phase equilibria
4. Ch. 4 – Chemical equilibria

EXAM 1 - Tuesday, Sep 27

5. Ch. 5 - Electrochemistry
6. Ch. 6 - Kinetics: Rates of chemical reactions
7. Ch. 7 – Reaction mechanisms and dynamics
8. Ch. 8 – Biochemical processes

EXAM 2 - Thursday, Nov 10

9. Ch. 9 – Quantum mechanics
10. Ch. 10 – Chemical bonds
11. Ch. 11 - Macromolecules and self assembly
12. Ch. 12 - Spectroscopy

FINAL EXAM, Thursday, Dec 15th, 12:00-2:00 pm.