CHM 4411: PHYSICAL CHEMISTRY I

Equilibrium and Change

Summer 2017, Section 7395, Period 3, Room LEI 207, MTWF

Instructor: S. O. Colgate, 314 CLB, 392-2155 *colgate@chem.ufl.edu*

Office Hours: T Per 4 and by appointment.

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TA Office Hours and locations tba

Text: Physical Chemistry P. Atkins and J. de Paula, 10th Ed, Freeman &Co, NY

Note: The earlier 9th edition of this book is out of print but radially available, especially online (Amazon, Barnes and Nobel, eCampus.com, and many others). This edition is an acceptable alternative. Reading and homework assignments will be made with reference to both editions.

SYLLABUS

CHM 4411 is the first in a two-term sequence, CHM 4411/4412 in undergraduate physical chemistry. This course includes the study of **THERMODYNAMICS**, the **KINETIC MOLECULAR THEORY**, and **REACTION KINETICS**. The material is presented in the *Foundations*, Part 1:*Chapters 1 – 6*, and Part 3:*Chapters 20 – 23* of the textbook. Acquiring more than a superficial understanding of all of these subjects in a single term is improbable, and it is necessary to select what material will be covered well and what will be covered lightly or omitted. While it is important to have an acquaintance with this broad subject matter, even though it is impossible to study and thoroughly understand all of it in such a short period, it is equally important for university students to learn something of the deeper meaning of science, its

rules, its strengths, its limitations. The instructor's choice for dealing with this problem is this: Weekly reading assignments are made to assure that, over the course of the term, each student

1- reads all of this material, as presented in the textbook
2- gains sufficient understanding to answer questions and work select problems at the ends of chapters, and
3- submits for grading solutions to sets of specific homework problems based on these reading assignments.

Simultaneously, the in-class lectures will have a narrower focus. They begin with a look at the philosophical principles of physical science then explore how the application of those principles can lead, and has led, to a growing understanding of the nature and behavior of matter and energy.

This classroom process will often probe more deeply into the subset of lecture topics than is covered in traditional textbooks, and ***students will be expected to demonstrate understanding of this lecture material on the exams***. Most exam questions will relate ***specifically to material presented in class***, whether or not that material is included in the reading assignments or represented in the homework assignments. The only way for the student to be sure what might be covered in the exams is to attend class, where the emphasis of topics will be evident. Each student should understand that ***the content of the course is essentially what is presented in class and included in assignments***. The textbook will be helpful, but it is no substitute for understanding the lectures. Supplementary material will often be posted on the class web site to assist with understanding and learning the lecture material. As a minimum, each student should complete each reading assignment, maintain a well-organized book of lecture notes, and work a set of problems each week. The reading and homework assignments are made in advance for the term and posted on the class website. Some problems will be collected for grading. Work that is turned in for grading must be your own. You may use any resource to learn the material, but what you write down ***MUST*** reflect your own understanding. Do not copy one another's work! Doing so is a violation of the UF Honor Code and of basic ethics. Students who cannot resist the temptation to cheat disgrace not only themselves, but the University and all its students, especially their classmates. Sophisticated software now exists for identifying copied or closely paraphrased work. We prefer not to use this capability, but if necessary to protect those who follow the rules from the abuses of those who choose not to, we will.

There will be four in-class exams during the term. As stated above, the material covered in each exam will be ***principally*** based on the ***lecture material*** presented with emphasis on that material presented during the three-week period preceding the exam. ***The emphasis will be on the material presented in the lectures.***

There is no final exam. A percentage of credit earned will be computed according to the following schedule:

Eight Homeworks @ 2.5% each	**20%**
Four Exams @ 20% each	**80%**

The final letter grade will be determined from the final percentage credit earned. The instructor cannot state exactly what the point requirements will be for the various letter grades, but you may judge yourself approximately by this schedule:

A	**100% to 85%**
A-	**< 85% to 80%**
B+	**< 80% to 78%**
B	**< 78% to 72%**
B-	**< 72% to 70%**
C+	**< 70% to 68%**
C	**< 68% to 62%**
C-	**< 62% to 60%**
D+	**< 60% to 58%**
D	**< 58% to 50%**

***Class attendance*: Refer to the official UF policy at**
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

All effort should be made to attend all class meetings and take all exams at the scheduled times. Makeup exams for excusable absences will be arranged with the instructor.

Honor Code. Each student is expected to be familiar with the UF Student Honor Code, the provisions of which may be found at these web sites:

http://regulations.ufl.edu/wp-content/uploads/2012/09/4040.pdf
http://regulations.ufl.edu/wp-content/uploads/2012/09/4041.pdf

Keep on mind that on all work submitted for credit by students at the University of Florida, the following pledge is either required or implied:
"***On my honor, I have neither given nor received unauthorized aid in doing this assignment***."

***Counseling*-** Students facing difficulties completing the course or who are in need of counseling or urgent help should call the on-campus Counseling and Wellness Center (352-392-1575; http://www.counseling.ufl.edu/cwc/).

Special Accommodations Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

Important Notice

We will use the web-based software, Canvas, for communication and record keeping. Registered students may log on to this site at http://lss.at.ufl.edu/ using your Gatorlink ID and password. Look for announcements, assignments, and messages posted there. Keep in touch with one another, check your grades, and post your comments.