PHYSICAL CHEMISTRY I

CHEM 3423      SEC 001      SPRING SEMESTER 2016

Objective: Introduction to the fundamentals of thermodynamics and chemical kinetics.
Lectures: MWF 10:30 – 11:20 am, Dale Hall 0122
Instructor: Dr. Ulrich H.E. Hansmann
Stephenson Life Sciences Research Center 3040
Office Telephone: 325-2386
Office Hours: MW 11:45 am – 1:00 pm (SLSRC 3040)
Online Course Management: http://learn.ou.edu


Lecture Schedule:
Chapter 1: The Nature of Physical Chemistry and the Kinetic Theory of Gases.
Jan. 20, 22, 25 (quiz), 27, 29, Feb. 1 (quiz), 3, 5
Chapter 2: The First Law of Thermodynamics.
Feb. 8 (quiz), 10, 12, 15 (quiz), 17, 19
Chapter 3: The Second and Third Laws of Thermodynamics.
Feb. 22 (quiz), 24, 26, 29 (quiz), March 2, 4

Exam 1: Chapter 1 – 3 (March 7, Monday, 7-8.15 pm; Dale Hall 122)

Chapter 4: Chemical Equilibrium.
March 7, 9, 11, 21 (quiz), 23, 25

Chapter 5: Phases
March 28 (quiz), 30

Chapter 6: Phase Equilibrium.
April 1, 4 (quiz), 6, 8

Exam 2: Chapter 4, 5, 6 (April 11, Monday, 7-8.15 pm; Dale Hall 122)

Chapter 9: Chemical kinetics I.
April 11, 13, 15, 18 (quiz), 20, 22, 25 (quiz), 27

Chapter 10: Chemical kinetics II.
April 29, May 2 (quiz), 4, 6 (review)

Final: Chapter 1, 2, 3, 4, 5, 6, 9, 10 (May 12 Tuesday, 8:00 – 10:00 am; Dale 0122)

Course Grading Scheme:
1. Homework Assignments (0%): Problem sets will be assigned weekly on the course website. It is essential that you work all of these problems and understand the course material at a satisfactory level. The problems encountered in the homework assignments will be of comparable difficulty as the problems encountered in the quizzes and examinations. On
occasion, a problem from homework assignments may be used in quizzes and examinations with
minor numerical changes. Solutions to the homework problems will be posted on D2L and/or the
course web-site.

2. Quiz (27%): A 10-minute quiz will be given on most Mondays at the beginning of the class.
No make-up quizzes will be given. Unless instructed otherwise, you are only allowed to use
the information provided on the quiz paper. You must bring your own (non-programmable)
calculator. Only the top nine out of twelve quizzes will be used to compute the final score,
with each quiz contributing 3% to the final score.

3. Examinations (40%): Two midterm examinations of 75 min length will be given, each
counting 20% to the final grade. No make-up examinations will be given. So mark your
calendar! You are only allowed to use the information provided on the examination paper.
You must bring your own (non-programmable) calculator. No smart phone, smart watch or
similar instruments are allowed during exam.

<table>
<thead>
<tr>
<th>Date</th>
<th>Chapters</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 7</td>
<td>1, 2, 3</td>
</tr>
<tr>
<td>April 11</td>
<td>4, 5, 6</td>
</tr>
</tbody>
</table>

4. Final Exam (33%): The final examination will be given on Tuesday, May 12, 8:00 – 10:00
am. It will be a comprehensive two-hour examination covering all of the course materials. No
make-up final examination will be given. You are only allowed to use the information
provided on the examination paper. You must bring your own (non-programmable) calculator.
No smart phone, smart watch or similar instruments are allowed during exam.

5. Final Grade: The minimum final score for a guarantee ‘A’ is 90%; ‘B’ is 77%; ‘C’ is
60%; ‘D’ is 50%. The grade will be ‘F’ if the final score is below 50%.

6. Grading Errors and Extra Credits: All grading mistakes have to be resolved within one
week after the quizzes or examinations are returned to the students. Grading mistakes found in
the final examination have to be resolved immediately with the instructor. Solutions to all
examinations will be posted on the web within a week after they are graded. No grade changes
will be made at the end of term on the basis of a student wishing to obtain a higher grade than
was earned by point total. No extra credit will be given.

University Policies:
Academic Integrity: Cheating is strictly prohibited at the University of Oklahoma, because it
devalues the degree you are working hard to get. As a member of the OU community it is your
responsibility to protect your educational investment by knowing and following the rules. For
specific definitions on what constitutes cheating, review the Student’s Guide to Academic
Integrity at http://integrity.ou.edu/students_guide.html. In order to be successful in this class, all
work on exams and quizzes must be yours and yours alone. You may not receive outside help.
On examinations and quizzes you will never be permitted to use your notes, textbooks, Should
you see someone else engaging in this behavior, I encourage you to report it to myself or directly
to the Office of Academic Integrity Programs. That student is devaluing not only their degree,
but yours, too. Students engaging in academic misconduct (including cheating, plagiarism, and
any other action that may improperly affect evaluation) will be subject to sanctions in accordance
with the Norman Campus Academic Misconduct Code. Dr. Hansmann will assign an "F" for the course and may recommend expulsion from the University for such violations.

**Accommodation Policy:** The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me as soon as possible so that we can discuss accommodations necessary to ensure full participation and to facilitate your educational opportunities. Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course. The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 405/325-3852 or TDD only 405/325-4173. For more information please see the Disability Resource Center website [http://www.ou.edu/drc/home.html](http://www.ou.edu/drc/home.html).

**Adjustments for Pregnancy/Childbirth Related Issues:** Should you need modifications or adjustments to your course requirements because of documented pregnancy-related or childbirth-related issues, please contact Dr. Hansmann or the Disability Resource Center at 405/325-3852 as soon as possible. Please see [http://www.ou.edu/eoo/faqs/pregnancy-faqs.html](http://www.ou.edu/eoo/faqs/pregnancy-faqs.html) for answers to commonly asked questions.

**Codes and Policies of Behavior Policy/Title IX Resources and Reporting Requirement:** Each student should acquaint his or her self with the University codes, policies, and procedures involving academic misconduct, grievances, sexual and ethnic harassment, and discrimination based on physical handicap. For any concerns regarding gender-based discrimination, sexual harassment, sexual misconduct, stalking, or intimate partner violence, the University offers a variety of resources, including advocates on call 24/7. To learn more or to report an incident, please contact the Sexual Misconduct Office at 405-325-2215 (8 to 5, M-F) or OU Advocates at 405-615-0013 (24/7). Also, please be advised that a professor/GA/TA is required to report instances of sexual harassment, sexual assault, or discrimination to the Sexual Misconduct Office. For more information, please see [http://www.ou.edu/eoo](http://www.ou.edu/eoo).

**Religious Observance:** It is the policy of the University to excuse absences of students that result from religious observances and to provide without penalty for the rescheduling of examinations and additional required classwork that may fall on religious holidays. Students who plan to observe a religious holiday should notify Dr. Hansmann as soon as possible in order to make appropriate arrangements for classwork or taking of examinations.

**Disclaimer:** I reserve the right to change by addition and/or subtraction any and/or all materials contained in this syllabus. This includes, but is not limited to, course content, assignments, scheduled dates, and fraction(s) of the final grade assigned to individual items within the course. Although your attendance at the lecture is not required, you are responsible for any announcements made in class, including changes in the quiz and examination schedule, course content, assignments, scheduled dates, and fraction(s) of the grade assigned to individual items within the course. If changes become necessary, I will announce them as early as possible.

*Last update: Jan, 8, 2016*