

PHYSICAL CHEMISTRY II

CHEM 3523 SEC 001 FALL SEMESTER 2023

Instructor: Dr. Ulrich H.E. Hansmann

E-mail: uhansmann@ou.edu (Include "CHEM3523" in the subject-line of your email and address me as "Dr. Hansmann". Let me know how you would like to be addressed in my reply email. Emails will only be answered weekdays between 9AM-5PM.)

Office: Stephenson Life Sciences Research Center 3040

Lectures: *MW 03:00 pm – 04:15 pm, Physical Science Center 0117*

Office Hours: *MW 4:45 pm – 5:45 pm (SLSRC 3040)*

Online Course Management: <http://canvas.ou.edu>

Online Course Materials: <http://www.hansmann-lab.com/cbpc/hansmann/3523.php>

Course Prerequisite: A "C" or better in CHEM3423

Course Description: Phase Equilibria, Electrochemistry, Basic Quantum Chemistry, Spectroscopy, and Statistical Mechanics

Required Textbook: "Physical Chemistry", Fourth Edition, by Laidler, Meiser, and Sanctuary

Reference Textbook: "Physical Chemistry", Ninth Edition, by Atkins and de Paula

Lecture Schedule (tentative):

Chapter 5/6: Phases and Solutions.

Aug. 21, 23, 28, 30, Sep. 6

Chapter 7: Solutions of Electrolytes

Sep. 11, 13, 18, 20

Chapter 8: Electrochemical Cells

Sep. 25, 27

Exam 1: Chapter 5 – 8 (Oct 4, 3:00 pm – 4:15 pm; PHSC 0117)

Chapter 11: Quantum Mechanics and Atomic Structure

Oct. 2, 9, 11, 16, 18, 23, 25, 30, Nov. 1

Chapter 13/14: Chemical Spectroscopy

Nov. 6, 8

Exam 2: Chapter 11,13,14 (Nov. 15, 3:00 pm – 4:15 pm; PHSC 0117)

Chapter 15: Statistical Mechanics/Computational Chemistry

and Notes: Nov. 13, 20, 27, 29, Dec. 4, 6

Final: Chapter 5,6,7,8,11,13,14,15 (Dec. 14 Thursday, 4:30 – 6:30 pm; PHSC 0117)

Course Grading Scheme:

1. Homework Assignments (0%): Problem sets will be assigned weekly on the course web-site. 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 exams with minor numerical changes. Homework assignments will **not** be corrected, discussed in class, or graded, but *solutions to the homework problems will be posted on the course web-site (not Canvas)*. A 10-minute worksheet will be handed out on most Mondays at the beginning of the class. These worksheets are **for practice purposes only**. They will be **neither corrected nor graded**, and as a rule also **not** discussed during class or office hours.

2. Examinations (50%): Two midterm examinations of 75 min length will be given, each counting 25% to the final grade. **NO MAKE-UP EXAMINATIONS 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.

Date	Chapters
4 Oct	5, 6,7,8
15 Nov	11,13,14

3. Final Exam Preparation Period. Pre-finals week will be defined as the seven calendar days before the first day of finals. Faculty may cover new course material throughout this week. For specific provisions of the policy please refer to OU's Final Exam Preparation Period policy (<https://apps.hr.ou.edu/FacultyHandbook#4.10>).

4. Final Exam (50%): The final examination will be given on **Thursday Dec. 14 , 4:30 pm – 6:30 pm**. 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%. According to the Provost office should students not completing 70% or more of a course be issued a grade/mark of "I." The 70% refer to attendance to class and/or exams, i.e., if you are excused for more than 30% of class and/or exams you will receive an "I".

6. Grading Errors and Extra Credits: All grading mistakes have to be resolved within **one** week after the 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:

Copyright Syllabus Statement for In-Person or Online Courses: Sessions of this course may be recorded or live-streamed. These recordings are the intellectual property of the individual

faculty member and may not be shared or reproduced without the explicit, written consent of the faculty member. In addition, privacy rights of others such as students, guest lecturers, and providers of copyrighted material displayed in the recording may be of concern. *Students may not share any course recordings with individuals not enrolled in the class or upload them to any other online environment.*

Codes and Policies of Behavior Policy: Each student has to be acquainted with the University codes, policies, and procedures involving academic misconduct, grievances, sexual and ethnic harassment, and discrimination based on physical handicap.

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 solicit or receive outside help.* On examinations and quizzes you will never be permitted to use your notes, textbooks, ect. **(I utilize plagiarism checkers and expect students to adhere to the academic integrity proscribed for OU students).** 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. *I will assign an "F" for the course and may recommend expulsion from the University for such violations*

Reasonable Accommodation Policy: The Accessibility and Disability Resource Center is committed to supporting students with disabilities to ensure that they are able to enjoy equal access to all components of their education. This includes your academics, housing, and community events. If you are experiencing a disability, a mental/medical health condition that has a significant impact on one or more life functions, you can receive accommodations to provide equal access. Possible disabilities include, but are not limited to, learning disabilities, AD(H)D, mental health, and chronic health. Additionally, we support students with temporary medical conditions (broken wrist, shoulder surgery, etc.) and pregnancy. To discuss potential accommodations, please contact the ADRC at 730 College Avenue, (ph.) 405.325.3852, or adrc@ou.edu.

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 me as soon as possible in order to make appropriate arrangements for classwork or taking of examinations.

Title IX Resources and Reporting Requirement: For any concerns regarding gender-based discrimination, sexual harassment, sexual assault, dating/domestic violence, or stalking, the University offers a variety of resources. To learn more or to report an incident, please contact the Sexual Misconduct Office at 405/325-2215 (8 to 5, M-F) or smo@ou.edu. Incidents can also be reported confidentially to OU Advocates at 405/615-0013 (phones are answered 24 hours a day, 7 days a week). 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. Inquiries regarding non-discrimination policies can be directed to University Equal Opportunity Officer and Title IX Coordinator at 405/325-3546 or smo@ou.edu. For more information, visit <http://www.ou.edu/eoo.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 me as soon as possible to discuss. Generally, modifications will be made where medically necessary and similar in scope to accommodations based on temporary disability. Please see www.ou.edu/content/eoo/faqs/pregnancy-faqs.html for commonly asked questions.

Emergency Protocol: During an emergency, there are official university procedures that will maximize your safety:

Severe Weather: If you receive an OU Alert to seek refuge or hear a tornado siren that signals severe weather 1. *LOOK* for severe weather refuge location maps located inside most OU buildings near the entrances 2. *SEEK* refuge inside a building. Do not leave one building to seek shelter in another building that you deem safer. If outside, get into the nearest building. 3. *GO* to the building's severe weather refuge location. If you do not know where that is, go to the lowest level possible and seek refuge in an innermost room. Avoid outside doors and windows. 4. *GET IN, GET DOWN, COVER UP*. 5. *WAIT* for official notice to resume normal activities.

[Link to Severe Weather Refuge Areas , Severe Weather Preparedness - Video](#)

Armed Subject/Campus Intruder: If you receive an OU Alert to shelter-in-place due to an active shooter or armed intruder situation or you hear what you perceive to be gunshots: 1. *GET OUT:* If you believe you can get out of the area *WITHOUT* encountering the armed individual, move quickly towards the nearest building exit, move away from the building, and call 911. 2. *HIDE OUT:* If you cannot flee, move to an area that can be locked or barricaded, turn off lights, silence devices, spread out, and formulate a plan of attack if the shooter enters the room. 3. *TAKE OUT:* As a last resort fight to defend yourself. *For more information, visit <http://www.ou.edu/emergencypreparedness.html>*

Fire Alarm/General Emergency: If you receive an OU Alert that there is danger inside or near the building, or the fire alarm inside the building activates: 1. *LEAVE* the building. Do not use the elevators. 2. *KNOW* at least two building exits 3. *ASSIST* those that may need help 4. *PROCEED* to the emergency assembly area 5 *ONCE safely outside, NOTIFY first responders of anyone that may still be inside building due to mobility issues*. 6. *WAIT* for official notice before attempting to re-enter the building.

Mental Health Support Services: If you are experiencing any mental health issues that are impacting your academic performance, counseling is available at the University Counseling Center (UCC). The Center is located on the second floor of the Goddard Health Center, at 620 Elm Rm. 201, Norman, OK 73019. To schedule an appointment call (405) 325-2911. For more information please visit <http://www.ou.edu/ucc>.

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 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: Sep. 2, 2023