



<b>Course</b>	<b>CHEM 3321</b>
<b>Professor</b>	Dr. Steven O. Nielsen, BE 2.516 (office)
<b>TA</b>	Aidely Aranda, aidely.aranda@utdallas.edu
<b>Term</b>	Spring 2023
<b>Class Time</b>	MWF, 1:00 – 1:50 pm, SLC 2.303
<b>Help/Exam Session</b>	Thursday 5:30 – 6:45 pm, SLC 2.303

### Professor's Contact Information

<b>Office Phone</b>	972-883-5323
<b>Office Location</b>	BE 2.516 (I can also be found in BE3.304)
<b>Email Address</b>	steven.nielsen@utdallas.edu
<b>Office Hours</b>	8-9 am every day.
<b>Help Session</b>	There will be weekly help sessions except on the exam weeks.

### General Course Information

<b>Pre-requisites, Co-requisites, &amp; other restrictions</b>	CHEM 2325 and (MATH 2415 or MATH 2451 or MATH 3351).
<b>Course Description</b>	Physical Chemistry I is designed to provide students of chemistry and biochemistry with a fundamental understanding of thermodynamics, chemical and phase equilibria, and kinetics.
<b>Learning Outcomes</b>	<p><u>Objectives</u> Fundamental properties of macroscopic biophysical chemical systems are introduced and described in quantitative terms. A core of topics in thermodynamics, molecular motion and kinetics, is supplemented with topics germane to students taking physical chemistry with biophysical applications.</p> <p><u>Expected Learning Outcomes</u> Upon successful completion of this course, students will therefore:</p> <ol style="list-style-type: none"><li>1. Demonstrate the use of the three laws of thermodynamics in calculating chemical and phase equilibria and assessing the spontaneity of chemical processes;</li><li>2. Interpret kinetic theory;</li><li>3. Explain the rates of chemical reactions and enzyme kinetics in terms of simple models.</li><li>4. Demonstrate knowledge of mathematics and physics by applying that knowledge to evaluate mathematical problems related to physical chemistry.</li></ol>
<b>Required or Recommended Texts &amp; Materials</b>	Physical Chemistry; A Molecular Approach: by D.A. McQuarrie & J.D. Simon, ISBN 0-935702-99-7  <a href="http://www.utdallas.edu/~son051000/chem3321.html">http://www.utdallas.edu/~son051000/chem3321.html</a>

## Course Evaluation:

- (i) **Grading Policy:** 3 exams + homework + final exam (20% each). The lowest of your 3 exams can be replaced by your grade on the final exam.  
The grading scale is: A: 80-100%, B: 65-80%, C: 55-65%, D: 45-55%, F: 0-45%
- (ii) **Homework:** An essential part of learning physical chemistry is getting as much practice as possible applying basic concepts to solving problems. Homework is due at the beginning of class on the posted due date. Homework turned in after the answers are posted online will not receive any credit. The TA will grade the homework.
- (iii) **There will be no makeup exams given.** If you have an acceptable, documented reason for missing an exam (e.g. documented illness), you will be allowed to replace the missed exam with your score on the final. The final exam must be taken, will be comprehensive, and cannot be replaced by any other grade.
- (iv) **Exams.** The 3 exams will be 75 minutes long and the final exam will be 2 hours and 45 minutes long. You may bring a 3" x 5" card (crib card) to the exams with as many formulas on **one side** as you can fit. It must be hand-written. You will not be expected to memorize tables of data or physical constants (these will be provided). For the final exam you may use both sides of a crib card.
- (v) **Help/Exam Section:** During weeks when there are no exams this section will be run by the TA as a help session. On weeks where there is an exam, the exam will be written in this section.
- (vi) **Be On Time:** You may arrive up until the first student finishes his/her exam (grace period), the only penalty being that you will have proportionally less time to finish the exam. After this grace period you will not be allowed to take the exam. This applies for the 3 exams and the final exam.
- (vii) **Content:** Chapter 16 and 19-31 of the textbook; content from other sources will also be used.

## Lecture Schedule

(Topics, Reading Assignments, Due Dates, Exam Dates)

M	W	F	comments
	Jan. 18	20	
23	25	27	
30	Feb. 1	3	
6	8	10	
13	15	17	
20	22	24	Exam 1 on Feb. 23
27	Mar. 1	3	
6	8	10	(Spring Break March 13-17)
20	22	24	
27	29	31	Exam 2 on March 30
Apr. 3	5	7	
10	12	14	
17	19	21	
24	26	28	Exam 3 on April 27
May 1	3	5	
	10		Final exam Wed. May 10, 2pm-4:45pm

**Comet Creed:**

*This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:*

“As a Comet, I pledge honesty, integrity, and service in all that I do.”

**UT Dallas Syllabus Policies and Procedures:**

The information contained in the following link constitutes the University’s policies and procedures segment of the course syllabus.

Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.