



## FACE COVERINGS

Face coverings are required while on campus, except while eating, alone in an enclosed space, or outdoors practicing social distancing. Students will not be permitted in class without a face covering. If you have a medical reason preventing you from wearing a face covering due to a health condition deemed high-risk by the CDC, submit an [online application](#) to request an accommodation through the Office of Accessibility and Disability Resources. Students will need to provide documentation that verifies their health condition or disability and supports the need for accommodations. Students already affiliated with the Office of Accessibility and Disability Resources who would like to request additional accommodations due to the impact of COVID-19, should contact their accessibility specialist to discuss their specific needs. You may connect with the office by calling 419.530.4981 or sending an email to [StudentDisability@utoledo.edu](mailto:StudentDisability@utoledo.edu).

## VACCINATION

Doctors and other health care professionals agree that the best way to protect ourselves and each other is to get vaccinated. Case data clearly show that vaccines remain highly effective at preventing serious illness from COVID, including the highly contagious delta variant. If you have not yet received your COVID vaccine, the University encourages you do so as soon as possible. No appointment is needed to get the shot at the UTMC Outpatient Pharmacy, University Health Clinic or Main Campus Pharmacy. Once you receive the COVID vaccination, please register on the COVID Vaccine Registry site at: <https://utvaccinereg.utoledo.edu/>.

## SPECIAL NOTES

It's important to note, that based on the unpredictability of the COVID-19 virus, things can change at any time. So please be patient and understanding as we move through the semester. I also ask that you keep me informed of concerns you may have about class, completing course work/assignments timely and/or health concerns related to COVID.

It has recently been recommended that we use a seating chart in the event that contact tracing has to be implemented. So we will set up seating charts for the lecture rooms.

## UNIVERSITY POLICIES

*The University is an equal opportunity educational institution. Please read The University's Policy Statement on Nondiscrimination on the Basis of Disability Americans with Disability Act Compliance.*

*The University of Toledo is committed to providing equal access to education for all students. If you have a documented disability or you believe you have a disability and would like information regarding academic accommodations/adjustments in this course please contact the Student Disability Services Office.)*

## Grades:

There will be four "quizzes" during the semester. Each will be worth 100 points. They will be one hour long and given online with a possibility of one or two being take home quizzes with a longer deadline. Problems will be assigned for each chapter which will provide experience in applying and working with the concepts in each chapter.

Problems are assigned for each chapter which will provide experience in applying and working with the concepts in each chapter. They may be collected at a time announced in class. Four bonus points will be given per completed problem set. **The problem sets turned in will not be returned, so make copies if you wish a record.** The solutions must indicate that you have worked independently from the text. If you work with other students, you must be able to explain the steps taken to solve the problems. Copying the answer book is not allowed and will result in a grade of zero for the assignment. Copying another student is not allowed and will result in a grade of zero for the assignment for both students. Other than that, these will not be graded or scored. I will post the answer key for the assigned problems on line in the web site associated with this course thru Distance Learning after class on the day the problems are due. The answer keys will be print outs of MATH-CAD or S MathStudio worksheets.

You are encouraged to use SMath Studio in this course. It is a mathematics program which will be very useful in CHEM 3740 and in CHEM 3860/3870 (Advanced Laboratory I & II) and CHEM 3730. It will be referred to and used quite extensively in the recitation section(optional) of this course (although the software is not required). It has the potential to become very useful when you leave school. It will certainly help you with the mathematical aspects of this course.. A link to the website for the software is provided on the course website. It has a few quirks but this software along with Excel will serve you well in this course.

Changes in scheduled exam days will be announced at least 2 lectures prior to the change and placed on the course website.

**Grade Sources:**

Exams	4@	100 pts./ea	400 pts.
Final exam	1@	200 pts.	200 pts.
Class participation & projects		<u>20 pts.</u>	<u>20 pts</u>
	Total		620 pts.

**Bonus:**

Homework &/or plots**	max. 8 pts/ plot	32 (Bonus points)
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Grade scale will be 90% and above A, 86-89% A-, 85-83% B+, 84-80% B, etc. Scaling may be applied at the end of course.

**\*\*\*Some notes:**

I have found that graphing data is an excellent way to visualize trends and concepts. I will give 8 pts. for graphs made (individually) of data presented in the text (for example(only), boiling pts. of Nobel gases vs atomic mass; at. radius vs. at. mass etc.). You must turn in **(by email only)** :

the plot,

a printout of the data or the spread sheet file.

a one paragraph explanation of what you see as the trend

a short explanation/discussion of the cause of the phenomenon.

All parts that apply must be present to obtain credit. You must e-mail the work to me as an attachment, preferably as a pdf file. The email subject field must include the phrase ***Extra credit plot***. Maximum of 32 pts. total for semester All materials must be a result of your own work. The last day I will accept this work will be 2 Dec. 2021 at 6:00 pm. This work maybe completed using Smath Studio or Excel. Work must be submitted by email.

**Recitation:** CHEM3732 / 3712. Optional. P/NC course which will be use to discuss assigned problems and provide assistance in learning to utilize S MathStudio.

## Tentative Schedule.

Subject to change by the instructor. Any changes will be announced in class and on the DL web site for this course. **You are responsible for knowing these changes.**

Week		Topic	Chapter	Chapter	Problems
2021			2 <sup>nd</sup> printing	1 <sup>st</sup> printing	
30-Aug		Background, The Properties of Gases	notes, 16	16	TBA
8-Sep		The Properties of Gases	16, 27	16/25	TBA
13-Sep		The Kinetic Theory of Gases	27	25	TBA
20-Sep	E	The First Law of Thermodynamics	19	19	TBA
27-Sep		The First Law of Thermodynamics	19	19	TBA
4-Oct		Entropy and the Second Law of Thermodynamics	20	20	TBA
11-Oct		Entropy and the Second Law of Thermodynamics	20	20	TBA
18-Oct	E	Entropy and the Third Law of Thermodynamics	21	21	TBA
25-Oct		Entropy and the Third Law of Thermodynamics	21	21	TBA
1-Nov		Helmholtz and Gibbs Energies	22	22	TBA
8-Nov	E	Phase Equilibria	23	23	TBA
15-Nov		Solutions I: Liquid-Liquid Solutions	24	NEC	TBA
22-Nov		Solutions II: Solid-Liquid Solutions	25	NEC	TBA
29-Nov	E	Chemical Equilibrium Quiz Wednesday	26	24	TBA
6-Dec		<a href="#">Chemical Kinetics I: Rate Law</a>	28	26	TBA
<b>TBA</b>		<b>Final</b>			

NEC = No Equivalent Chapter

**TBA** To Be Announced

Some websites of interest (checked on 02 August 2019):

<http://physics.nist.gov/cuu/index.html>

<http://webbook.nist.gov/>

<https://ptable.com/>

<http://www.iupac.org>

[http://old.iupac.org/reports/periodic\\_table/index.html](http://old.iupac.org/reports/periodic_table/index.html)

If the link below is copied and pasted into your browser it should take you to the document on units in Phys. Chem.

<https://iupac.org/wp-content/uploads/2019/05/IUPAC-GB3-2012-2ndPrinting-PDFsearchable.pdf>