Course	**CHEM 1311: General Chemistry 1312**
Professor	Dr. Amandeep Sra
Term	Fall 2023
Time	MW 10:00 am – 11:15 am, ECSW 1.315

Professor's Contact Information

Office Phone	972-883-4818
Office Location	BE 2.328
Email Address	aks057000@utdallas.edu
Office Hours	**In-person / online office hours (please use Microsoft bookings even if you are coming in-person):** Monday / Wednesday 2:30 pm – 4:00 pm Tuesday / Thursday 3:30 pm – 4:30 pm **In-person office hours** are in BE 2.328 **Online Office hours** can also be done through Microsoft Bookings (on Teams) – Click Here – to book office hours (a link has been set up on the course eLearning). ***Note:*** *this is the time that I have set aside to meet with you. We can use this time to answer questions, clarify concepts, talk about the course, scientific discussions, weather, your future plans, life, and anything else.* You can email me to schedule additional office hours if needed.
Other Information	Best way to contact me: email listed above or Chat with me on TEAMS
TA information	Sneha Kumari email: sneha.kumari@utdallas.edu Monday: 11.30 am-12.30 pm in BE 2.410 (Chemistry Clinic)
Workshops / Review Sessions	**Workshops (weekly reviews): Both workshops will be identical.** Monday 1.30 – 2.30 pm BE 2.528 Wednesday 1.30 – 2.30 pm BE 2.528 These are NOT MANDATORY. However, if you have been unsuccessful in the Math skill tests, I highly recommend you attend them.
Chemistry Clinic	Need additional help with General Chemistry? Tutoring is now available for Gen Chem 2 in our newly established Chemistry Clinic in BE 2.410 M-F 8:00 am- 5:00 pm See website for details: https://chemistry.utdallas.edu/chemclinic/

General Course Information

Pre-requisites, Co-requisites, & other restrictions	One year of high school chemistry and one semester of college general chemistry (e.g. CHEM 1311) are assumed.
Course Description	A continuation of CHEM 1311 treating solutions; chemical equilibrium, acids and bases, solubility; electrochemistry; rates of reactions; and thermodynamics.
Learning Outcomes	Objectives: This course is the second of a two-course sequence. The goal of this course is to provide students with a working knowledge of how the basic concepts learned in CHEM 1311 apply to more complex chemical systems. The course focuses on the following: chemical equilibrium; rates of reactions; acid base chemistry, including buffer systems and acid/base titrations; electrochemistry; and thermodynamics concepts. Basic problem solving skills and critical thinking continue to be emphasized in this course. Expected Learning Outcomes: Upon successful completion of this course, students will therefore: 1) be able to use their understanding of intermolecular attractive forces that determine the properties of the states of matter and phase behavior by predicting colligative properties and the characteristics of solutions 2) be able to use the basic concept of equilibrium in writing equilibrium constant relationships, determining whether equilibrium has been established, calculating equilibrium concentrations, and predicting the effects of concentration, pressure and temperature changes on equilibrium mixtures (LeChatelier's Principle) 3) be able to interpret experimental data (in both tabular and graphical form) by appropriately setting up and solving scientific problems using dimensional analysis with proper attention to scientific units and significant figures 4) be able to apply the concepts of equilibrium to (a) understand common inorganic reactions that occur in aqueous solutions (e.g. acid-base, solubility-precipitation and oxidation/reduction reactions); (b) understand how chemical equilibria depend on ΔH, ΔS and ΔG; and (c) determine standard and nonstandard cell potentials and equilibrium constants from cell potential data for oxidation/reduction reactions 5) be able to demonstrate an understanding of the basic concepts of chemical kinetics, how rate & equilibrium properties are related, & how these topics relate to major scientific issues by utilizing this knowledge to solve kinetics calculations & evaluate reaction mechanisms
Required Texts & Materials	1. **Textbook:** *Chemistry: Atoms First, 4th Edition* (Julia Burdge, Jason Overby); McGraw-Hill 2. Course materials located on class site at **eLearning:** http://elearning.utdallas.edu/ 3. ALEKS 360 online assignment system: www.aleks.com. You can directly purchase **ALEKS 360 from this website or the bookstore** and this has an ebook built into the program.

	4. Any scientific including graphing **calculators** for problem solving. We just require that the calculator not be connected to the internet. 5. Access to eLearning during class for conducting In Class Assignments (ICAs)
Additional Reference Material	https://openstax.org/details/books/chemistry-atoms-first https://chem.libretexts.org/ Note that while all content covered in CHEM 1311 and CHEM 1312 is covered in these online books, the chapter arrangement is different.
Course Access and Navigation	This course can be accessed using your UT Dallas NetID account on the eLearning website. Please see the course access and navigation section of the Getting Started with eLearning webpage for more information. To become familiar with the eLearning tool, please see the Student eLearning Tutorials webpage. UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The eLearning Support Center includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.
Communication	This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the Student eLearning Tutorials webpage for video demonstrations on eLearning tools. Student emails and discussion board messages will be answered within 3 working days under normal circumstances.
Technical Difficulties	The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online eLearning Help Desk. The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.
Student Resources	Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the eLearning Current Students webpage for more information. The information contained in the following link lists the University's academic support resources for all students. Please go to Academic Support Resources webpage for these policies.
PLTL and SI and Peer tutoring	**Peer Led Team Learning (PLTL)** is a program designed to provide an active learning experience in which students can gain the skills and confidence to be successful learners in General Chemistry and other science courses. In weekly ninety-minute PLTL sessions, small groups of students will work together to solve problems written by the course professors. An undergraduate PLTL leader who has training in group dynamics and mastery of course content will lead them. This is an optional

	component to the course. However, if you choose to participate, you are required to stay in the program throughout the semester—the integrity of the group depends on it. As such, **it is critical to attend every session**—skipping a PLTL session limits the utility of that session for everybody else. We want people who sign up for the program to be fully committed to attending. ***Bottom line: only sign up for PLTL if you are committed to attending every session.*** To participate in a PLTL group, you will need to apply online. More details of this program, and the enrollment procedure, will be announced via email You can learn more about PLTL at the following link for the Student Success Center: https://www.utdallas.edu/studentsuccess/help-with-courses/peer-led-team-learning/. **Supplemental Instruction (SI)** provides free, collaborative-group study sessions for students taking historically difficult courses such as Chem 1312. These sessions are hosted by a SI leader who has previously taken the course. SI sessions encourage active, collaborative learning based on critical thinking and transferable study skills. https://studentsuccess.utdallas.edu/supplemental-instruction/ **Peer tutoring** is offered to currently enrolled students for many of the historically challenging subjects including General chemistry 1. The virtual sessions are designed to meet students' individual questions and needs; however, the tutors do not provide answers for homework or exams. Please visit the webpage for additional information about scheduling your sessions. https://studentsuccess.utdallas.edu/programs/peer-tutoring/
Classroom Materials	The Instructor will provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the Student Code of Conduct.
Class Recordings	Any recordings made, will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception

	is allowed by law. Failure to comply with these University requirements is a violation of the Student Code of Conduct.
Server Unavailability or Other Technical Difficulties	The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online eLearning Help Desk. The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

Schedule & Academic Calendar

Class period	Day	Date	Topic	Chapter
1	Mon	Aug. 21	Syllabus + Math quiz	
2	Wed	Aug. 23	Physical properties of solutions	13 (no 13.7)
3	Mon	Aug. 28		
4	Wed	Aug. 30		
	Mon	Sep. 4		
5	Wed	Sep. 6		
6	Mon	Sep. 11	Chemical kinetics	14
7	Wed	Sep. 13		
8	Mon	Sep. 18		
9	Wed	Sep. 20		
10	Mon	Sep. 25	Chemical equilibrium	16 (no 16.4)
11	Wed	Sep. 27		
12	Mon	Oct. 2		
13	Wed	Oct. 4		
14	Mon	Oct. 9	Acid, bases, and salts	17
15	Wed	Oct. 11		
16	Mon	Oct. 16		
17	Wed	Oct. 18		
18	Mon	Oct. 23	Acid-base equilibria and solubility equilibria	18 (no 18.6)
19	Wed	Oct. 25		
20	Mon	Oct. 30		
21	Wed	Nov. 1		
22	Mon	Nov. 6		
23	Wed	Nov. 8	Entropy and Gibbs energy	15 & 16.4
24	Mon	Nov. 13		
25	Wed	Nov. 15		
	Mon	Nov. 20		
	Wed	Nov. 22		
26	Mon	Nov. 27	Electrochemistry	19
27	Wed	Nov. 29		
28	Mon	Dec. 4		
29	Wed	Dec. 6		

Exam Schedule:
All exams will be taken at the testing center. Exam 1-4 are from Tuesday to Saturday.
Topics covered on the exam will include all material covered in class until the previous week.
https://ets.utdallas.edu/testing-center
You are required to schedule the exam at least 48 hours in advance.

CHEM 1312.001 -Exam 1 (80 min)	9/12/2023 - 9/16/2023
CHEM 1312.001 -Exam 2 (80 min)	10/17/2023 - 10/21/2023
CHEM 1312.001 -Exam 3 (80 min)	11/7/2023 - 11/11/2023
CHEM 1312.001 -Final Exam (165 min)	12/9/2023 - 12/13/2023

Testing center hours of operation from *Sept 13th onward:

- **Tuesday**: 8:30am – 9:00pm
- **Wednesday:** 3:00pm – 9:00pm
- **Thursday:** 8:30am – 9:00pm
- **Friday:** 8:30am – 9:00pm
- **Saturday:** 9:00am – 1:00pm

***Check website for Sept 12th hours.**

Important:
Read testing center guidelines at https://ets.utdallas.edu/testing-center/students

1. Need to register to reserve your seat for the exam **at least 48 hours** in prior.
2. Need to register for all 3 midterms and 1 final.
3. Register the exams ASAP, as the seats may fill quickly.
4. Reserved seat for an exam can be canceled, and you can change to another date/time slot if available.

Course Policies

Grading (credit) Criteria

Course Evaluation:

(i) In-class assignments	10%
(ii) ALEKS Assignments	15%
(iii) Midterm Exams (3 x 18.5%)	55.5%
(iv) Final Exam (Cumulative)	19.5%

Our goal in this class is to help you develop an understanding (and appreciation) of how chemistry impacts your everyday lives. Our main focus will be on CONCEPTS and not just FACTS, and our teaching and testing will reflect this. We have designed this course to empower you to succeed in **mastering chemical concepts**. We have a number of "resources" that we are putting at your disposal to enable you to succeed. While students will differ in the type of resources they prefer to utilize, in our experience we have identified a subset that are critical. Resources are described below and in the following sections:

1. End of chapter problems:

- a principle method for assessing whether you understand a concept and how to use it
- the most critical resources for preparing for exams
- assigned for each chapter from end-of-chapter exercises in your textbook
- large number of problems selected to cover the majority of important concepts
- mixture of conceptual and quantitative problems
- these will not be collected or graded
- all homework assignments are posted on eLearning

2. In-class assignments (ICAs):

- ICAs are for attendance and they will be worth 10% of your grade.
- these will be unannounced, and can occur anytime during any lecture
- ICAs will be conducted on eLearning as attendance
- obvious message: attending class each and every day is arguably the MOST important thing a successful general chemistry student does
- in case of emergency, you can make-up any missed ICA grade by taking a quiz during office hours.

3. ALEKS:

- helps a student gauge their fundamental knowledge and identify what they don't understand
- details for ALEKS provided in separate document
- each student will get a unique set of questions tailored by the system to suit the student's preparation and understanding of the material
- ALEKS work will constitute 15% of your course score, broken down as follows:
  - -- Completion Goals: 14 modules, 112 topics, 10%
  - -- Homework assignments, 15 homeworks, 5%

NOTE: Doing ALEKS without doing **End of chapter problems** will NOT be sufficient for exam preparation.

Class Code for ALEKS: **9EYAA-JAMX6**

Financial Aid Access Code (valid for 2 weeks): **CE16D-B21D2-61D6A-4D7D0**

The Financial Aid Access Code does not add an additional two weeks to your account.

NOTE: This code gives you temporary access to ALEKS for a two-week period. Once the code expires, you will be locked out of your ALEKS account until you purchase a regular Student Access Code.

4. Midterm exams (online exam on eLearning taken at the testing center):

• each exam is 80 minutes long
• ALL 3 MIDTERM EXAMS MUST BE TAKEN, at the testing center.
https://ets.utdallas.edu/testing-center
• You are required to schedule the exam at least 48 hours in advance.
• ***There will be no makeup exams given***
• The lowest of the 3 exam scores will be automatically replaced by a higher final exam score.
• questions will focus on concepts and problem solving covered in class, end-of-chapter homework, ICAs and ALEKS.

5. Final exam (comprehensive exam):

• comprehensive exam
• the final exam is 165 minutes long.
• the final exam will be taken at the testing center.
https://ets.utdallas.edu/testing-center
• You are required to schedule the exam at least 48 hours in advance.
• The final exam must be taken and cannot be replaced by any other grade.

NOTE: Life happens and does not stop because of Gen Chem class. My goal is to ensure that I create a positive learning experience for you. Please come and talk to me if you have any issues. I will always do my best to work with you.

ALEKS

Modules and Homework are ***due 7:00 am on the days listed below (typically a Monday)*** — at the deadline time, these objectives will close — you will no longer be able to work on them for a grade. Please note that occasionally due to delays in the topic being covered in lecture, I may delay the due date on ALEKS. This is done directly in ALEKS.

Modules + Homework	Due dates
Homework 0 (review)	08/21/2023 12:00 AM - 08/28/2023 7:00 AM
Homework 1	08/28/2023 12:00 AM - 09/04/2023 7:00 AM
Module 1	08/21/2023 12:00 AM - 09/04/2023 7:00 AM
Homework 2	09/04/2023 7:01 AM - 09/11/2023 7:00 AM
Module 2	09/04/2023 7:01 AM - 09/11/2023 7:00 AM
Homework 3	09/11/2023 7:01 AM - 09/18/2023 7:00 AM
Module 3	09/11/2023 7:01 AM - 09/18/2023 7:00 AM
Homework 4	09/18/2023 7:01 AM - 09/25/2023 7:00 AM
Module 4	09/18/2023 7:01 AM - 09/25/2023 7:00 AM
Homework 5	09/25/2023 7:01 AM - 10/02/2023 7:00 AM
Module 5	09/25/2023 7:01 AM - 10/02/2023 7:00 AM
Homework 6	10/02/2023 7:01 AM - 10/09/2023 7:00 AM
Module 6	10/02/2023 7:01 AM - 10/09/2023 7:00 AM
Homework 7	10/09/2023 7:01 AM - 10/16/2023 7:00 AM
Module 7	10/09/2023 7:01 AM - 10/16/2023 7:00 AM
Homework 8	10/16/2023 7:01 AM - 10/23/2023 7:00 AM
Module 8	10/16/2023 7:01 AM - 10/23/2023 7:00 AM
Homework 9	10/23/2023 7:01 AM - 10/30/2023 7:00 AM
Module 9	10/23/2023 7:01 AM - 10/30/2023 7:00 AM
Homework 10	10/30/2023 7:01 AM - 11/06/2023 7:00 AM

	Module 10	10/30/2023 7:01 AM - 11/06/2023 7:00 AM
	Homework 11	11/06/2023 7:01 AM - 11/13/2023 7:00 AM
	Module 11	11/06/2023 7:01 AM - 11/13/2023 7:00 AM
	Homework 12	11/13/2023 7:01 AM - 11/20/2023 7:00 AM
	Module 12	11/13/2023 7:01 AM - 11/20/2023 7:00 AM
	Homework 13	11/20/2023 7:01 AM - 12/04/2023 7:00 AM
	Module 13	11/20/2023 7:01 AM - 12/04/2023 7:00 AM
	Homework14	12/04/2023 7:01 AM - 12/11/2023 7:00 AM
	Module 14	12/04/2023 7:01 AM - 12/11/2023 7:00 AM
	Open Pie mode for modules	12/11/2023 7:01 AM - 12/13/2023 7:00 PM

· **Make-up Exams**	There are **no make-up exams** (see above).
Extra Credit	There is **no extra credit**.
Class Attendance	In order to keep you actively participating during the class, I will be conducting In Class Assignments (ICAs). These will be discussed during class and made available for 24 hours. ICAs are 10% of your overall grade.
Re-grade Policy	Requests to have 1 or more questions of an exam re-graded have to be made within 1 week of receiving the graded assignment. The request should be in the form of an email from your UTD email account to the instructor; the subject line should read "exam X re-grade", where X is the assignment number; the body of the email should contain your full name, the problem number and an explanation of how the problem was graded incorrectly.
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.*

These descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.