



Elementary Chemistry

The University of Toledo
College of Natural Sciences and Mathematics
Department of Chemistry and Biochemistry
Chem1090 – 901 DL, CRN 54373

Instructor:	Dr. Elizabeth Zhurova	Offered:	Fall 2021
Email:	Elizabeth.Zhurova@utoledo.edu	Course Website:	Blackboard Learn
Office Hours:	TR 3:50-5:00 PM, W 3:00-5:00 PM or by appointment	Class Location:	Online, Blackboard Learn
Office Location:	Online/BO2096G	Credit Hours:	3

COURSE/CATALOG DESCRIPTION

For students who major in science, engineering or other fields which require chemistry as a prerequisite subject who have not had a previous course in chemistry and whose preparation is not sufficient to begin General Chemistry (CHEM 1230).

PREREQUISITES AND COREQUISITES

[MATH 1200](#) with a minimum grade of C, or [MATH 1320](#) with a minimum grade of C, or [MATH 1340](#) with a minimum grade of C, or [MATH 1750](#) with a minimum grade of C, or [MATH 1830](#) with a minimum grade of C, or [MATH 1850](#) with a minimum grade of C, or ACT Math with a score of 20, or Aleks Math Placement Test with a score of 046, or Math - Coll Algebra Placement with a score of 10, or SAT Mathematics with a score of 480, or MATH SECTION SCORE with a score of 510.

In order to succeed in Elementary Chemistry, your Math background should be sufficient. If you are not comfortable *solving linear equations* and *working with exponential numbers*, please contact me as soon as possible. Extra help in the form of online and in-person tutoring and SI sessions is available in the class (see below).

TEACHING STRATEGIES

The textbook is an important part of this course. You need to read the sections from the book assigned by the instructor.

Lectures are designed to clarify the concepts covered and provide examples of what is expected of you. Lecture sessions were recorded in the classroom, and video files are posted on Blackboard.

Powerpoint Lecture Slides are useful to quickly clarify or check the concept or problem solution. PDF-files of lecture slides are posted on Blackboard.

ALEKS (Assessment and LEarning in Knowledge Spaces) online homework system is designed to create assignments tailored to the unique needs of each student. It is based on *artificial intelligence*. The first time you log in, ALEKS will ask series of questions designed to assess exactly what you do and do not know about Math and Chemistry. After this initial assessment, you will have a list of topics to work through based on what you are ready to learn. ALEKS will not ask you to work on material you already know, nor will it ask you to work on advanced material until you are ready to do so. All ALEKS homework assignments and assessments have deadlines. *Only two (2) make-ups for missed or late assignments will be provided over semester. If you need more extensions, please provide a doctor note or other documented excuse.*

Please include 2-3 hours, 1-2 times a week of ALEKS work into your schedule. Refer to ALEKS privacy policies at <https://www.mheducation.com/privacy.html>



REQUIRED TEXTS AND ANCILLARY MATERIALS

1. Properly functioning **computer with Internet access**. This course contains streaming video and audio content.
2. **Book**: ISBN-10: 1319333486, ISBN-13: 9781319333485, David Goldberg, Fundamentals of Chemistry, UT ed., 2019 (the original book ISBN-10: 0072828501, ISBN-13: 9780072828504, David Goldberg, Fundamentals of Chemistry, 5th Ed., 2007 can also be used).
2. **ALEKS** online homework is a part of Inclusive Access program, and *you already paid for ALEKS subscription*. It is available to you through Blackboard.
3. Non-programmable, non-graphical scientific **calculator**.

A package containing hard copy book, access card for e-book (same book) and iClicker code is available through UT bookstore. We will not use iClicker in this class.

E-book can be also purchased here: <https://store.macmillanlearning.com/us/storefront/202106979>

If you cannot afford the book at this time, Carlson Library at UT main campus has several hard copy books on reserve. These books can be checked out for 2 hours at a time for an exchange of ID.

TECHNOLOGY REQUIREMENTS, SKILLS, AND PRIVACY POLICIES

Please view the [technology considerations](#) for this course, including technical skills needed, general technology requirements, and technology privacy policies.

Browser Check Page

Students need to have access to a properly functioning computer throughout the semester. The Browser Check Page <http://www.utoledo.edu/dl/helpdesk/browser-check.html> will enable you to perform a systems check on your browser, and to ensure that your browser settings are compatible with Blackboard, the learning management system that hosts this course.

Software

Student computers need to be capable of running the latest versions of plug-ins, recent software and have the necessary tools to be kept free of viruses and spyware. The computer needs to run the following software, available in the UT Online Download Center.

- Word Processing Software
- Adobe Acrobat Reader
- Java Plugin Console
- Adobe Flash Player
- Adobe Shockwave Player
- Google Chrome Browser – recommended

Internet Service

High-speed Internet access is recommended, as dial-up may be slow and limited in viewing lectures, downloading information and completing online homework and tests. This course does contain streaming audio and video content.

Use of Public Computers

If using a public library or other public access computer, please check to ensure that you will have access for the length of time required to complete tasks and tests. A list and schedule for on-campus computer labs is available on the Open Lab for Students webpage.

UT Virtual Labs



Traditionally, on-campus labs have offered students the use of computer hardware and software they might not otherwise have access to. With UT's Virtual Lab, students can now access virtual machines loaded with all of the software they need to be successful using nothing more than a broadband Internet connection and a web browser. The virtual lab is open 24/7 and 365 days a year at VLAB: The University of Toledo's Virtual Labs.

Technical skills

To succeed in this course, it will be important for learners to possess the following technical skills:

1. Rename, delete, organize, and save files
2. Create, edit, and format word processing and presentation documents
3. *Convert text and graphical files (including photographs) into .pdf format*
4. Copy, paste, and use a URL or web address
5. Download and install programs and plug-ins
6. Send and receive email with attachments
7. Locate and access information using a web search engine
8. Use a learning management system (Blackboard)

Learner Technical Support can be found here <http://www.utoledo.edu/dl/students/learnersupport.html>

ACCESSIBILITY OF COURSE TECHNOLOGIES

Please view [Accessibility of Course Technologies](#) for information regarding the accessibility of Blackboard and other technologies used in this course.

ACADEMIC POLICIES

Academic Honesty

You are urged to refer to the university's policy on Academic Honesty at

<http://www.utoledo.edu/dl/students/dishonesty.html>. **Violation of this policy can result in a course grade of F** with additional university sanctions possible. You will be required to read and agree to follow class policy during the first week of classes.

Examination Policy

Examination dates are given on the schedule. Exams will be conducted **online** within ALEKS homework system. Midterm exam will take approximately 1-2 hours and comprehensive final exam will take 2-3 hours of your time. Each exam will be available for 24 hours, you will be allowed to use the book and your notes and there will be no time limit (before the deadline). You will **not** be allowed to use Internet for any reason on any kind of electronic device during the exam, except for the online version of our textbook. All exam scores will be included in your grade calculation. **Make-ups for the exams** will only be given to students who miss an exam under the conditions listed below.

- Students who will not be able to take an exam during scheduled time due to an irresolvable conflict with a *major responsibility* must provide some *written* documentation to verify the conflict. This situation may occur for student on official university business, including athletes. *Approval must be obtained at least 7 days before the scheduled test date.* The exam will be given at another arranged time.
- Students who cannot take an exam due to *illness*, car accident or similar *extreme* circumstance should inform their instructor of their difficulties as soon as possible. These difficulties must also be **documented** by a physician's note, an accident report, etc. *Absences due to COVID-19 quarantine or isolation requirements are considered excused absences.* Please notify me as soon as possible if you are in quarantine or isolation and these absences may not require written notice.



You may use a **calculator** during the exams, it has to be **non-graphical** and **non-programmable**. The following calculator models are **prohibited** for use during exams: all TI Pro models (e.g., TI-30X Pro, TI-36X Pro), TI-College Plus, TI-36X II, Casio fx-991ES, Casio fx-115, and other programmable models. Use of graphical and programmable calculators and cell phones is not allowed during exams.

Pre-term quiz has to be completed before midterm exam or zero score will be assigned for the exam(s).

Extensions, make ups or late assignments

Exam make up will only be provided if an absence is deemed excusable (see examination policy above). Missed exam must be taken not later than 2 weeks after its scheduled day and not later than last week of classes.

Two (2) ALEKS extensions for missed or late assignment will be provided over semester. If you need more extensions, please provide a doctor note or other documented excuse. You need to request an extension within two weeks after the due date. It is highly recommended that you complete all ALEKS assignments on time.

Writing assignment or quiz (required or extra credit): an extension may be requested within the *two weeks period* after the due date. No documentation is required.

The comprehensive list of academic policies that pertain to you in this class and throughout your academic journey is listed here: <http://www.utoledo.edu/policies/academic/undergraduate/>.

COURSE EXPECTATIONS

You are required to work **regularly 6-9 hours per week** throughout the semester. **All assignments have deadlines.** The work includes:

- a) Reading the book and watching the recorded lectures using provided lecture notes as a reference;
- b) Complete online homework (ALEKS) including Knowledge checks;
- c) Complete and submit writing assignments;
- d) Take the midterm and final online exams

If you need extra help, feel free to email your instructor at any time. You will not be graded or judged based on the questions that you ask! Seek online help in the **Chemistry Help Center** and in **LEC center**, links are provided on Blackboard.

COMMUNICATION GUIDELINES

As your instructor, I am here to help, and will do my best to respond to your email quickly. **Please include the course section number in the email subject line or specify that you are from online (DL) class.** Make sure to check your UT email account frequently for important course information. Feedback on assignments will be posted within 1 week after the due date, unless otherwise noted. In addition, if you are having difficulty in the course or trouble understanding any aspect of it, please let me know as soon as possible. I would be happy to arrange a time to meet with you virtually or in person if you feel that you have questions that would best be answered in real-time. I want you to be successful in this course, so **let's work together!**

Covid-19 pandemic and recent political and social events have caused fear, stress, and pain in many of us. Under these circumstances, it is completely normal to feel overwhelmed or anxious, and to have difficulty concentrating. I have designed this course with these challenges in mind, and I am committed to continuing to work with all of you to create a positive and supportive learning environment throughout the term. If your health, well-being, or school work are being



impacted by recent events, I encourage you to contact me and make use of the resources University of Toledo provides, which I have included in this syllabus.

Netiquette

It is important to be courteous and civil when communicating with others. Students taking online courses are subject to the communication regulations outlined in the Student Handbook. To ensure your success when communicating online, take time to familiarize yourself with the "dos" and "don'ts" Internet etiquette at <https://www.utoledo.edu/dl/students/netiquette.html>.

OVERVIEW OF COURSE GRADE ASSIGNMENT

Midterm Grading

Midterm grades are assigned on the 8th week of class and are used to assist students with determining their academic standing. 'Attendance' is also recorded during the 8th week to meet state and federal laws regarding financial aid disbursement. As we do not meet in the classroom, your online class activity (ALEKS homework) will be used to report your 'attendance' in this class. Please note, if you are not attending class it could affect your financial aid (scholarships, grants, loans or Federal Work Study). If you decide you are not going to attend this class (or any other class you have registered for), you must formally withdraw (drop) from the course.

Your midterm grade will be calculated as follows:

ALEKS homework (objective completion)	100 pts
Midterm exam in ALEKS	150 pts
Writing assignments on Blackboard	15 pts
Preterm Quiz on Blackboard	6 pts
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TOTAL	271 pts

Answering all questions in **preterm quiz and committing to follow class rules** are required during the first week of classes.

Final Grading

ALEKS homework	200 pts	32.9%
Midterm exam in ALEKS	150 pts	24.7%
Comprehensive final exam in ALEKS	200 pts	32.9%
Writing assignments on Blackboard	35 pts	5.8%
Quizzes on Blackboard	22 pts	3.6%
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TOTAL	607 pts	100%

The final score for ALEKS homework will be calculated according to the following:

Total objective completion score (100% = 100pts) + Pie completion score (100% = 100pts) = 200 pts.

It is a very high priority to me as your instructor to ensure fairness and equity in all grading aspects of the course. Anyone who has the prerequisites for this course and effectively studies the material can achieve a reasonable level of achievement and therefore an acceptable grade, i.e., a C or above. **I don't curve** grades, so every one of you can achieve the grade you are willing to earn!

Midterm exam will cover the material listed in the schedule below, the final exam is comprehensive and includes all of the material studied in class during the semester. All exams will be conducted online within ALEKS homework system.



Grade Scale: these are the minimum percentages and total number of points needed to receive the indicated grade

A	91% or 552 pts	A-	88% or 534 pts		
B+	85% or 516 pts	B	82% or 498 pts	B-	79% or 480 pts
C+	76% or 461 pts	C	73% or 443 pts	C-	69% or 419 pts
D+	65% or 395 pts	D	61% or 370 pts	D-	57% or 346 pts
F	<57% or <346 pts				

A grade of C (73% or 443 pts) or above AND attendance at the final exam are needed to enter CHEM 1230. If your grade in CHEM 1090 is C- or lower, you must repeat CHEM 1090 before continuing to CHEM 1230.

A course grade of **Incomplete** can be given only to those who have completed all but a very small percentage of course requirements (usually final exam only) for an acceptable reason. The **Incomplete** must be removed before you take CHEM 1230.

UNIVERSITY POLICIES

Institutional Classroom Attendance Policy

Please be aware that the university has implemented an attendance policy, which requires faculty to verify student participation in every class a student is registered at the start of each new semester/course. For this course, if you have not participated in class (*completed any course activities or assignments*) within the first 14 days, I am required by federal law to report you as not attended. Unfortunately, not attending/participating in class impacts your eligibility to receive financial aid, so it is VERY important that you complete course work in these first two weeks. Please contact me as soon as possible to discuss options and/or possible accommodations if you have any difficulty completing assignments within the first two weeks.

Policy Statement on Non-Discrimination on the Basis of Disability (ADA)

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](#).

Academic Accommodations

The University of Toledo embraces the inclusion of students with disabilities. We are committed to ensuring equal opportunity and seamless access for full participation in all courses. For students who have an Accommodations Memo from the Office of Accessibility and Disability Resources, I invite you to correspond with me as soon as possible so that we can communicate confidentially about implementing accommodations in this course.

For students who have not established accommodations with the Office of Accessibility and Disability Resources and are experiencing disability access barriers or are interested in a referral to health care resources for a potential disability, please connect with the office by calling 419.530.4981 or sending an email to StudentDisability@utoledo.edu.

ACADEMIC AND SUPPORT SERVICES

Course scheduling assistance: Chemistry Department Secretary, Ms. Samples, office BO 2022, telephone 419-530-2698, email: Pamela.Samples@utoledo.edu. If you have further questions or if you need assistance, please contact her. She takes care of all scheduling changes.

Chemistry Help Center is a great place to receive assistance. It is generally open all day Monday through Friday & evenings Monday through Thursday. No appointment is necessary.



Tutoring support for all UT students is available through the **Learning Enhancement Center**
<https://www.utoledo.edu/success/lec/>.

Supplemental Instruction (SI) is a student assistance program offered through First Year Experience support. Advanced students provide several structured study sessions on the material each week. Your participation is optional – though strongly encouraged. There are no points assigned for attendance of SI sessions in this class. Please see Blackboard for more information.

Instructor Office Hours are times when you can ask questions about the course material. My office hour times are listed at the top of the syllabus. We can meet in person or online (via Blackboard Collaborate) depending on possible Covid-19 pandemic restrictions and overall convenience.

UT Academic Support Services and Student Support Services can be found here:
<http://www.utoledo.edu/dl/students/learnersupport.html>

SAFETY AND HEALTH SERVICES FOR UT STUDENTS

Please use the following link to view a comprehensive list [Campus Health and Safety Services](#) available to you as a student.

Your safety and well-being is very important; please take a minute to review Title IX, the Student Code of Conduct and other policies that apply to you as a student of the University: <https://www.utoledo.edu/title-ix/policies.html>

SPECIAL COURSE EXPECTATIONS DURING COVID-19 PANDEMIC

The University of Toledo has a [missed class policy](#). *Absences due to COVID-19 quarantine or isolation requirements are considered excused absences.* Please notify me if you are in quarantine or isolation and these absences may not require written notice. I also ask that you keep me informed of concerns you may have about the class, completing course work/assignments timely and/or health concerns related to COVID.

Please also know that we recognize the COVID-19 situation has placed additional burdens on many of our students. If, at any point in the semester, you experience difficulties meeting your basic needs, managing your different responsibilities, or maintaining your physical or mental health, we have a variety of resources that can help. Please review and utilize our [Student Success resources](#) and let me know if you have any questions.

STUDENT LEARNING OUTCOMES

Upon completion of this course, the student will be able to:

1. Classify matter into types
2. Write the symbols and names for common elements
3. Use dimensional analysis to do unit conversions and solve problems that use exponential notation
4. Use the correct number of digits to indicate the precision of a measurement or a calculated result
5. Solve problems that use density, mass, volume, temperature, energy, wavelength, moles, atomic and molar masses, percent composition, the empirical and molecular formulas, including stoichiometry problems
6. Explain the atomic structure using subatomic particles
7. Write full and abbreviated electron configurations for the elements; identify shell, subshell, and orbitals using quantum numbers
8. Draw energy diagrams for atoms and ions
9. Interpret and write the chemical formulas and names of ionic and covalent compounds
10. Draw electron dot (Lewis) diagrams for atoms and molecules
11. Balance chemical equations and predict the products of the reaction



12. Write net ionic equations for reactions in aqueous solution and to interpret such equations

COURSE SCHEDULE

WEEK	DATES	TOPIC	LEARNING OUTCOME(S)	ALEKS assignments	ASSIGNMENTS
1	8/30-9/5	Introduction, Math prerequisite		Initial assessment (Â) + Objective 1 (Math, Ch.2.2) due Sun., 9/5	Preterm quiz and writing assignment (WA) #1 – Introduce yourself! (required) on Bb due Sunday, 9/5
2	9/6-9/12	Ch.1: Basic Concepts	1-2	Objective 2 (Ch. 1) due Sun., 9/12	
3	9/13-9/19	Ch.2: Measurement	3-5	Objective 3 (Ch. 2.1, 2.3-2.6) due Sun., 9/19	
4	9/20-9/26	Ch.3 & 4: Atoms and Atomic Masses; Electron. Configuration	5-6	Objective 4 (Ch. 3, 4.1) due Sun., 9/26	
5	9/27-10/3	Ch.4: Electronic Configuration	5, 7-8	Objective 5 (Ch. 4.2-4.8) due Sun., 10/3	
6	10/4-10/10	Ch.5: Chemical Bonding	9-10	Objective 6 (Ch. 5) due Sun., 10/10, Â	WA#2 over Ch.4 (required) due Tuesday, 10/5
7	10/11-10/13, no classes on 10/14-10/17	Review	1-10	Open pie due Wed., 10/13; extended through Sun., 10/17	
8	10/18-10/24	Ch.6: Nomenclature	9	Objective 7 (Ch. 6) due Sun., 10/24	MIDTERM EXAM (Ch. 1-5) is on Wed., 10/20
9	10/25-10/31	Ch.7: Formula Calculations	5	Objective 8 (Ch. 7) due Sun., 10/31	Nomenclature QUIZ on Bb (required) due Tues.,10/26
10	11/1-11/7	Ch.8: Chemical Reactions	11	Objective 9 (Ch. 8) due Sun., 11/7	WA #3 over Ch.7 (extra credit) due Tues., 11/2
11	11/8-11/14	Ch.8: Chemical Reactions	11	Objective 10 (Ch. 8) due Sun., 11/14	
12	11/15-11/21	Ch.8 & 9: Chemical Reactions, Net Ionic Equations	11-12	Objective 11 (Ch. 8-9) due Sun., 11/9, Â	
13	11/22-11/23, no classes on 11/24-11/28	Review	1-12	Open pie due Tues., 11/23; extended through Sun., 11/28	WA #4 over Ch.8-9 (required + extra credit) due Tues., 11/23
14	11/29-12/5	Ch.10: Stoichiometry	5	Objective 12 (Ch. 10.2) due Sun., 12/5	
15	12/6-12/12	Ch.10: Stoichiometry	5	Objective 13 (Ch. 10) due Sun., 12/12	
16	12/13-12/15	Review	1-12	Open pie due Wed., 12/15	WA #5 over Ch.10 (extra credit) due Mon., 12/13; FINAL EXAM (Ch. 1-10) is on Tues., 12/14

Â is an ALEKS assessment (Knowledge check)

WA is writing assignment; submit by posting .pdf file on Blackboard

MAKE SURE THAT YOUR TRAVEL AND EMPLOYMENT PLANS DO NOT CONFLICT WITH THIS SCHEDULE!