



Chemistry for Health Sciences

The University of Toledo
College of Natural Sciences and Mathematics
Department of Chemistry and Biochemistry
CHEM1120-001, CRN 10747

Instructor:	Dr. Kristi Mock	Term:	Spring 2021
Email:	kristi.mock@utoledo.edu	Course Website:	Blackboard Learn
Office Hours:	Please click here to schedule a time when we can both meet.	Class Location:	Remote
Office Location:	BO2086F	Class Day/Time:	MTWR 2:30 pm -3:25 pm
Instructor Phone:	419-530-4080	Recitation Location:	N/A
		Recitation Day/Time:	N/A
		Credit Hours:	4

CATALOG/COURSE DESCRIPTION

The study of chemistry for students majoring in nursing and other health-related fields. This course includes general, organic, and biochemical topics in condensed form. The impact of chemistry in health fields will be emphasized.

COURSE OVERVIEW

CHEM 1120 is the second course in the Chemistry for Health Sciences series and builds upon the knowledge gained in CHEM1110. This course continues building a basic foundation in the principles of general chemistry, and then moves onto organic chemistry, and biological chemistry. CHEM 1120 is appropriate for non-chemistry majors who will require some knowledge of chemistry in their careers, but do not anticipate taking any further chemistry courses during their undergraduate career. This course is typically taken by nursing students, elementary education students, sports management students, and some science majors who do not want or need the more rigorous chemistry background that is provided by two or three years of chemistry courses. It is not appropriate for chemistry majors and may be too rigorous for non-science majors who are only interested in fulfilling their general education science core requirement. If you have any questions about course placement, please see me as soon as possible.

STUDENT LEARNING OUTCOMES

This course directly emphasizes the Ohio's Department of Higher Education's OTM Learning Outcomes related to:

- Effective communication
- Evaluation of arguments in a logical fashion; e.g. critical thinking
- Employing the methods of inquiry characteristics of natural sciences
- Acquiring an understanding of our global and diverse culture and society
- Engaging in our democratic society

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

1. Explain how chemical processes work in the body.
2. Use chemical concepts to explain how chemistry is used in health care.
3. Demonstrate the ability to think critically and employ critical thinking skills.
4. Read and interpret graphs and data.
5. Demonstrate an understanding of the impact of science on society.

General Education Courses: This course is part of our institutional General Education Program and supports the general education outcomes for *Critical Thinking and Integrative Learning* and *Scientific and Quantitative Reasoning and Literacy*.



TEACHING METHODOLOGY

Students entering chemistry are often nervous and unsure about whether they can do well. Being successful *will* require time and effort. However, you have met the pre-requisites for this course, you belong here and *are* in the position to learn, grow and meet the challenge: you *can* learn chemistry.

Because research has shown that learning occurs when the learner is actively involved in “doing” rather than just listening or watching, asking questions and solving lots of problems will be key elements in your success. With these ideas in mind, the following are used to facilitate learning in this course.

Readings: Even before watching the lectures, I recommend reading the textbook. Repetition is one key to learning! While doing this, it is beneficial if you write down definitions, equations, and small notes as you go along. I will post partial outlines of my lectures that include space for this. As you read attempt to work the problems through the chapter. Don't get discouraged if you can't do them. After watching the lecture and practicing there, come back and try again. If you are still struggling, there are tutors on campus and of course me!

Class sessions: Class sessions will be held through Blackboard Collaborate Ultra at our scheduled class time: 2:30 - 3:25 PM (*i.e.*, we will meet synchronously). You will be actively involved in the sessions by working through problems and calculations with my guidance, answering questions posed through a classroom polling system, writing on the white board, and chatting with your peers. A recording will be available if you cannot attend a class at the scheduled time or want to review our class session.

Class Participation Points: Throughout the lectures I ask polling questions through Learning Catalytics (LC). LC is packaged with your online HW system, Mastering Chemistry (MC) (information below). Each of these questions is worth 0.5 points if correct and 0.1 point if answered incorrectly. The LC questions are there to help you learn. You don't learn a sport by watching others play. You go on the field, fall, and pick yourself back up to learn it. Use the LC questions as a safe place to fall. Don't worry about getting them wrong there are so many extra (I offer not quite double) Participation Points, and we learn a lot by making mistakes.

Homework: We will be using the Modified Mastering Chemistry Homework System (MC). It is an online, web-based learning system that is packaged with your textbook. It is part of the inclusive access package for this course. You do NOT need to purchase an access code.

Problem sets will be posted in advance, feel free to work ahead. However, you must complete the assignments by the posted deadlines because **I will not re-open the online homework assignment once the deadline passes!!** For each problem in MC, you have 6 attempts to answer correctly. You will not have points taken away during these 6 attempts unless it is a multiple-choice question; a small deduction is made for each wrong answer to a multiple-choice question. If you do not exhaust your options or hit give up, MC may not assign points for that section; be sure to double-check for this before the submission deadline.

Additionally, I **strongly** encourage you to attempt the problems from the end of each chapter in your textbook until you are very familiar with that topic. If you are having difficulties working either the Mastering Chemistry assignments or the questions from the end of each chapter, you should either work with your classmates (a post on the discussion board of our class website on Blackboard is appropriate) or contact me.

Quizzes: Once you feel you have mastered the material for the week you can attempt the quiz. Weekly quizzes will open on Bb each week at midnight on Thursday and close midnight Sunday. You will have unlimited attempts to earn the grade you want, but each attempt will have a time limit. Unlimited quizzing allows you to practice with the material in timed environment without the stress of getting everything right the first time. I allow unlimited attempts so you can relax and make sure you LEARN the material.



Final Examination: The final examination will require proctoring. For most of you this will require installing LockDown Browser and the use of a webcam. If for any reason you cannot get these to work, we can pair you with a live proctor. There will be an opportunity to practice with the webcam monitor and LockDown Browser a few weeks before the final.

WORK WEEK

All assigned work is to be completed by 11:59 PM on the date specified in the Weekly Module on Blackboard. You are encouraged to work ahead so that if you have any difficulties with the material or your personal schedule you have enough time to meet the deadlines.

PREREQUISITES AND COREQUISITES

CHEM 1110 with a minimum grade of C, Health Science Chemistry Test with a score of 34, or ALEKS Health Sciences Placement test of 39%.

TEXTS AND ANCILLARY MATERIALS

Required Materials:

- Because this course is part of the inclusive access program you have already paid for access to the following items which can be accessed directly through Blackboard:
 - An electronic copy of the textbook, *General, Organic, and Biological Chemistry: The Structures of Life*, 6th edition by Timberlake
 - Mastering Chemistry
 - Learning Catalytics
- A webcam. This course requires the use of a webcam for the online final exam. The webcam can be the type that's built into your computer or one that plugs in with a USB cable. There are webcams available on computers in Carlson Library that you may use. If you have difficulty with the Webcam requirement, please contact me as soon as possible to arrange for alternate live proctoring arrangements for the exams.
- LockDown Browser.
 - Watch this brief video to get a basic understanding of LockDown Browser and the webcam feature <https://www.respondus.com/products/lockdown-browser/student-movie.shtml>
 - Download and install LockDown Browser from this link: <https://download.respondus.com/lockdown/download.php?id=213815819>
- A non-programmable calculator. Only non-programmable calculators are allowed when you take exams in this course. Examples of non-programmable calculators include: TI-30XIIS, TI-30Xa, TI-30XS Multiview, TI-32, TI-34 II, TI-34 Multiview, TI-36, TI-36X Solar, Casio FX-77, Casio FX-260, Casio FX-65. Many of these can be purchased for about \$10. A calculator that has any of the following functions is not permitted for use on General Chemistry exams: solver, integration, differentiation, unit conversions, or a calculator that allows you to type an equation. If you are not sure whether your calculator is acceptable, [contact me](#) and ask.

Optional Materials:

- A hard copy of *General, Organic, and Biological Chemistry: The Structures of Life*, 6th ed, 2019, Timberlake, Prentice Hall

TECHNOLOGY REQUIREMENTS

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



Blackboard (<https://blackboard.utdl.edu>) and Modified Mastering Chemistry (available through the Blackboard course) will be used on a regular basis in this course. Students need to have access to a properly functioning computer throughout the semester. 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. Updated software is available from the [Online Learning Download Center](#). Other resources from UToledo Online can be found at <http://www.utoledo.edu/dl/students/required-info-online-learners.html>

For exams, students may use an approved calculator. Any calculator that is programmable, whether graphing or non-graphing, and any calculator based on a phone or other device that can receive or transmit data, are prohibited.

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

The University of Toledo has a number of academic policies intended to promote fairness and equity among students. These are wide ranging and include policies on adding and dropping a course, dual degree requirements, graduation with honors, academic dishonesty, confidentiality of student records and veteran assistance to name just a few. Please use the following URL to read a comprehensive list of academic policies that may pertain to you in this class and throughout your academic journey: [Undergraduate Academic Policies](#). If you have any questions after reading through the policies, please let me know.

Refer to the university's policy on Academic Dishonesty in the university catalogue. Violation of this policy can result in a course grade of F with additional university sanctions possible. You will be required to formally acknowledge the terms of our [Academic Honesty Statement](#), by providing a statement through our Blackboard course page.

COURSE EXPECTATIONS

1. Check Blackboard and your UT email every day.
2. Log into Collaborate before each class session starts. Follow along and actively work problems throughout lecture.
3. Finish assignments in a timely manner.
4. At a minimum, answer the assigned HW and quiz questions. There are many problems found throughout the book that should be worked if you are having difficulty with a certain concept.
5. If you need extra help, make an appointment with your professor or reach out through email. You will not be graded or judged based on the questions that you ask! Additional resources are listed on page 6.

As your instructor, I am here to help, and will do my best to respond to email within 48 hours. Students are expected to check their UT email account and blackboard frequently for important course information.

Examinations

If you cannot take an exam at the scheduled time due to an irresolvable conflict with a major University related responsibility, you must provide written documentation to verify the conflict before the exam date and obtain instructor approval before the exam. This situation may occur for students on official university business. If the documentation is approved, you will be given an opportunity to take the exam at an arranged time before the scheduled test date.

The final exam cannot be excused. For all exams you must show a **photo ID card**. You may use a **non-programmable calculator**. You cannot use a programmable calculator or phone.



Students who unexpectedly miss an exam due to illness, car accident or similar **extreme** circumstance should inform their instructor **ASAP**. **Documentation** such as a physician's note, an accident report, etc. is required. An email to the instructor or a telephone call within 24 hours is expected. In all other cases a missed exam will result in 0 on the exam.

COMMUNICATION GUIDELINES

Communication: This class is being taught for you so if you are having trouble understanding any of it, let me know. **I am here to help!** Although there are no regular office hours, there are at least 5 hours each week available for you to make appointments. Just click [here](#) to schedule one and we can meet virtually through Blackboard Collaborate. You can also email or leave a voice message on my office phone at any time; I will do my best to respond within 48 hours.

Netiquette: It is important to be courteous and civil when communicating with others. Students taking online courses are subject to the [Student Code of Conduct](#). To ensure your success when communicating online, take time to familiarize yourself with the "dos" and "dons" of [Internet etiquette](#).

Email: Students are expected to check their UT email account frequently for important course information. This information will also be posted on Blackboard.

Real-Time Communication: A link to Blackboard Collaborate Ultra, a real-time communication tool has been added to the course menu in Blackboard. We will be meeting there for class. Also, the tool is available for you to use if and when you need it. I would be happy to arrange a time to meet with you virtually if you feel that you have questions that would best be answered in real-time. Conversely, you could also use the tool to meet with fellow students online in order to enhance your understanding of course concepts.

OVERVIEW OF COURSE GRADE ASSIGNMENT

It is a very high priority to your instructor to ensure fairness and equity in all grading aspects of the course. There is nothing about this class that requires a certain number of students to get a certain grade. We don't use a curve, so every one of you can achieve the grade that you are willing to earn!

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. You can do this by logging onto the myUT portal, clicking on the "Student" tab, and then under "My Toolkit" click on Register/Drop/Withdraw.

Final Grading

The following is the distribution of possible points in the course:

Participation points*	60 pts	9 %
Mastering Chemistry (online HW)*	100 pts	14 %
Quizzes	100 pts	14 %
Midterm Exams – 2 @100 points each	200 pts	29 %
Final Exam	<u>240 pts</u>	<u>34 %</u>
	Total:	700 pts

*These categories will have extra points available to allow students a chance to reach the total points. However, points added to the total grade will not exceed total points for a category.

The grading scale for this class is:

	A	93%	A-	90%	
B+	87%	B	83%	B-	80%
C+	77%	C	73%	C-	70%
D+	67%	D	63%	D-	60%



Drop, Withdrawal and Incomplete Grades: *Dropped courses do not appear on your transcript. The deadline for dropping is February 2nd. You may withdraw from the course and receive a grade of W. The deadline for withdrawal is March 26th. W's do not affect your GPA but do appear on your transcript. A course grade of Incomplete is given only to those who have completed all but a small percentage of course requirements for an acceptable reason. You will retain all of your previously determined grades.*

UNIVERSITY POLICIES

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 Student Disability Services, 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 affiliation with Student Disability Services and are experiencing disability access barriers or are interested in a referral to healthcare resources for a potential disability or would like information regarding eligibility for academic accommodations, please contact the Student Disability Services Office (<http://www.utoledo.edu/offices/student-disability-services/>) by calling 419.530.4981 or sending an email to StudentDisability@utoledo.edu.

Additional Policy Statements

Students can find other university policies listed by audience on the University Policy webpage (<http://www.utoledo.edu/policies/audience.html/#students>).

ACADEMIC AND SUPPORT SERVICES

Please view the [Learner Support](#) page for links and descriptions of the technical, academic, and student support services available to UT students. The university provides a variety of academic and support services on campus to help you succeed and reach your fullest potential. Whether you need to ask a question, get help with an assignment, seek advice from a counselor, find a job or join a club, UToledo is there for you! Just use the following URLs to find the academic support or service you need:

Chemistry Help from Teaching Assistants: Virtual/online help will be available. The link for the Help Center is <https://us.bbcollab.com/guest/ce2a41f345ed4e9d939dd6e7b0ef0c63>. No appointment is necessary!

Tutoring through the Learning Enhancement Center: <http://www.utoledo.edu/success/lec/>

Library: <http://www.utoledo.edu/library/>

Success Coaching: <https://www.utoledo.edu/successcoach/>

Student Affairs: <http://www.utoledo.edu/studentaffairs/>

Career Services: <http://www.utoledo.edu/success/career/>

Course scheduling assistance: Chemistry Department Secretary, Ms. Samples. You can find her in Room BO 2022, email: pamela.samples@utoledo.edu, or telephone 419-530-2698. Ms. Samples takes care of all scheduling changes.



SAFETY AND HEALTH SERVICES FOR UTOLEDO STUDENTS

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

SPECIAL UNIVERSITY WIDE COURSE EXPECTATIONS DURING COVID-19

This is an unprecedented time for our Rockets community at the University of Toledo. In times of challenge, such as this, we come together to support each other and help keep the more vulnerable members of our community safe during the COVID-19 pandemic. If we all do our part, we will help to minimize the spread of infection and maintain engaging face to face class environments this fall. That is why we are asking all faculty, staff and students to adhere to the special course expectations described below. Please review these policies described below.

Course Attendance

In order to ensure that we self-quarantine if symptomatic, students, faculty and staff must perform a daily health assessment, based on based on [CDC guidelines](#), before coming to campus each day, which includes taking your temperature. Students who are symptomatic/sick should not come to class and should contact the Main Campus Health Center at 419-530-3451. The University of Toledo has a [missed class policy](#). It is important that you understand the attendance requirements for this course. Please engage with me if you have any questions about these requirements. *Absences due to COVID-19 quarantine or isolation requirements **are** considered excused absences.* You should notify me if you are in quarantine or isolation and these absences may not require written notice.

Face Coverings

To help keep each other safe, everyone must wear face coverings 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 that prevents you from wearing a face covering due to a health condition deemed high-risk for COVID-19 by the Centers for Disease Control and Prevention (CDC), you should submit a request for accommodation through the Student Disability Services Office (SDS) by completing this [online application](#). You will need to provide documentation that verifies your health condition or disability and supports the need for accommodations. If you are already affiliated with SDS and would like to request additional accommodations due to the impact of COVID-19, please contact their accessibility specialist to discuss your specific needs.

Social Distancing

As further efforts to keep everyone safe, students should practice social distancing inside and outside the classroom, including when you enter and exit. Please maintain at least 6 feet of distance between yourself and others, follow posted signage, and pay attention to the seating arrangements in the classroom. It's important that you do not remove stickers or tape from seats and/or tables, as they are there to provide guidance on the appropriate classroom capacity based on recommended social distancing between individuals. Please be conscious of your personal space and respectful of the space of others in the class.

Desks and Work Spaces

An important part of keeping our classroom spaces safe involves keeping them sanitized. We ask all students to



sanitize their desk and/or work space before class begins, with the sanitizing spray and paper towels provided in the classroom.

Special Note

Although we have developed a rigorous and evidence-based plan for keeping each other safe during COVID-19, it's important to note that, based on the unpredictability of the virus, things can change at any time. So please be patient and understanding as we move through the semester. If at any point you have any concerns about class, completing course work/assignments, and/or health concerns related to COVID, please let me know.

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.

Copyright Notice

The materials in the course website are only for the use of students enrolled in this course for purposes associated with this course and may not be retained or further disseminated.

A summary of the weekly assignments and anticipated course schedule are provided on the following pages. Note the Exam date. As instructor, I reserve the right to modify the schedule of topics if I believe it to be in the best interest of the class, however, the Exam dates will NOT change.

Be Sure That Your Travel & Employment Plans Do Not Conflict with the Exam Schedule.



CHEM 1120 – Chemistry for Health Sciences

University of Toledo

TENTATIVE Course Schedule – Spring 2021

Week	Dates	Chapter Sections and Topics	Assignments*	SLOs
1	Jan 19-24	MLK Day, Mon. Jan 18 – no class Welcome 6.6-6.9 Ionic and Molecular Compounds	Getting Started Quiz Read Ch 6.6-6.9 Guided Note-Taking LC questions Intro & Ch 6 HW in MC Ch 6 quiz in Bb	1,2,3,4,5
2	Jan 25-31	9. Solutions	Read Ch 9 Guided Note-Taking LC questions	1,2,3,4,5
3	Feb 1-7	9. Solutions (Continued) 10. Reaction Rates and Chemical Equilibrium	Read Ch 10 Guided Note-Taking LC questions Ch 9&10 HW in MC Ch 9&10 quizzes in Bb	1,2,3,4,5
4	Feb 8-14	11. Acids and Bases	Read Ch 11 Guided Note-Taking LC questions Review - Gen Chem in MC	1,2,3,4,5
5	Feb 15-21	Break, Tues. Feb 16 – no class 11. Acids and Bases (Continued) 12. Intro to Organic Chemistry: Hydrocarbons	Midterm Exam 1: Mon. Feb 15 Ch 1-10 Read Ch 12 Guided Note-Taking LC questions Ch 11 HW in MC Ch 11 quiz in Bb	1,2,3,4,5
6	Feb 22-28	12. Intro to Organic Chemistry: Hydrocarbons (Continued)	Guided Note-Taking LC questions Ch 12 HW in MC Ch 12 quiz in Bb	1,2,3,4,5
7	Mar 1-7	13. Alcohols, Phenols, Thiols, and Ethers 14. Aldehydes, Ketones, and Chiral Molecules	Read Ch 13&14 Guided Note-Taking LC questions Ch 13 HW in MC Ch 13 quiz in Bb	1,2,3,4,5
8	Mar 8-14	Break, Wed. Mar 10 – no class 14. Aldehydes, Ketones, and Chiral Molecules (Continued) 15. Carbohydrates	Read Ch 15 Guided Note-Taking LC questions Ch 14&15 HW in MC Ch 14&15 quizzes in Bb	1,2,3,4,5

9	Mar 15-21	16. Carboxylic Acids and Esters 17. Lipids	Read Ch 16&17 Guided Note-Taking LC questions Ch 16HW in MC Ch 16quizzes in Bb	1,2,3,4,5
10	Mar 22-28	18. Amines and Amides 19: Amino Acids and Proteins	Read Ch 18&19 Guided Note-Taking LC questions Ch 17&18 HW in MC Ch 17&18 quiz in Bb	1,2,3,4,5
11	Mar 29- Apr 4	Break, Mon. Mar 29 – no class 19: Amino Acids and Proteins (Continued) 20. Enzymes and Vitamins	Read Ch 20 Guided Note-Taking LC questions Ch 19&20 HW in MC Ch 19&20 quizzes in Bb	1,2,3,4,5
12	Apr 5-11	21. Nucleic Acids and Protein Synthesis	Read Ch 21 Guided Note-Taking LC questions Ch 21 HW in MC Ch 21 quiz in Bb	1,2,3,4,5
13	Apr 12-18	22. Metabolic Pathways for Carbohydrates	Midterm Exam 2: Mon. Apr 12 Ch 11-21 Read Ch 22 Guided Note-Taking LC questions Ch 22 HW in MC Ch 22 quiz in Bb	1,2,3,4,5
14	Apr 19-25	23. Metabolism and Energy Production	Read Ch 23 Guided Note-Taking LC questions Ch 23 HW in MC Ch 23 quizzes in Bb	1,2,3,4,5
15	Apr 26- May 2	24. Metabolic Pathways for Lipids and Amino Acids Break Thurs. & Fri. Apr 29-30 – no class	Read Ch 24 Guided Note-Taking LC questions Ch 24 HW in MC Final Reviews due in MC	1,2,3,4,5
Finals Week	May 3-9	***** Comprehensive Final Exam ***** Monday, May. 3 from 2:45-4:45 PM You Must Take the Final at This Time.		