CHEM103: General, Organic, and Biochemistry I
Fall 2020
Virtual instruction

Instructor: Melissa A. Mullen Davis, Ph.D.
Pronouns: she/her/hers
Office: 218 Caputo Hall
Google Voice Phone: 302-307-1741
e-mail: melissa.mullendavis@millersville.edu
Office Hours: Virtual Drop-In Zoom “Office Hours” – follow link and instructions on D2L
Mon 9-10 am, Wed 2-4 pm, Fri 9-11 am, and by appointment

Credit: 2 class hours per week lecture and 2 lab hours per week. No credit towards Chemistry major.

Meeting Times:
- Lecture: Asynchronous virtual instruction with optional live sessions
- Lab:
  - Section 01A Thurs 10:00 – 11:50 am Online, Synchronous Dr. Michael Elioff
  - Section 01B Thurs 1:10 – 3:00 pm Online, Synchronous Dr. Melissa Mullen Davis
  - Section 01C Wed 2:00 – 3:50 pm Online, Synchronous Dr. Maria Schiza

Required Materials:
  Your textbook for this class is available for free online in web view for any device or PDF! You can also purchase on iBooks or get a print version on your favorite online retailer for about $60. You can use whichever format(s) you would like. The textbook can be found at: https://openstax.org/details/books/chemistry-atoms-first-2e
- Scientific, non-graphing calculator which must be able to handle logarithms (log, ln) and exponents (10^x, e^x, y^x)
- Regular access to D2L (https://millersville.desire2learn.com) and university email
- Recommended: Hard copy periodic table (printed page would work!)

Course Overview:
Our goal is to learn beginning chemistry principles and apply those to the world around us! We will cover a number of topics that will use chemistry to explain observations and phenomena associated with biology, cleaning products, food, and current topics in the news.

The class includes an introduction to the basic theories of general and organic chemistry including nomenclature, reactions, and problem solving. This course is appropriate for non-science majors and satisfies general education requirements. Proficiency in algebra is essential.

Course Learning Objectives:
The goals of this course are to enable you to:
- Be able to use qualitative and quantitative skills to solve chemistry problems
- Be able to use chemical theories to explain chemical and physical phenomena
- Be able to organize, present, and interpret data to draw reasonable conclusions
- Be able to explain natural phenomena encountered outside the classroom using chemical principles
Course Organization
We will address the goals of the course by exploring a series of topics organized into modules. Within each module, topics will be organized to address an overarching question or problem.

Module topics:
- Should the US use nuclear power as an energy source?
- How can a person survive without a functional kidney?
- How do cleaning products work?
- The Chemistry of Baking
- Breathing, SCUBA, and the Bends
- Why doesn’t a Tesla need gasoline?

What should I expect during each Module?
Each Monday I will send an email and post a course announcement with content for the week:
- Content videos with mid- or end of video participation questions
- Recommended reading(s) and other external resources
- Handout(s) with practice questions
- D2L Homework
- Information for laboratory assignments and/or experiments

At the end of each module there will be a mini exam administered on D2L to assess learning.

Succeeding in Virtual Chemistry Class!
I promise to provide you with the resources you need to help you succeed – class materials, examples, readings, practice problems, office hours, etc. but you are ultimately responsible for the knowledge you are gaining.

To do well in this class, it is important to:
1) Keep up with the material. I recommend keeping a schedule and working on Chemistry every day.
2) Engage in the material and be an active learner. Take handwritten notes during content videos and honestly attempt video content questions.
3) Complete practice problems from handouts and D2L homework. I recommend working without your notes first to test your understanding.
4) Seek help from available resources. Reach out to me, other chemistry students, peer tutoring, etc. Check the Microsoft Teams page, FAQ page on D2L, and/or attend my virtual, drop-in office hours or schedule an appointment.

Evaluation of Learning:
<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Homework</td>
<td>20%</td>
</tr>
<tr>
<td>Mini Exams (6)</td>
<td>35%</td>
</tr>
<tr>
<td>Final Exam (cumulative)</td>
<td>15%</td>
</tr>
<tr>
<td>Laboratory</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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</table>

Final letter grades will be assigned on a standard plus/minus scale:
- A: 90-100% (A+: 93-100; A: 90-93)
- B: 80-90% (B+: 87-90; B: 83-87; B-: 80-83)
- C: 70-80% (C+: 77-80; C: 73-77; C-: 70-73)
- D: 60-70%
- F: less than 60%
Participation and Engagement, 10%
Engagement in course material is essential for learning chemistry! You are expected to take responsibility for learning course material and participating in the course. This can be challenging with online classes and virtual instruction. To facilitate engagement and participation you are expected to watch course content videos and answer mid-video questions. Your answers will count towards the participation component in the course (note that specific answers will not be graded for being correct, only for participating).

Homework, 20%
There will be two types of homework assignments.
(1) Handouts with practice questions. Each week I will provide a handout with practice questions to assist your learning of the content. You must complete the handouts and upload them to D2L by Sun 11:59 pm. Handouts will be graded on completion (5 points/handout) and it is up to you to check your answers against the provided key (which appears after your upload).
(2) D2L Homework assignments. Homework assignments administered on D2L will be assigned to provide additional practice with course material. You may take them up to three times to gain mastery of the material and to improve your score. These will be graded for correctness (10 points/quiz) and must be completed by Sunday 11:59 pm. The lowest grade on the D2L homework assignments will be dropped.

Exams, 50%
There will be two types of exams.
(1) Mini Exams, 35%
Six mini exams will be administered on D2L at the end of each module. These will be opportunities for you to demonstrate your individual understanding and ability to apply, analyze, and synthesize the material discussed in the course and in assigned readings. Exams will be open-resource, will be open for 24 hours, and will have a time limit of 45 minutes.
(2) Final Exam, 15%
A comprehensive final exam will be administered on D2L during the evaluation period at the end of the semester. The Final Exam will be open for 48 hours and will have a time limit of 2 hours.

Make-Up Exam Policy
If you know ahead of time that you will miss an exam you must tell me as soon as possible, ideally at least one full week before the exam date. You will be expected to take the quiz or exam before the scheduled exam period unless illness or a family emergency causes a late make-up exam to be necessary. The make-up exam will not necessarily be the same as the exam administered to the rest of the class. Missing an exam without prior permission will result in a score of zero and cannot be made up.

Learning Accommodations
Any student who meets the eligibility requirements to receive academic accommodations through learning services should speak with the Office of Learning Services in Lyle Hall as early in the semester as possible. For more information: http://www.millersville.edu/learningservices.

Laboratory Assignments, 20%
The virtual laboratory component of CHEM 103 is designed to give you experience with experimental protocols and data analysis and will reinforce lecture material.
There are three parts to the CHEM 103 virtual laboratory:

(1) A short, 3-5 question **pre-lab quiz** based on posted laboratory protocols, video, and materials. This quiz will be posted on Monday and will be due before your scheduled laboratory meeting.

(2) A **synchronous meeting** with your lab and laboratory instructor at your scheduled laboratory time using Zoom (or an alternative teleconferencing software).

(3) A **laboratory assignment** will be due each Sunday at 11:59 pm. This assignment will vary by week and topic but could include questions about laboratory protocol, data analysis, calculations, preparation of graphs, etc. The assignment may also include practice questions about chemistry topics.

* Some weeks there will be no pre-lab quiz assigned. Details will be posted in the Monday announcement and can be seen in the laboratory folder on D2L.

### Tentative Lab Schedule*

*subject to change

<table>
<thead>
<tr>
<th>Week of</th>
<th>Lab Experiment/Topic</th>
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<tbody>
<tr>
<td>8/24</td>
<td>Welcome/What to Expect/Safety</td>
</tr>
<tr>
<td>8/31</td>
<td>“Elements and the Periodic Table” (Flame Testing)</td>
</tr>
<tr>
<td>9/7</td>
<td>Measurements and Density*</td>
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<tr>
<td>9/14</td>
<td>Separation of a Mixture</td>
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<tr>
<td>9/21</td>
<td>Names and formulas of compounds (worksheet)</td>
</tr>
<tr>
<td>9/28</td>
<td>Molecular models and naming part 2 (worksheet)</td>
</tr>
<tr>
<td>10/5</td>
<td>Measuring pH of household solutions</td>
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<tr>
<td>10/12</td>
<td>Stoichiometry calculations (worksheet)</td>
</tr>
<tr>
<td>10/19</td>
<td>Formula of a compound</td>
</tr>
<tr>
<td>10/26</td>
<td>Chemical Equilibrium</td>
</tr>
<tr>
<td>11/2</td>
<td>Solutions, Dilutions, and Titration</td>
</tr>
<tr>
<td>11/9</td>
<td>Gas Law Relationships</td>
</tr>
<tr>
<td>11/16</td>
<td>Changes of State</td>
</tr>
<tr>
<td>11/23</td>
<td>NO LAB – THANKSGIVING</td>
</tr>
<tr>
<td>11/30</td>
<td>Making a Battery (pH)</td>
</tr>
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### Attendance, Absences, and Make-Ups

You are expected to complete all online course content which will be posted on D2L and access materials at least once a week. You are also expected to log in to lab synchronously each week at your scheduled laboratory time.

Given the COVID19 pandemic, please:

- Prioritize your health.
- Contact your me, Dr. Elioff, or Dr. Schiza if you have any participation or attendance concerns to work out individualized plans, as needed.
- Wear masks and social distance!
Academic Honesty Policy
According to Millersville University's Academic Honesty Policy: "Students of the University are expected to be honest and forthright in their academic endeavors." If you break the academic honesty policy, there are severe penalties. A failing grade will be assigned and you may be prosecuted by an Academic Review board. Actions that violate the Academic Honesty Policy are:

1. Plagiarism: inclusion of someone else's words, ideas, or data as one's own work.
2. Fabrication: falsification of research or other findings.
3. Cheating: the act or attempted act of deception by which an individual tries to misrepresent that the individual has mastered subject matter in an academic project or the attempt to gain an advantage by the use of illegal or illegitimate means. Submitting in-class participation cards for another student is considered cheating.
4. Academic Misconduct: violation of University policies by tampering with grades or participating in the distribution of any part of a test before its administration.

Official Millersville Attendance Policy
1. Students are expected to attend all classes. It is the student's responsibility to complete all course requirements even if a class is missed. If a student misses class for an officially excused reason, then the student is entitled to make up the missed work but only at the convenience of the faculty member. Responsibility for materials presented in, assignments made for, and tests/ quizzes given in regularly scheduled classes lies solely with the student.
2. The Millersville University policy states that faculty will excuse absence for the following reasons:
   a. personal illness
   b. death or critical illness in the family
   c. participation in a university-sponsored activity
   d. jury duty
   e. military duties
   f. religious holidays
3. Faculty judge the validity of student absences from class within the University's approved guidelines and may require documentation for excuse absences. Faculty will evaluate any reason, other than those listed above, for a student missing class and determine whether the absence is justified. In these circumstances, a student may make up missed work at the discretion of the instructor.
4. In the case of foreseeable absences, students are encouraged to notify the faculty member in advance. A student who will miss class due to participation in an official University activity must notify the instructor well in advance of the activity to assure that the absence is excused.
5. For more information: http://www.millersville.edu/registrar/faculty/attendance_policy.php

Title IX Statement
Millersville University and its faculty are committed to assuring a safe and productive educational environment for all students. In order to meet this commitment, comply with Title IX of the Education Amendments of 1972, 20 U.S.C. §1681, et seq., and act in accordance with guidance from the Office for Civil Rights, the University requires faculty members to report to the University's Title IX Coordinator incidents of sexual violence shared by students. The only exceptions to the faculty member's reporting obligation are when incidents of sexual violence are communicated by a student during a classroom discussion, in a writing assignment for a class, or as part of a University-approved research project. Faculty members are obligated to report to the person designated in the University Protection of Minors policy incidents of sexual violence or any abuse of a student who was, or is, a child (a person under 18 years of age) when the abuse allegedly occurred. Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is available at www.millersville.edu/titleix.
Counseling Reminder
Students sometimes face mental health or drug/alcohol challenges in their academic careers that interfere with their academic performance and goals. Millersville University is a caring community and resources are available to assist students who are dealing with problems. The Counseling Center (717-871-7821) is an important resource for both mental health and substance abuse issues. Additional resources include: Health Services (717-871-5250), Center for Health Education and Promotion (717-871-4141), Campus Ministries, and Learning Services (717-871-5554).

Americans with Disabilities Act
Millersville University is committed to equality of opportunity and freedom from discrimination for all students, employees, applicants for admission or employment, and all participants in public University-sponsored activities. In keeping with this commitment, and in accordance with the Americans with Disabilities Act (ADA) the University will make every effort to provide equality of opportunity and freedom from discrimination for all members of the University community and visitors to the University, regardless of any disability an individual may have. Accordingly, the University has taken positive steps to make University facilities accessible to individuals with disabilities and has established procedures to provide reasonable accommodations to allow individuals with disabilities to participate in University programs. The University administration and management are obligated to report any allegation of discrimination to the appropriate office as defined in this policy.

Please let me know how I may make accommodations in the classroom setting that will enhance and support your learning.